

# Planning & Scheduling Using Primavera P6 Professional Project Management



**MUHAMMAD WASEEM KHAN**  
**MS (PROJECT MANAGEMENT) - DISTINCTION**

**ORACLE PRIMAVERA PROJECT MANAGEMENT IMPLEMENTATION SPECIALIST**  
**CERTIFIED PROJECT MANAGEMENT TRAINER & CONSULTANT**

# Course Goals & Objectives



**Define Project Management Processes**

**Use Primavera P6 IDE & Its Features**

**Create a Project with Activities & Resources**

**Calculate a Project Schedule**

**Analyze Resource/ Cost Data**

**Compare Current vs. Target Schedule**

# Lessons

- Lesson 1

- History & Introduction
- Diff b/w Primavera & MS Project (Server/Desktop)

- Lesson 2

- World's Top PM Standards
- Project Management Lifecycle

- Lesson 3

- Data, Navigation, and Layouts

- Lesson 4

- Enterprise Project Structure
- Org. Breakdown Structure
- Mapping EPS & OBS

- Lesson 5

- Creating a Project
- Adding Project Details

- Lesson 6

- Creating WBS & Assigning Responsible Manager

- Lesson 7

- Adding Activities/ Types
- Adding Activity Details

- Lesson 8

- Creating Relationships
- (Through Activity Network, Gantt Chart, Rel. Tabs)

- Lesson 9

- Perform Scheduling
- Schedule Settings

- Lesson 10

- Assigning Constraints
- (Project/ Activity Level)

# Lessons

- Lesson 11
  - Maintaining Project Documents Library
- Lesson 12
  - Formatting Scheduled Data
- Lesson 13
  - Defining & Assigning Resources, Cost & Expenses
- Lesson 14
  - Analyzing Resources with Spreadsheets & Profiles
- Lesson 15
  - Optimizing Project Plan (Schedule & Resource)
- Lesson 16
  - Baseline Project Plan
  - (Project Baselines & User Baselines)
- Lesson 17
  - Project Execution & Control (Spotlight Feature)
- Lesson 18
  - Reporting Performance (Screens, Filters, Grouping)
  - Performance Monitoring (Earned Value Management)
  - Primavera Visualizer
- Lesson 19
  - Project Website

# Introduction to Primavera

## Lesson 1

# Introduction to Primavera

- Objectives
  - History and Present
  - Primavera Solutions
  - Oracle's Primavera P6

# The Value of Project Management

- **80% of global executives believed having project management as a core competency helped them remained competitive during the recession<sup>1</sup>**
- **“The delivery of business outcomes is realized through the success of projects, and in essence that is the way that project management strategies drive organizational success,”** *says Adrian McKnight, PMP, Program Director at Suncorp-Metway Ltd., Brisbane, Queensland, Australia*
- **Nearly 60% of senior executives said building a strong project management discipline is a top-three priority for their companies as they look to the future<sup>2</sup>**
- **“Good project management discipline stopped us from spending money on projects that fail,”** *says Ron Kasabian, General Manager at Intel, Folsom, California, USA*

<sup>1</sup> *Closing the gap: The link between project management excellence and long-term success, Economist Intelligence Unit, October 2009.*

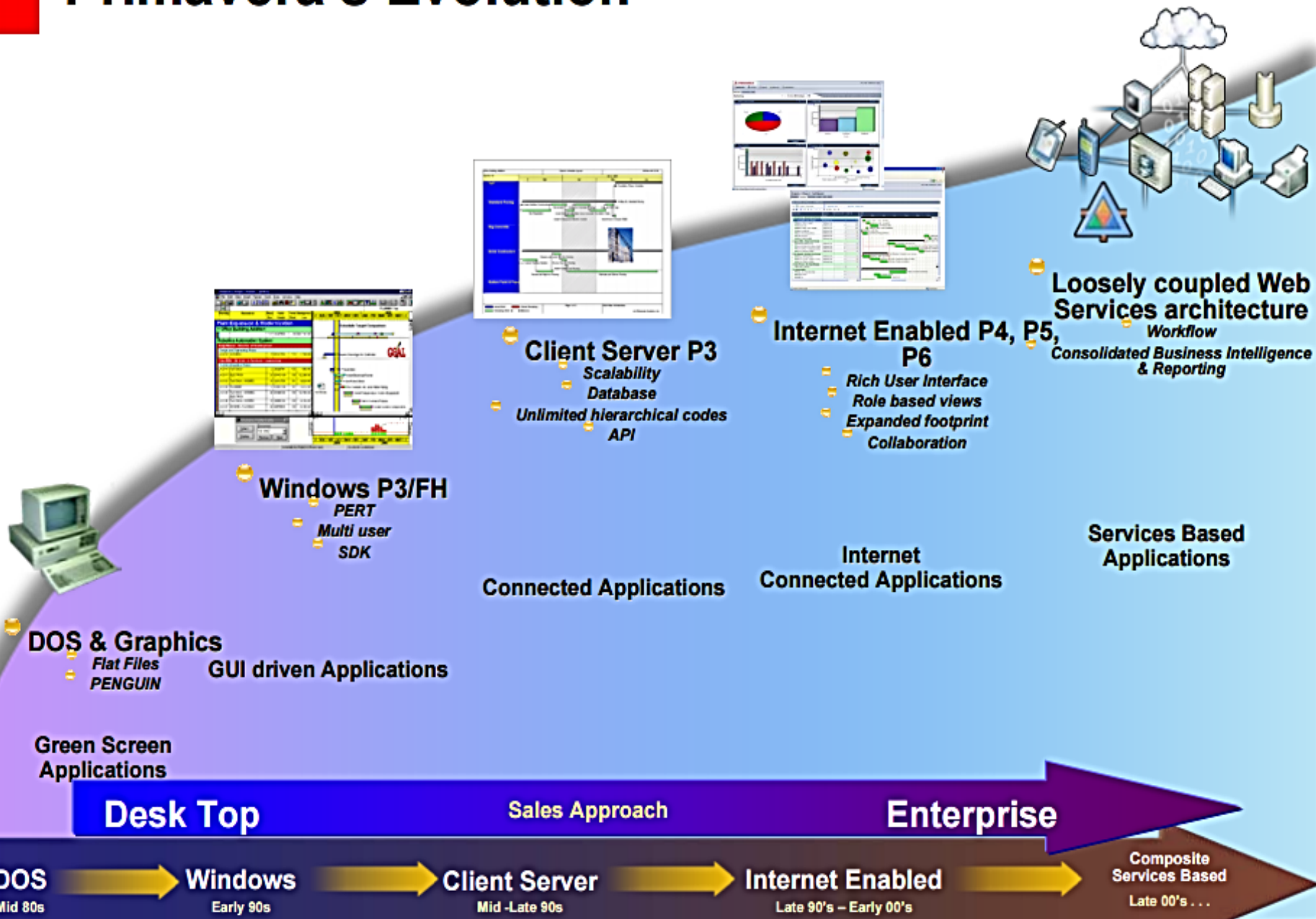
<sup>2</sup> *McKinsey & Co., January 2010. Results based on a survey of 1,440 senior executives.*

# History and Present

- Primavera began in **1983** with the launch of PC-based software for engineering and construction.
- Oracle has acquired *Primavera Software, Inc.*, a leading provider of Project Portfolio Management (PPM) solutions for project-intensive industries on **October 8, 2008**.
- The present version is *Oracle Primavera P6 Professional Project Management v 16.1*, released on **March 31, 2016**.








# Primavera's Evolution



# Project-intensive Industries Require Enterprise PPM

- Deliver high-quality projects on-time and within budget
- End-to-end visibility for improved, timely decision making

	Architecture, Engineering & Construction	Public Sector, Aerospace & Defense	Utilities, Oil & Gas	High Tech & Manufacturing	IT and Services
<b>Key Industry Requirements</b>					
	<ul style="list-style-type: none"> <li>• Improve coordination and collaboration</li> <li>• Avoid and protect against claims</li> </ul>	<ul style="list-style-type: none"> <li>• Manage large programs with multiple suppliers and subcontractors</li> <li>• Improve accountability and meet regulatory requirements</li> </ul>	<ul style="list-style-type: none"> <li>• Manage short-duration, high-intensity outages and shutdowns</li> <li>• Increase productivity and speed of project delivery</li> </ul>	<ul style="list-style-type: none"> <li>• Bring the right products to market within market windows</li> <li>• Collaborate across the global supply chain</li> </ul>	<ul style="list-style-type: none"> <li>• Prioritize projects based on strategic objectives</li> <li>• Optimize assignment of scarce resources</li> </ul>

# Overview of Primavera



- **Primavera’s mission is to “*Rid the world of project failure*”**
  - 5,000 global enterprises, 18,000 medium-sized customers, and 2.5 million users in 85 countries
  - More than \$6 trillion in project value managed with Primavera
  - Consistently recognized as a leader by industry analysts
  - Global reach: 43% of revenue from outside North America, localized products in 13 languages
  - Award-winning customer service
  - Industry-specific business processes
  - Standard, pre-built integrations with leading ERP vendors
  - Open standards-based integration with industry applications
- **30 years as proven PPM leader for project-intensive industries**
  - 375 of top 400 engineering and construction firms
  - 17 of top 20 power companies
  - 9 of top 10 oil companies
  - All 5 US military branches
  - 12 of 16 US Federal agencies
  - 9 of top 10 aerospace and defense contractors

# Large Portfolio of Loyal Customers Rely on Primavera for Their Mission-Critical Projects



Architecture, Engineering & Construction	Public Sector, Aerospace & Defense	Utilities, Oil & Gas	High Tech & Manufacturing	IT & Services
<p><b>KBR</b></p> <p><b>PARSONS</b></p> <p><b>FLUOR</b></p> <p><b>JE JACOBS</b></p> <p><b>HILL</b> Hill International</p> <p><b>CH2MHILL</b></p> <p><b>Bovis Lend Lease</b></p> <p><b>BECHTEL</b></p>	<p><b>LOCKHEED MARTIN</b></p> <p>Transportation Security Administration</p> <p><b>THALES</b></p> <p>U.S. DEPARTMENT OF HOMELAND SECURITY</p> <p><b>U.S. ARMY</b></p> <p><b>NORTHROP GRUMMAN</b></p> <p><b>BAE SYSTEMS</b></p> <p>FEDERAL AVIATION ADMINISTRATION</p> <p><b>NASA</b></p>	<p><b>ExxonMobil</b></p> <p>bp</p> <p><b>Duke Energy</b></p> <p><b>Ameren</b></p> <p><b>SOUTHERN COMPANY</b> Energy to Serve Your World®</p> <p><b>Shell</b></p> <p><b>Chevron</b></p>	<p><b>SIEMENS</b></p> <p><b>MOTOROLA</b></p> <p><b>CATERPILLAR</b></p> <p><b>Honeywell</b></p> <p><b>freescale</b> semiconductor</p> <p><b>ALSTOM</b></p> <p><b>FMC Technologies</b></p> <p><b>BOMBARDIER</b></p> <p><b>GE</b></p>	<p>Principal Financial Group</p> <p><b>nab</b></p> <p><b>GUARDIAN</b></p> <p><b>PROGRESSIVE</b></p> <p><b>Aflac</b></p> <p><b>SUNTRUST</b></p> <p><b>EDS</b></p>

# Construction Company Successfully Manages Thousands of Projects



*"It gives us a strategic advantage to say that we use Primavera software, because our clients trust the Primavera name."*

*Cost and Scheduling Manager  
Parsons Infrastructure and Technology*

**PARSONS**

## **Business challenges:**

- Provide clients with consistent and profitable engineering and construction management services
- Deliver project management, detailed design, procurement and management of one-of-a-kind projects

## **Business results:**

- Over 4,000 projects managed and 6,000 team members coordinated
- Consistent project control across the enterprise
- Decreased schedule development time by 50%
- Accurate and timely performance data to support management decisions

# Oil Company Streamlines Shutdowns and Standardizes Processes



*“From the initial quotes to awarding of contracts and beyond, we can track all elements of purchasing and payments, as well as the progress of the work itself.”*

*Project Management Professional (PMP)  
Kuwait National Petroleum Company*



## **Business challenges:**

- Increase oil production without further capital investment
- Replace 31 legacy systems used to manage maintenance and turnaround work

## **Business results:**

- Standardized on Primavera for project management and scheduling and integrated with IBM's Maximo and Oracle's Human Capital Management and Financials
- 7% reduction in shutdown duration
- Savings of US\$21 million per year, with US\$3 million from manpower reduction
- Quicker procurement cycles, including faster payments to contractors

# Aerospace & Defense Contractor Improves Productivity



*“Primavera provides us with the toolset and visibility to... take an idea and transform it into a complex product that flies away and saves lives.”*

*Program Planning and Control Manager  
Military and Commercial Programs*



**Sikorsky**

A United Technologies Company

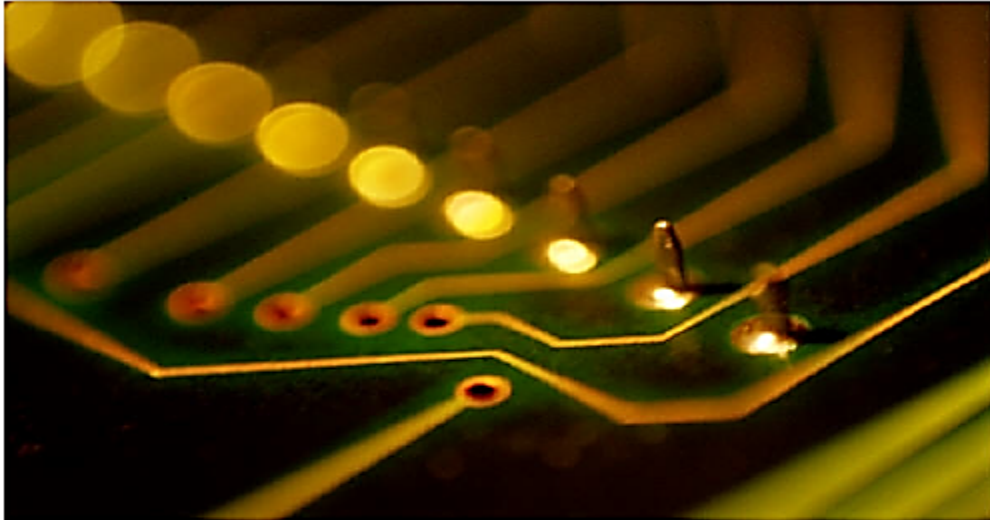
## Business challenges:

- Manage lifecycles of billion-dollar programs – from contract award through delivery
- Comply with government reporting requirements
- Collaborate with customers

## Business results:

- Managing more than 350 projects, with 50 to 30,000 tasks each, including the Blackhawk Helicopter program
- Integrated with SAP and other internal systems
- Improved productivity and efficiencies, providing greater value to customers
- Gained visibility into contract performance

# High-Tech Company Gains Visibility and Control of Development Projects Worldwide



*"We had immediate visibility into our project portfolio and resources, along with status against official baselines based on business rules we defined. The information is right there, and everyone can trust that it's accurate."*

*Operations Manager  
Freescale Semiconductor*



## **Business challenges:**

- Provide accurate project information to all stakeholders across all functional groups
- Manage both functional and matrixed organizational structures
- Manage both waterfall and spiral development models

## **Business results:**

- 160 product releases per year
- "Real-time, all the time" dashboards showing end-to-end PPM information
- Eliminated redundant work
- Better control of commitments, resources and deliverables
- 50% productivity gain in scheduling and reporting
- Saving 8 hours per week in administrative time



# Insurance Company Standardizes Platform to Improve IT Performance and Control Costs



*“Our business units and IT have the same objectives, the same agenda, the same priorities. Primavera’s software plays a major role in making that happen.”*

*IT Executive  
The Guardian Life Insurance Company*



## **Business challenges:**

- Run IT like a business while reducing IT budget by US\$40 million over two years
- Establish a sound financial management structure for IT

## **Business results:**

- Eliminated US\$20 - \$50 million of nonstrategic projects from the IT budget each year
- Increased rate of delivering projects on time, on budget and within scope from 35% to 69%
- Reduced routine IT maintenance costs from 30% of the budget to only 18%

# Customer Results



- ***New Jersey Department of Transportation*** realized an estimated savings of US\$50 million annually by reducing project delays
- ***University of Utah*** used Primavera Unifier to help complete a major cancer center expansion project, budgeted at US\$105 million, completed two months early and US\$9 million under budget
- ***Parkland Health & Hospital System*** completed a 1,700-space parking garage nearly 14% under budget and came in US\$8 million under projection on the new US\$683 million acute care hospital
- ***CPqD*** cut project monitoring time approximately 75%
- ***GERC*** reduced planning time and costs by 50%

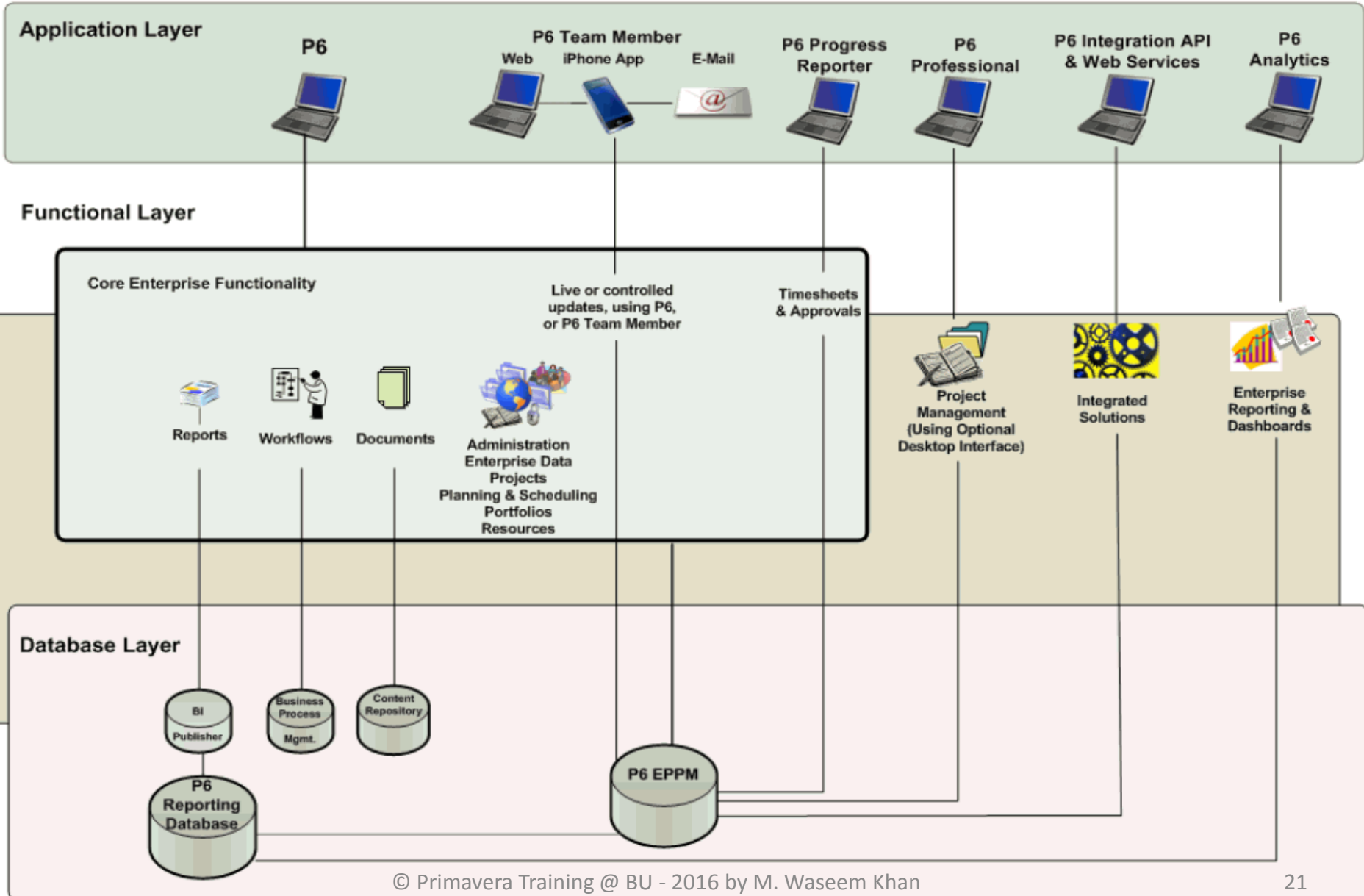
# Reports From Analyst Firms

- The Info-Tech Research Group ranked Primavera as a “Market Pillar” in their Enterprise Project Portfolio Management Vendor Landscape for 2014.

# Oracle's Primavera P6

- Gives today's Project Managers and Schedulers the one thing they value most: ***Control***.
- The recognized standard for high-performance project management software, is designed to handle large-scale, highly sophisticated and multifaceted projects.
- Can be used to organize projects up to ***100,000 activities***, and it provides unlimited resources and an unlimited number of target plans.

# Primavera P6



# Applications

- **P6:** Simply termed P6, it is the primary interface for administering and managing projects.
- **P6 Professional for EPPM:** The P6 web application is the main interface for all project management functionality.
- **P6 Progress Reporter:** P6 EPPM includes the P6 Progress Reporter integrated timesheet entry software. Resources use P6 Progress Reporter to record their time spent working on assignments via electronic timesheets, and approving managers use P6 to review and approve them.
- **P6 Integration API:** A Java-based application programming interface (API) enabling your P6 EPPM deployment to interface with other components and systems.
- **P6 Web Services:** P6 Web Services is an integration technology that extends P6 business objects and functionality.
- **P6 Analytics:** An optional integrated dynamic reporting tool with advanced visual features, including dashboards.

# Functionality



- **Core Enterprise Functionality:** We use P6 for all of the following core enterprise functionality:
  - **Administration and Enterprise Data:** Administer user accounts, preferences, views, application settings, and enterprise data.
  - **Project, Portfolio, and Resource Management:** P6 provides an extensive array of features designed to optimize all phases of Project Management, Resource Management, and Portfolio Management. It includes full support for activities, work breakdown structures, costs, resource administration and assignment, roles, teams, portfolio analysis, capacity planning, and convenient dashboards for measuring status at any level at every moment.
  - **Document Management:** P6 includes document management support with or without the optional document repository option.
  - **Workflows:** The workflow engine bundled provides Business Process Modeling Notation (BPMN) compliant graphical notation that depicts the steps in your project initiation workflows.
  - **Reports:** Generate and view reports using your standard web browser running P6.

# Functionality

- ***Planning and Scheduling:*** The optional P6 Pro component of the suite provides a robust set of features primarily for planners and schedulers, including reflections, schedule comparison (Claim Digger), and a report designer.
- ***Time Reporting:*** P6 EPPM includes P6 Progress Reporter, an optional integrated timesheet entry application.
- ***Integrated Solutions:*** Build or deploy other systems and use the P6 Integration API or P6 Web Services to integrate them with P6 EPPM.
- ***P6 Analytics:*** Extend your solution by adding P6 Analytics with the Oracle Business Intelligence (OBI) metadata layer to facilitate the creation of ad-hoc reports and interactive custom dashboards reflecting trends and metrics for activities, portfolios, resource assignments, utilization, and project history. Also receive proactive alerts based on integrated report data mined from the ODS and star databases.



# Technology

- ***The P6 EPPM Database:*** The main database for all your P6 EPPM data.
- ***BPM Workflow:*** The separate workflow engine bundled with P6 EPPM.
- ***Oracle BI Publisher:*** The database server hosting the reporting library, templates, and views required to build complex reports with ease.
- ***The Reporting Database:*** The P6 Reporting Database portion of the suite consists of the Star database and the Operational Data Store (ODS) database used to extract, transform, and load data from the P6 EPPM database. This data is specifically designed to be used to create reports.
- ***Oracle Universal Content Management:*** This server hosts documents in a shared repository enabling collaborative functionality such as document check-out/check-in and versioning.

# Primavera vs. MS Project

- No. of Activities per Project (100,000 & 400,000)
- No. of EPS Structures (20/ 50 & Nil)
- No. of Baselines ( $\infty$  & 11)
- Publish Project (Yes & Customizable only on Server)
- No. of Columns (200 & 40)
  
- Issues & Risks
- Multi-User Multi-Project
- Roles based Analysis
- TSLD
- Mobile Alerts
- Activity Steps & Expenses
- Multiple Activity Relationships

# The Project Management Lifecycle

## Lesson 2

# The Project Management Lifecycle



- Objectives

- A brief on Project Management history
- An overview of World's Renowned Project Management Standards/ Methodologies (*PRINCE2, ISO 21500, PMBOK*)
- Project & Project Management Defined (*Standard-based*)
- Review relationship between Primavera and the Project Management Lifecycle
- Identify the Process Groups in the Project Management Lifecycle

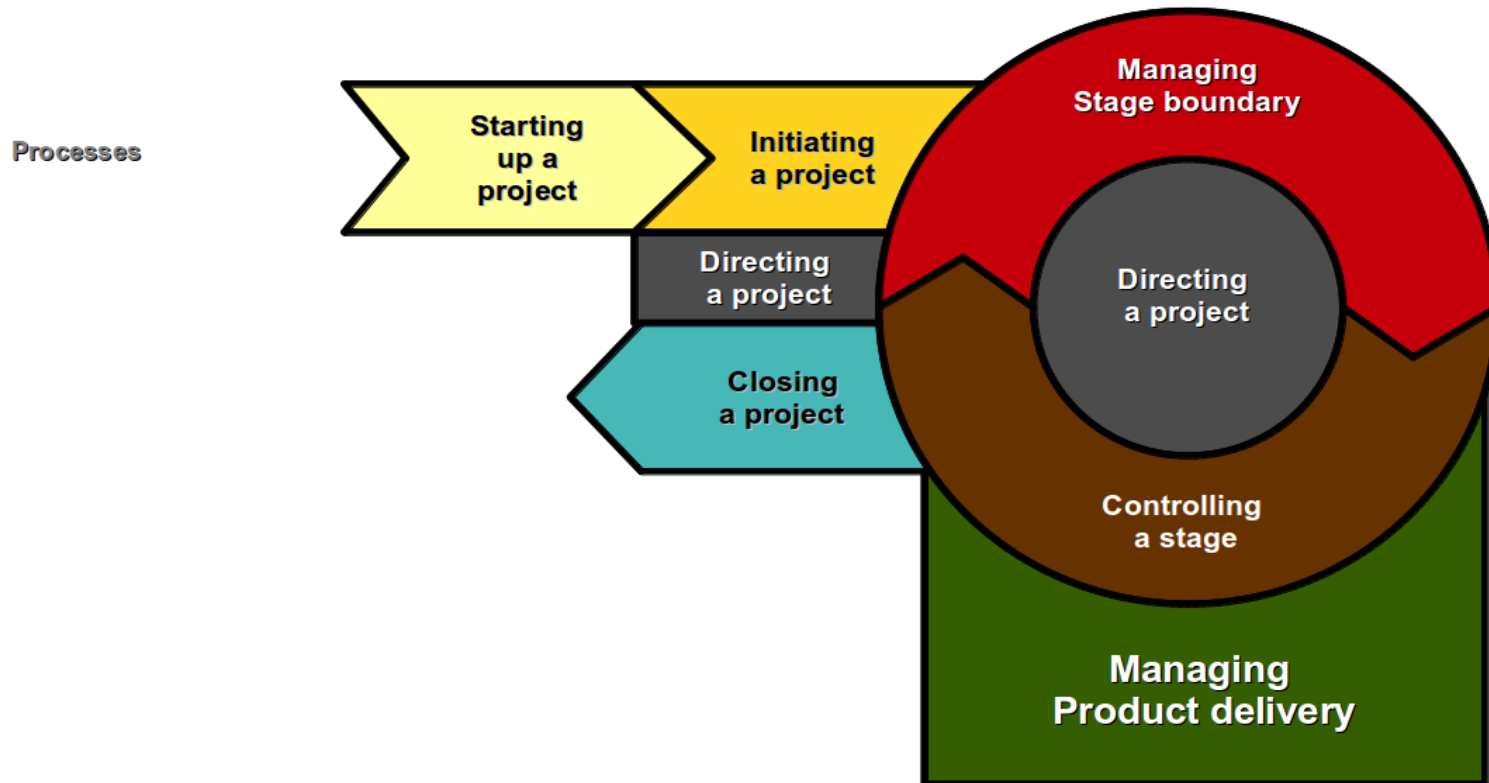
# Talking About Most Recognized *Standards/ Methodologies*

**PRINCE2**

**ISO 21500:2012**

**PMBOK**

# PRINCE2



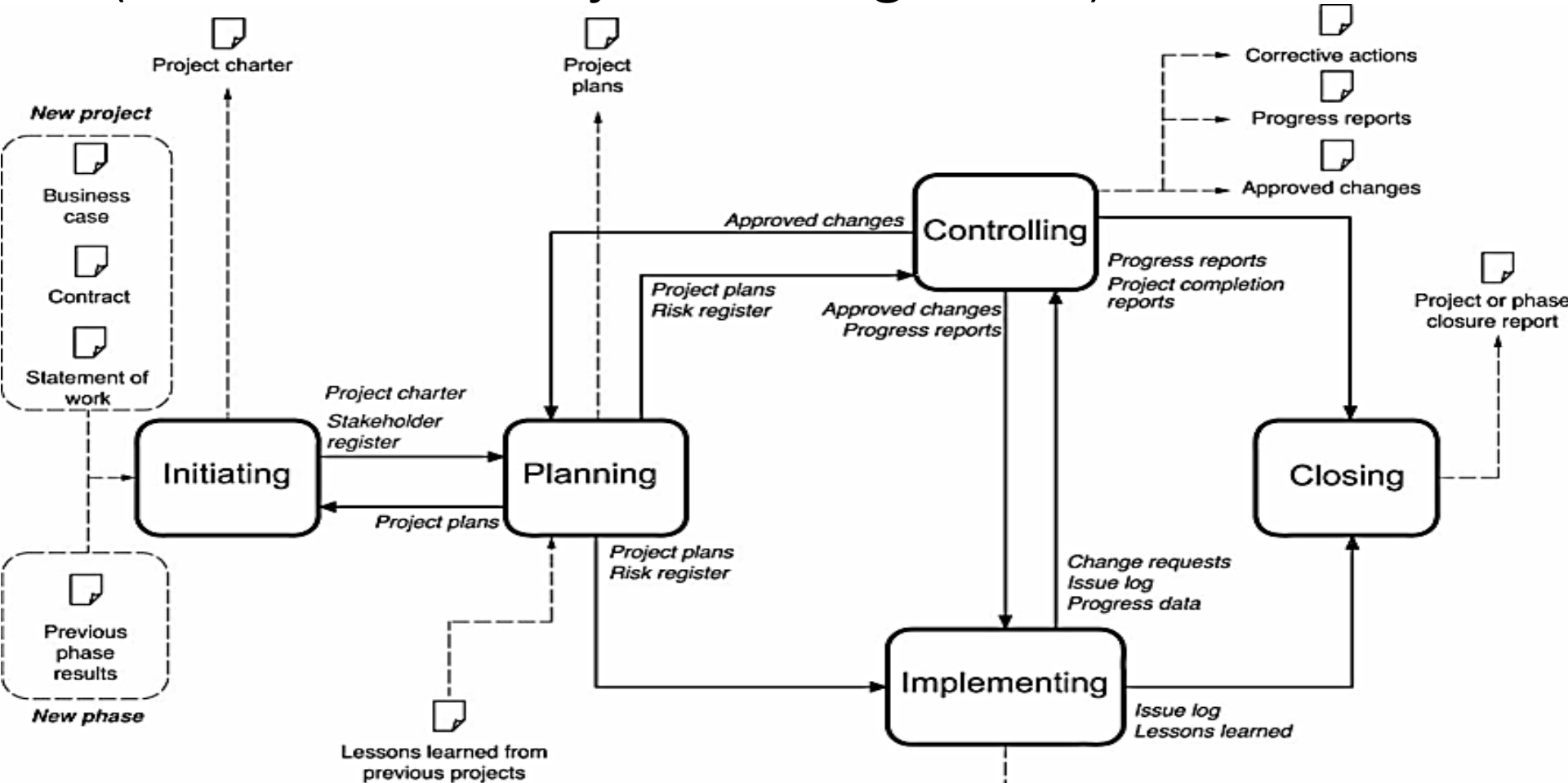
**Themes**

Business Case	Organization	Quality	Plans	Risk	Change	Progress
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**Principles**

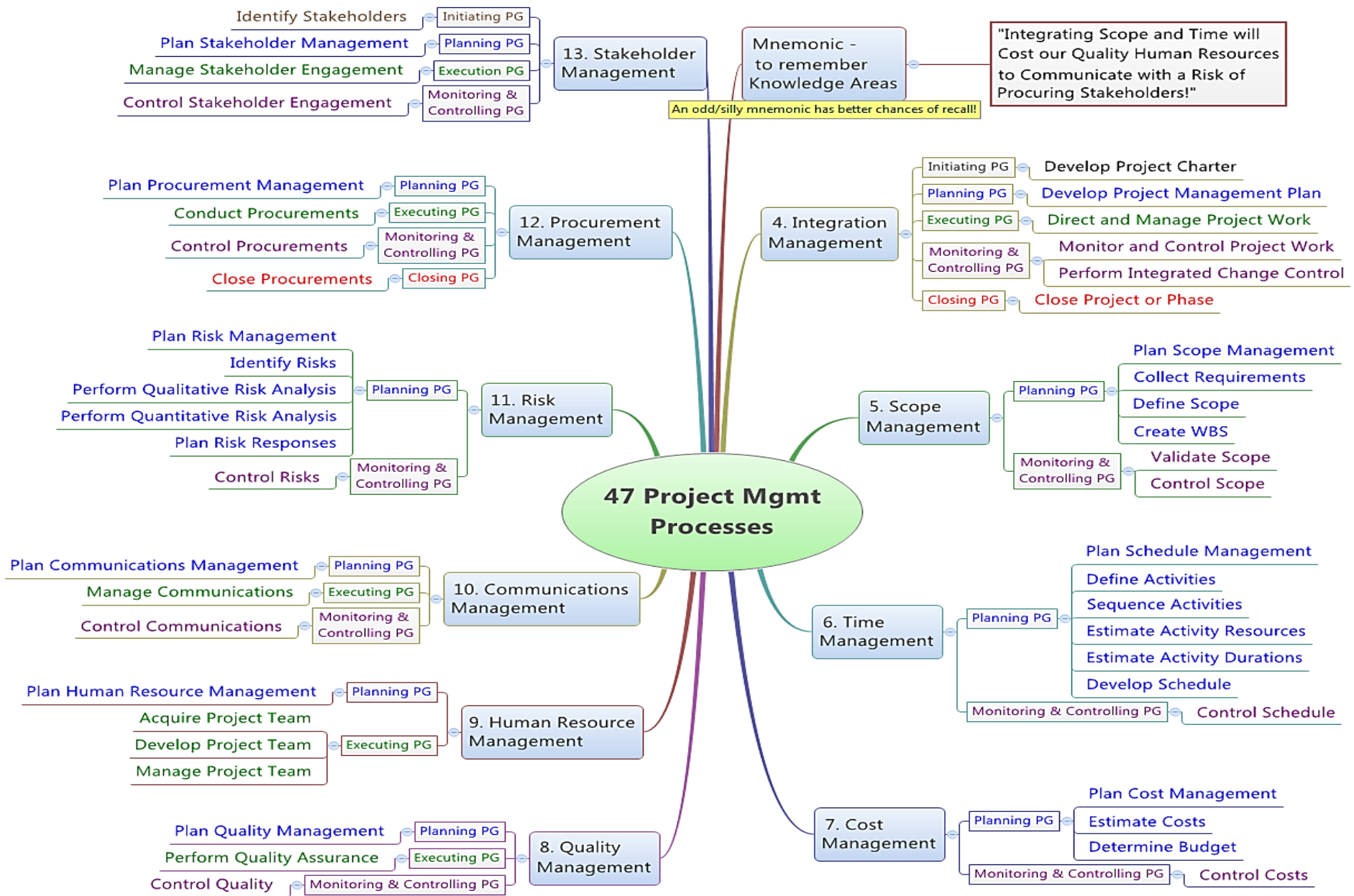
Continued business justification	Learn from experience	Defined roles and responsibilities	Manage by stages	Manage by exception	Focus on products	Tailor to suit the project environment
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# ISO 21500:2012 (Guidance on Project Management)



KEY	
	Key project information
Labels along arrows	Information passing between process groups
Dotted lines	Representative inputs and outputs
Solid lines	Interactions between process groups

# PMBOK







# ISO 21500 vs. PMBOK



Table 1. ISO 21500 and PMBoK® Guide process groups comparison

ISO 21500	PMBoK® Guide
Initiating	Initiating
Planning	Planning
Implementing	Executing
Controlling	Monitoring and Controlling
Closing	Closing

**39 Processes vs. 47 Processes**

ISO 21500 Subjects and PMBoK® Guide Knowledge Areas

ISO 21500 Subjects	PMBoK® Guide Knowledge Areas
Integration	Integration
Stakeholder	Stakeholder
Scope	Scope
Resource	Human Resources
Time	Time
Cost	Cost
Risk	Risk
Quality	Quality
Procurement	Procurement
Communication	Communication



# PRINCE2 vs PMBOK



## PRINCE2 (PROjects IN a Controlled Environment) & PMBOK (PROject Management Body of Knowledge)

PRINCE2	PMBOK
Origin - United Kingdom	Origin - United States
Administered by APMG	Administered by PMI
A process based project management methodology	A knowledge based approach to project management
A series of management processes defining what must be done, when and how it must be done and by whom over the life of a project	Describes core practices and a wider range of techniques that can be applied to manage a project
Prescriptive, but tailorable	Non-prescriptive
Defines the roles of everyone involved in a project	Focuses on the project manager's role



# PRINCE2 vs PMBOK



## PRINCE2

## PMBOK

Practical project management methodology based on 7 principles

Comprehensive information on all aspects of project management

Driven by the business case

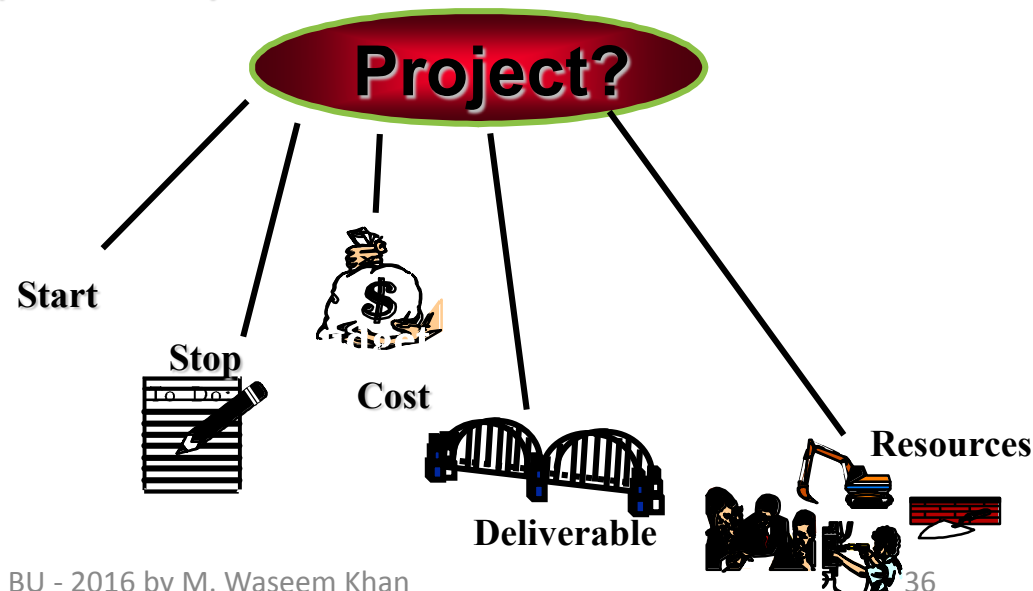
Driven by customer requirements

Business case, product based planning, management by exception, clarity in roles and authorities, project assurance

Procurement, HR management. More depth on techniques such as EVM, Critical Path, estimating, etc.

# The Project

- A project is a temporary organization that is created for the purpose of delivering one or more business products according to an agreed Business Case. (*PRINCE2*)
- A project consists of a unique set of processes consisting of coordinated and controlled activities with start and end dates, performed to achieve project objectives. (*ISO 21500: 2012*)
- Project is a temporary endeavor undertaken to create a unique Product, Service or Result. (*PMBOK*)



# The Project

- It has a defined START and END, therefore the project is TEMPORARY;
- It has a certain volume of “WORK” which needs some form of organization, otherwise it is NOT a endeavor;
- It is NOT business as usual, NOT following normal procedures, because there is something UNIQUE to it;
- It creates an END RESULT, being a PRODUCT, a SERVICE or RESULT.

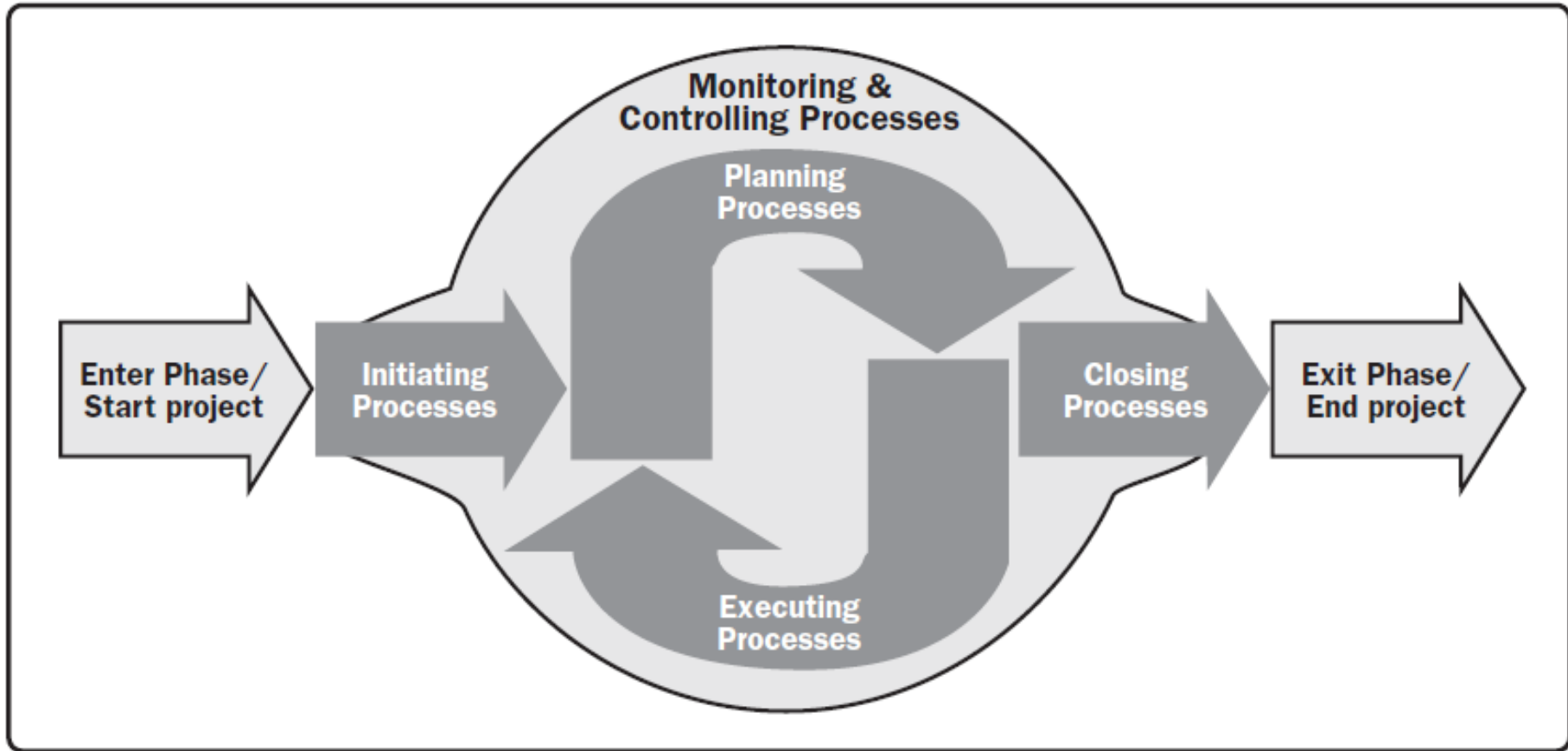


# Project Manager

- The Project Manager is the person assigned by the performing organization to lead the team that is responsible for achieving the project objectives.
- Project managers are **change agents**: they make project goals their own and use their skills and expertise to inspire a sense of shared purpose within the project team.



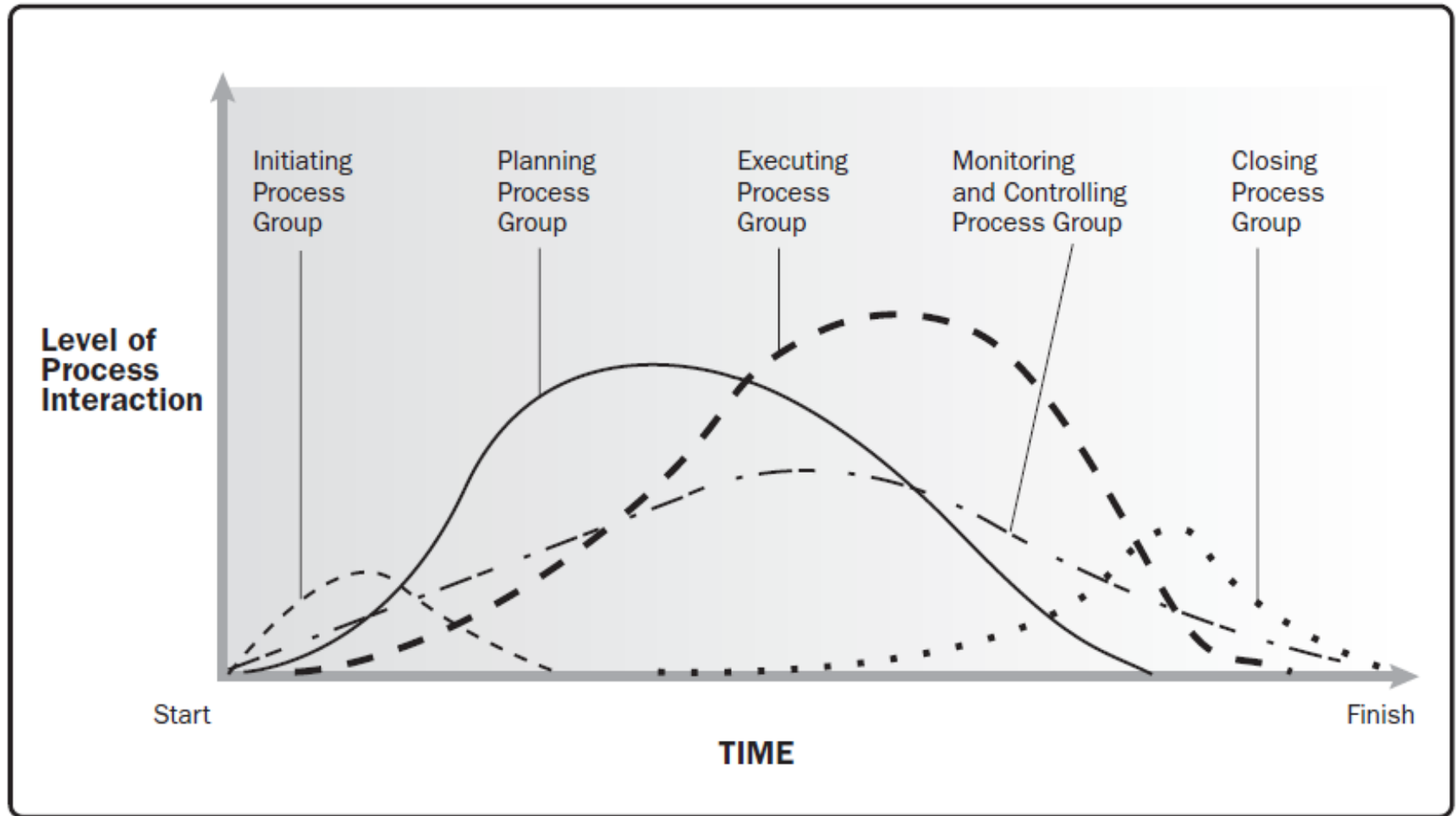
# The Project Management Lifecycle



**Figure :** Project Management Process Groups

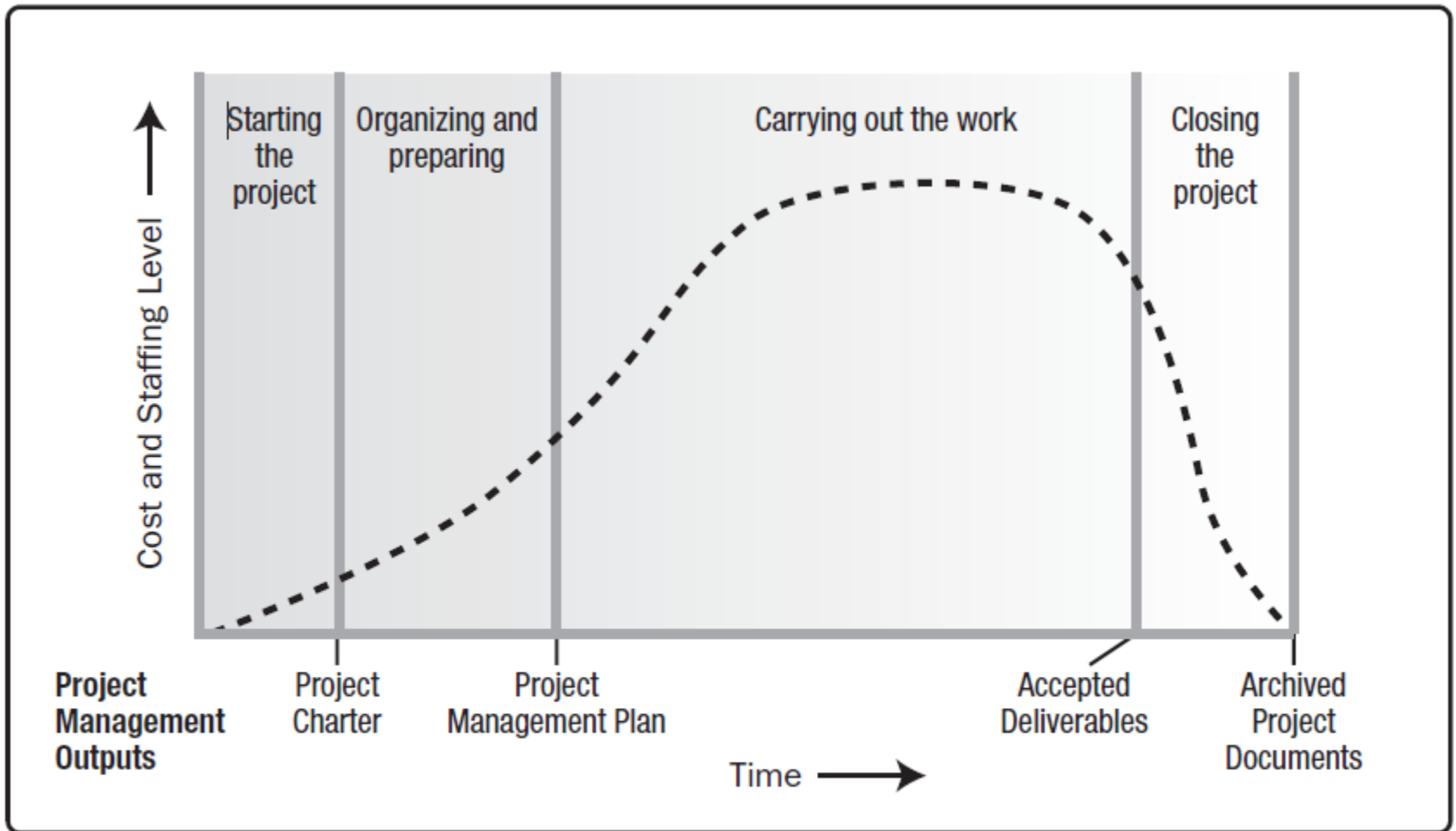


# Process Groups & the Project/ Phase



**Figure: Process Groups Interact in a Phase or Project**

# Project Life-Cycle



**Figure: Typical Cost and Staffing Levels Across a Generic Project Life Cycle Structure**

# Data, Navigation, and Layout

## Lesson 3

# Data, Navigation, and Layout

- Objectives
  - Describe Enterprise and Project Specific Data
  - Log In to Primavera P6
  - Open an Existing Project
  - Navigate in the Home Window and Activities Window
  - Open an Existing Layout
  - Customize a Layout
  - Save a Layout

# Enterprise Data

- *Enterprise Data* provides a global structure needed to manage multiple projects. It is available to all projects across the organization and provides the structure necessary for centralized project and resource management.
- Administrator defines enterprise-specific data to standardize the organizational data.
- Examples of Enterprise Data:
  - Enterprise Project Structure
  - Project Codes
  - Resource Codes
  - Admin Categories and Preferences
  - Resources
  - Cost Accounts

# Project Specific Data

- *Project Specific Data* is only available to the project in which it is defined.
- Project Manager defines project specific data to further control his/her project.
- Examples of Project Data:
  - Dates
  - Work Breakdown Structure
  - Activities
  - Relationships
  - Baselines
  - Expenses
  - Risks
  - Thresholds and Issues
  - Work Products and Documents
  - Project Website

# Enterprise/ Project Specific Data

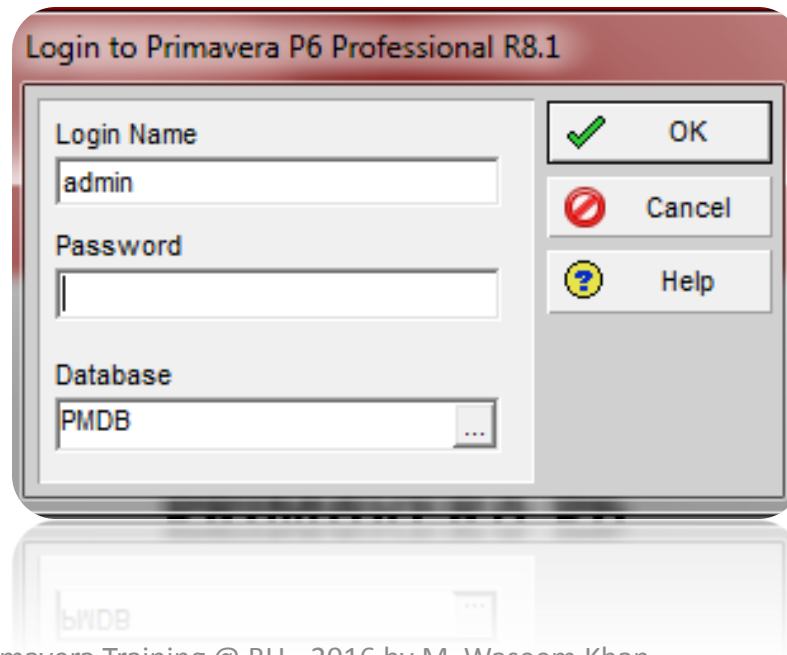
- *Enterprise/ Project Specific Data* is available to both enterprise and project data.
- Examples of Enterprise/ Project Specific Data:
  - Calendars
  - Reports
  - Activity Codes

# Logging In

- Exercise:

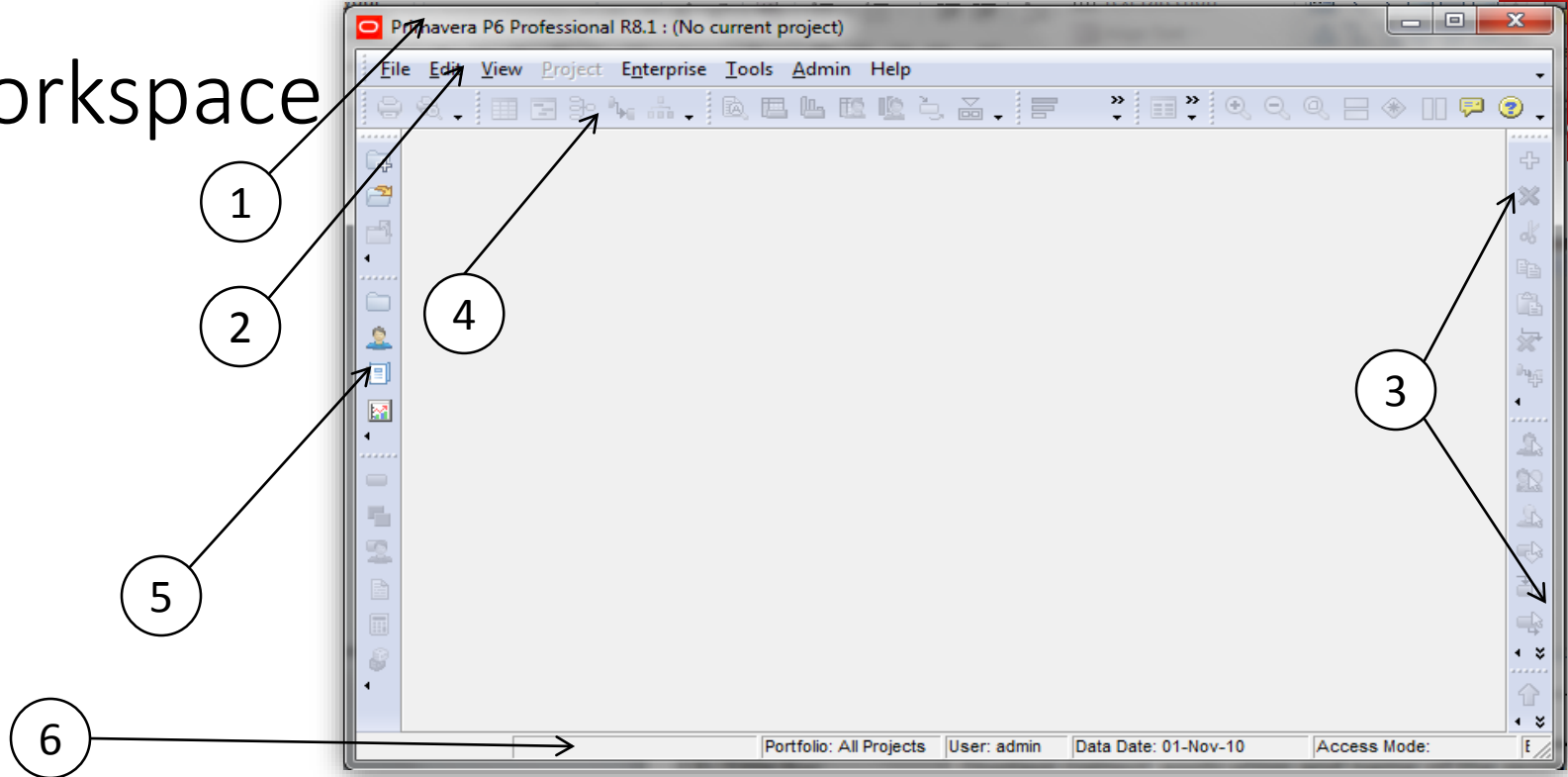
- Steps

- Click Start, Programs, Oracle – Primavera P6, P6 Professional R15.1
    - Type a Login Name “admin”
    - Type your password “admin123”







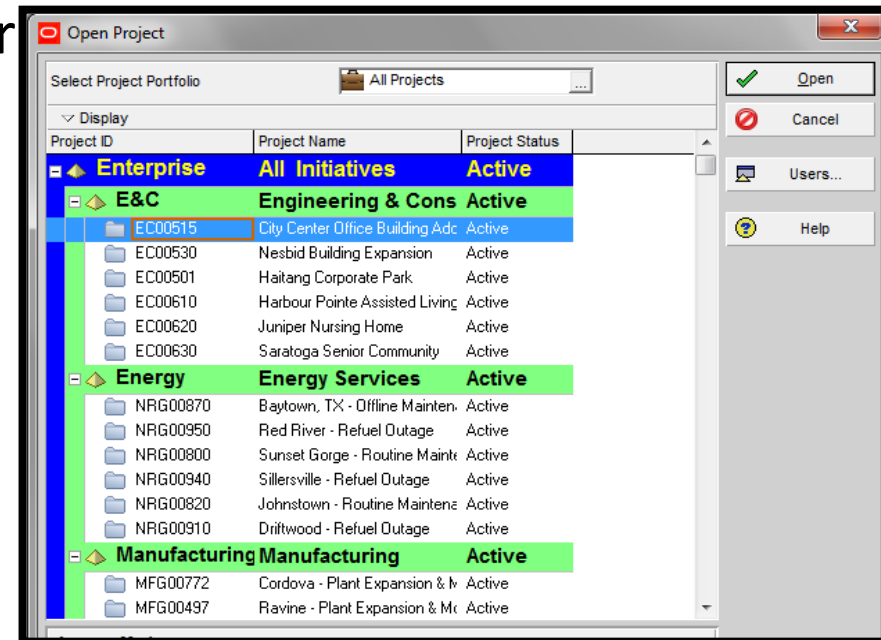
# Workspace



Item	Functionality
1. Title Bar	Displays current application and name of the project
2. Menu Bar	Perform functions in Primavera
3. Command Bar	Actions that are performed in an open window (Add, Delete etc.)
4. Tool Bar	Displays icons that allow you to change the look and feel of the layout
5. Directory Bar	Quickly displays Primavera window (Activities, Project, Resources etc.)
6. Status Bar	Login Name, Data Date of open project, Access Mode, and Current Baseline

# Opening An Existing Project

- The *Open Project* dialog box lists all the projects you have access to open
  - Open a single project indicated by 
  - Open a single node indicated by 
    - All projects under the node are opened.
  - Open multiple projects under different nodes
    - Press Click+Ctrl to open more than one project.
- Exercise
  - Steps
    - In the File menu Click “Open”



# Activities Window

- *Activities Window* is used to create, view, and edit activities for open project.

The screenshot displays the Primavera P6 Professional R8.1 interface. The main window is titled 'Activities' and shows a Gantt chart for the project 'City Center Office Building Addition'. The chart spans from November 2010 to June 2011. A table on the left lists activities with their IDs, names, original durations, and remaining durations. The activity 'EC1170 Prepare and Solicit Bids for Flooring' is highlighted in blue. Below the Gantt chart, the 'Activity Details' pane is open for EC1170, showing fields for Activity Type, Duration Type, % Complete Type, Activity Calendar, WBS, Responsible Manager, and Primary Resource.

Activity ID	Activity Name	Original Duration	Remaining Duration
EC1000	Design Building Addition	55	0
EC1010	Start Office Building Addition Project	0	0
EC1030	Review and Approve Designs	22	0
EC1050	Assemble Technical Data for Heat Pump	7	0
EC1040	Assemble Brick Samples	0	0
EC1100	Site Preparation	43	0
EC1160	Review Technical Data on Heat Pumps	27	0
EC1060	Assemble and Submit Flooring Samples	0	0
EC1080	Review and Approve Flooring	28	0
EC1070	Review and Approve Brick Samples	30	0
EC1090	Begin Building Construction	0	0
EC1180	Prepare and Solicit Bids for Brick Exterior	15	0
EC1170	Prepare and Solicit Bids for Flooring	24	5
EC1220	Review Bids for Brick	15	0
EC1190	Prepare and Solicit Bids for Heat Pump	15	2
EC1260	Award Contract for Brick	5	4
EC1230	Excavation	24	24
EC1240	Review Bids for Heat Pump	10	10
EC1280	Deliver Brick	1	1

5

2

6

7

1

4

3

8

# Activities Window

Item	Functionality
1. Tool Bar	Displays icons that allow you to change the look and feel of the layout
2. Activity Table	Displays activity information in spreadsheet format
3. Gantt Chart	Provides graphical view of the activity progress over the period of time
4. Command Bar	Displays options for adding or removing activity data
5. Layout Option Bar	Displays menu of available options for activity window
6. Vertical Split Bar	Drag this bar to hide/ show information in each pane
7. Horizontal Split Bar	Hide/ show more information in bottom pane
8. Activity Details	View/ edit detail information for selected activity

- Exercise
  - Steps
    - Confirm you are in Activity Window (By clicking on activity button)

# Layouts

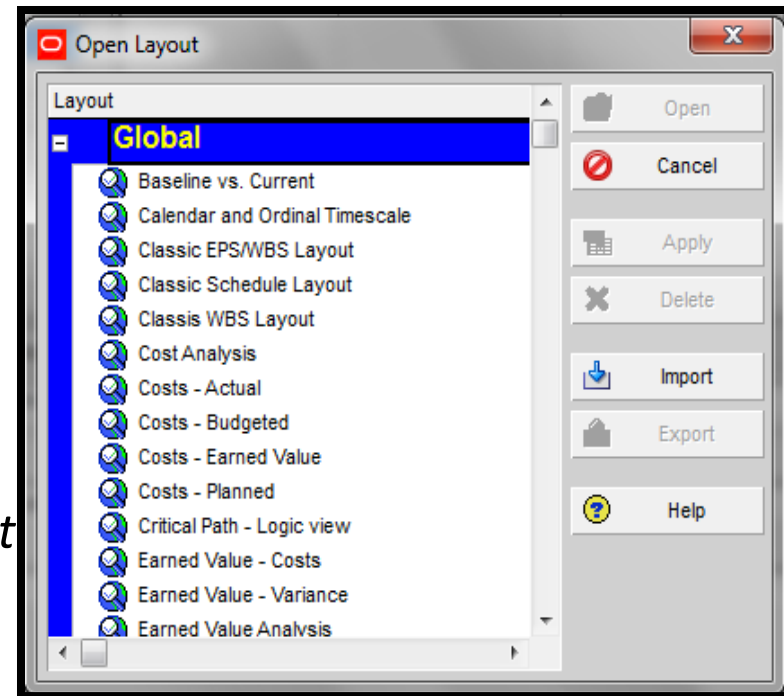
- *Layout* is a customizable view of information. It is a combination of all the visual elements that appear on screen. Layouts are available in Projects, WBS, Activities, Resource Assignments, and Tracking Windows.

# Activity Layout

- The activity window provides options in viewing data in top/ bottom layouts
  - Choose one of the following to show on top:
    - Activity Table
    - Gantt Chart
    - Activity Usage Spreadsheet
    - Activity Network
  - Choose one of the following to show on bottom:
    - Activity Details
    - Activity Table
    - Gantt Chart
    - Activity Usage Spreadsheet
    - Activity Usage Profile
    - Resource Usage Profile
    - Trace Logic

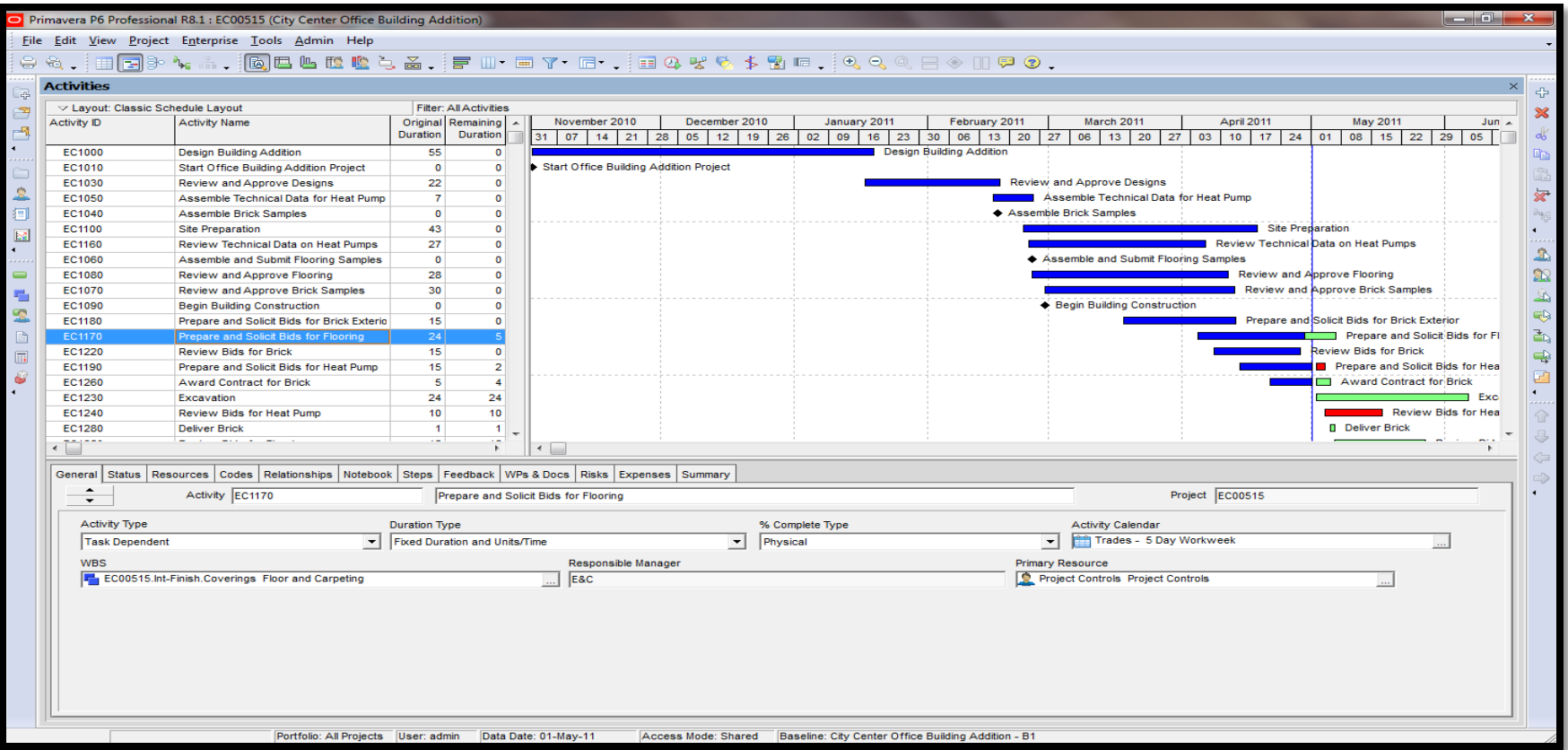
# Opening An Existing Layout

- A variety of layouts are available to present activity data from different perspectives. You can create user specific layouts and project specific layouts, or use global layouts provided by your company.
- After selecting a layout, you can click either “Apply” or “Open”
  - *Apply* – Displays layout but keeps open layout dialog box open
  - *Open* – Displays layout and closes open layout dialog box
- Exercise
  - *Steps*
    - *In the Layout Option Bar, click Layout, Open*
    - *When prompted to save changes to the layout, click No*
    - *Select a layout, Analyzing the Budget*
    - *Click Apply*
    - *Select a layout, Classic WBS Layout*
    - *Click Open*



# Gantt Chart

- **Gantt Chart** is divided into two sections:
  - **Activity Table** – Displays activity data in columns
  - **Bar Area** – Provides a graphical display of activity progress over the duration of the project





# Activity Usage Spreadsheet

- The *Activity Usage Spreadsheet* displays units, cost, or earned value data by activity overtime. Use this type of layout to review per period and rolled-up activity resource/ cost.
- You can customize the timescale of Activity Usage Spreadsheet:
  - Move the timescale to focus on a specific time period – Point in timescale until cursor displays and then slide cursor left or right.
  - Expand the timescale to widen/ narrow width of columns – Point in minor date interval until the cursor displays and then slide cursor left or right.

# Activity Usage Spreadsheet



- Exercise
  - Steps

- Layout Option Bar, click Show on Top, Activity Usage Spreadsheet
- In the Layout Option Bar, click Show on Bottom, No Bottom Layout
- Expand the timescale
- Move the timescale to display August 2011

Primavera P6 Professional R8.1 : EC00515 (City Center Office Building Addition)

File Edit View Project Enterprise Tools Admin Help

Activities

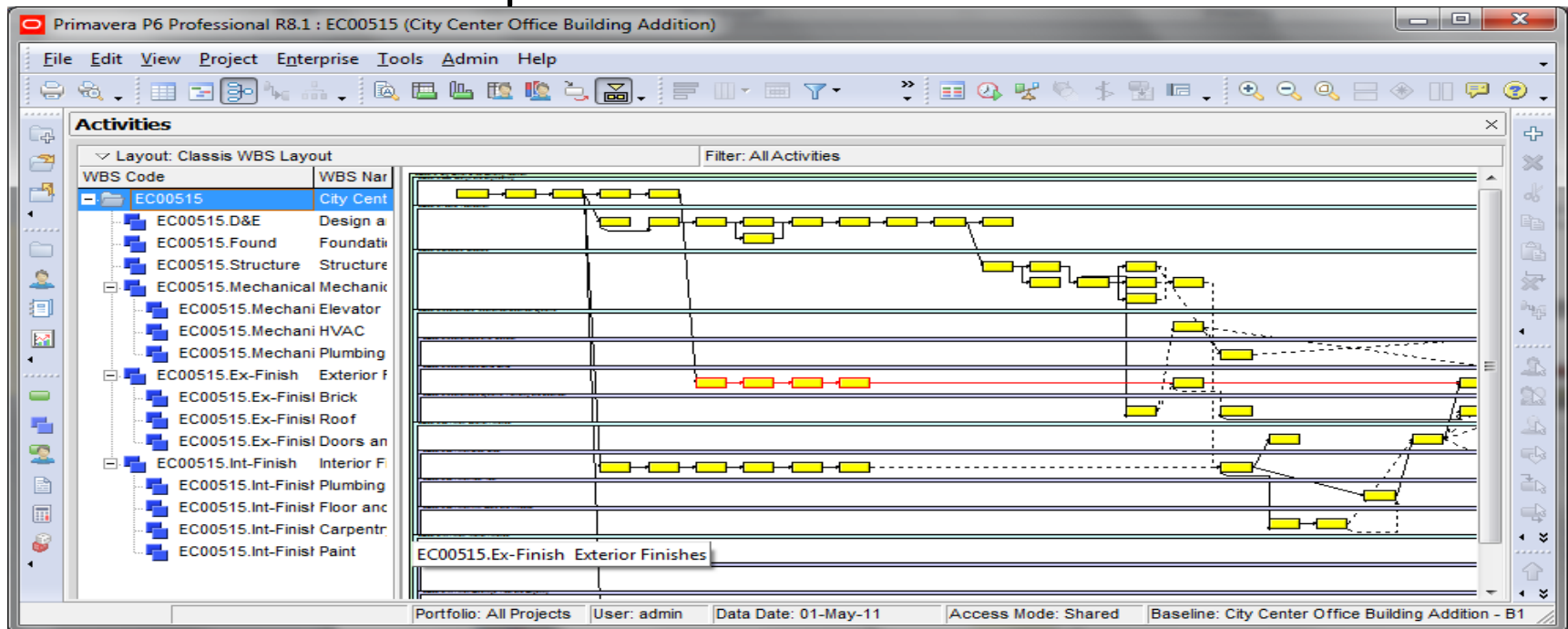
Layout: Classis WBS Layout Filter: All Activities

Activity ID	Activity Name	Start	Finish	Remaining Labor Units	Qtr 2, 2011			Qtr 3, 2011			Qtr 4, 2011			
					Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
City Center Office Building Addition							658	1174	1328	1535	1152	672	718	840
Design and Engineering														
EC100	Design Building Addition	01-Nov-10 A	19-Jan-11 A											
EC101	Start Office Building Addition Project	01-Nov-10 A												
EC103	Review and Approve Designs	17-Jan-11 A	17-Feb-11 A											
EC105	Assemble Technical Data for Heat F	16-Feb-11 A	25-Feb-11 A											
EC116	Review Technical Data on Heat Pui	24-Feb-11 A	06-Apr-11 A											
Foundation							335	814	1008	1167	670			
EC109	Begin Building Construction	28-Feb-11 A												
EC110	Site Preparation	23-Feb-11 A	18-Apr-11 A											
EC123	Excavation	02-May-11	06-Jun-11				335	49						
EC132	Install Underground Water Lines	03-Jun-11	21-Jun-11					192						
EC133	Install Underground Electric Conduit	03-Jun-11	21-Jun-11					192						
EC134	Form/Pour Concrete Footings	21-Jun-11	26-Jul-11					381	771					
EC135	Concrete Foundation Walls	25-Jul-11	26-Aug-11						237	915				
EC136	Form and Pour Slab	26-Aug-11	14-Sep-11							252	516			
EC137	Backfill and Compact Walls	13-Sep-11	19-Sep-11								154			
EC138	Foundation Phase Complete		19-Sep-11											

Portfolio: All Projects User: admin Data Date: 01-May-11 Access Mode: Shared Baseline: City Center Office Building Addition - B1

# Activity Network

- Use the *Activity Network* to view the relationships between activities and the logical flow of the activities in the project:
  - *Left Pane* – Displays the WBS hierarchy
  - *Right Pane* – Shows a graphical display of activities and their relationships



# Activity Network



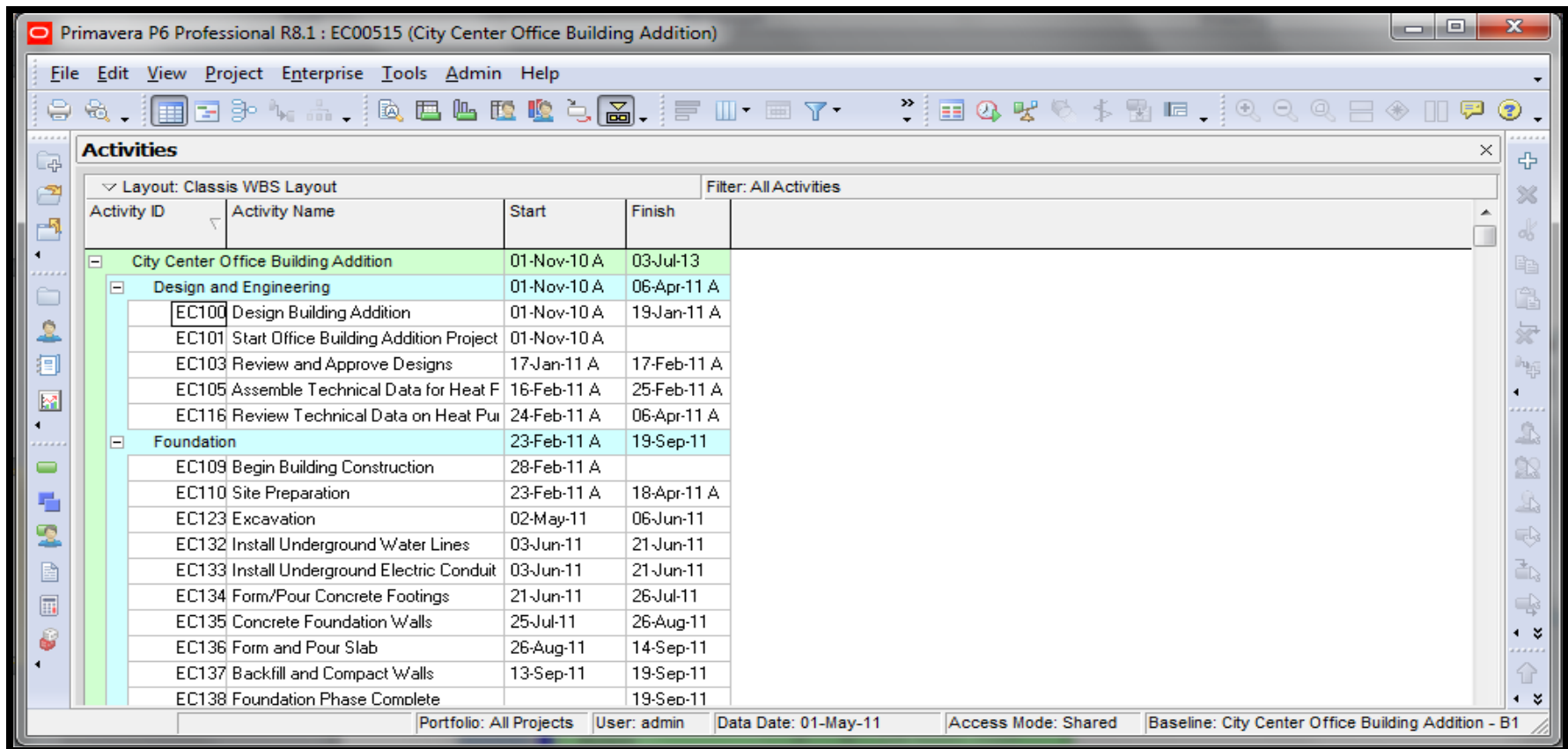
- Exercise
  - Steps
    - In the Layout Option Bar, click Show on Top, Activity Network
    - In the Toolbar, click (magnifier) zoom several times to get a close look at activities

# Activity Table

- The *Activity Table* enables you to see project data in the spreadsheet format. You also can modify the columns displayed in the Activity Table to meet your needs.
- You can display activity Table on the entire screen if you want to analyze data in tabular format.

# Activity Table

- Exercise
  - Steps
    - In the Layout Option Bar, click Show on Top, Activity Table



Primavera P6 Professional R8.1 : EC00515 (City Center Office Building Addition)

File Edit View Project Enterprise Tools Admin Help

**Activities**

Layout: Classis WBS Layout Filter: All Activities

Activity ID	Activity Name	Start	Finish
City Center Office Building Addition		01-Nov-10 A	03-Jul-13
Design and Engineering		01-Nov-10 A	06-Apr-11 A
EC100	Design Building Addition	01-Nov-10 A	19-Jan-11 A
EC101	Start Office Building Addition Project	01-Nov-10 A	
EC103	Review and Approve Designs	17-Jan-11 A	17-Feb-11 A
EC105	Assemble Technical Data for Heat F	16-Feb-11 A	25-Feb-11 A
EC116	Review Technical Data on Heat Pur	24-Feb-11 A	06-Apr-11 A
Foundation		23-Feb-11 A	19-Sep-11
EC109	Begin Building Construction	28-Feb-11 A	
EC110	Site Preparation	23-Feb-11 A	18-Apr-11 A
EC123	Excavation	02-May-11	06-Jun-11
EC132	Install Underground Water Lines	03-Jun-11	21-Jun-11
EC133	Install Underground Electric Conduit	03-Jun-11	21-Jun-11
EC134	Form/Pour Concrete Footings	21-Jun-11	26-Jul-11
EC135	Concrete Foundation Walls	25-Jul-11	26-Aug-11
EC136	Form and Pour Slab	26-Aug-11	14-Sep-11
EC137	Backfill and Compact Walls	13-Sep-11	19-Sep-11
EC138	Foundation Phase Complete		19-Sep-11

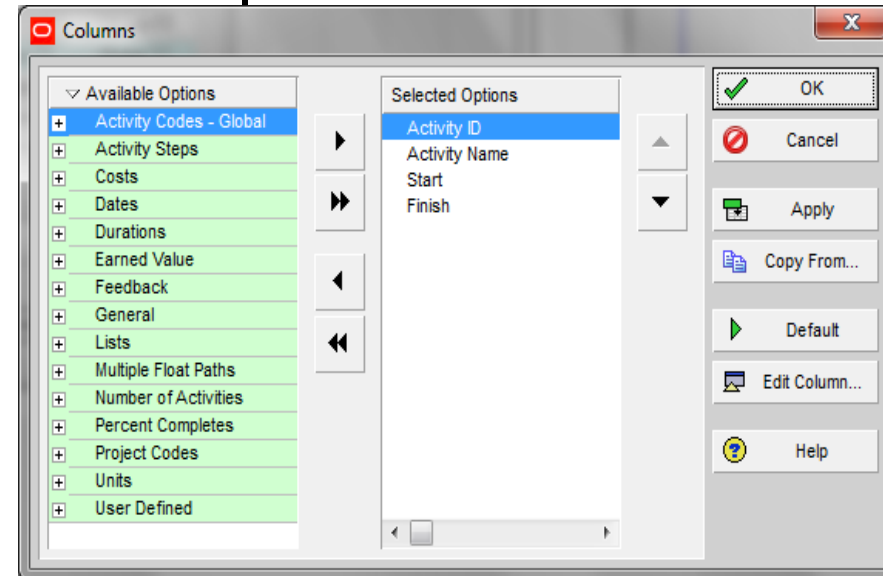
Portfolio: All Projects User: admin Data Date: 01-May-11 Access Mode: Shared Baseline: City Center Office Building Addition - B1

# Customizing a Layout

- The *Activities Window* can be customized and saved as a layout. Saving layouts for future use allows you to quickly retrieve information.
  - The Layout option bar is the centralized menu for layout customization
  - Following is the list of Layout elements that are customizable:
    - Bars
    - Columns
    - Timescales
    - Table Font and Colors
    - Row Height
    - Filters
    - Activity Grouping and Sorting
    - Top/ Bottom Layouts

# Selecting Columns

- The *Column* dialog box enables you to select columns to display in the Activity Table and specifies the order in which they appear:
  - *Available Options* –
    - This section lists data items in groups or in list
  - *Selected Options* –
    - This section lists items you have chosen to display
  - *Single Arrow* –
    - Moves highlighted data items to the other section
  - *Double Arrows* – Move all data items to the other section
  - *Up/ Down Arrows* – Configure the order of the data items
- Click *Edit Column* to edit the selected item's title and choose its alignment in the display.



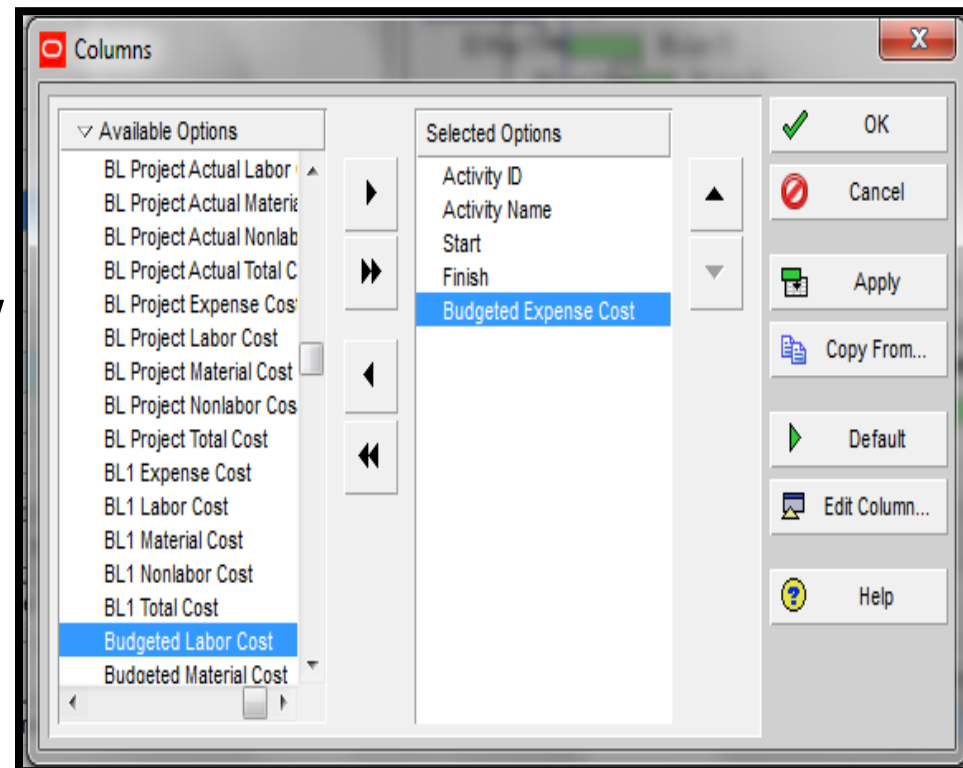


# Selecting Columns


- Exercise

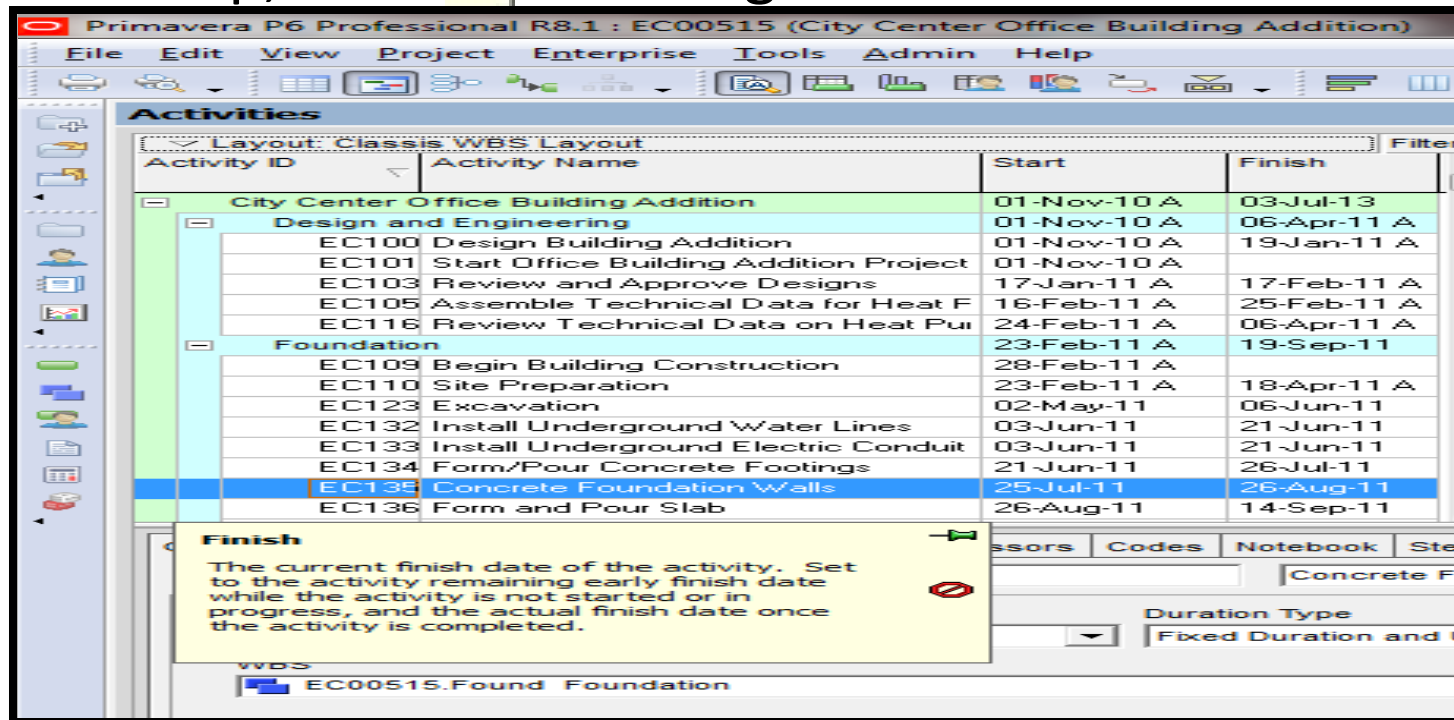
- Steps

- In the Layout Option bar, click Columns
    - In the Available Option Bar, click Group & Sort By, List
    - Select a data item to display in the Activity Table; Budgeted Labor Cost
    - Click > to move the selected data item into the Selected Options
    - Use the Navigation Arrow to configure the order of the data item
    - Click Apply



# Using Hint Help

- Use *Hint Help* to view a definition for any data item
- To move Hint Help, click  and drag to the desired location



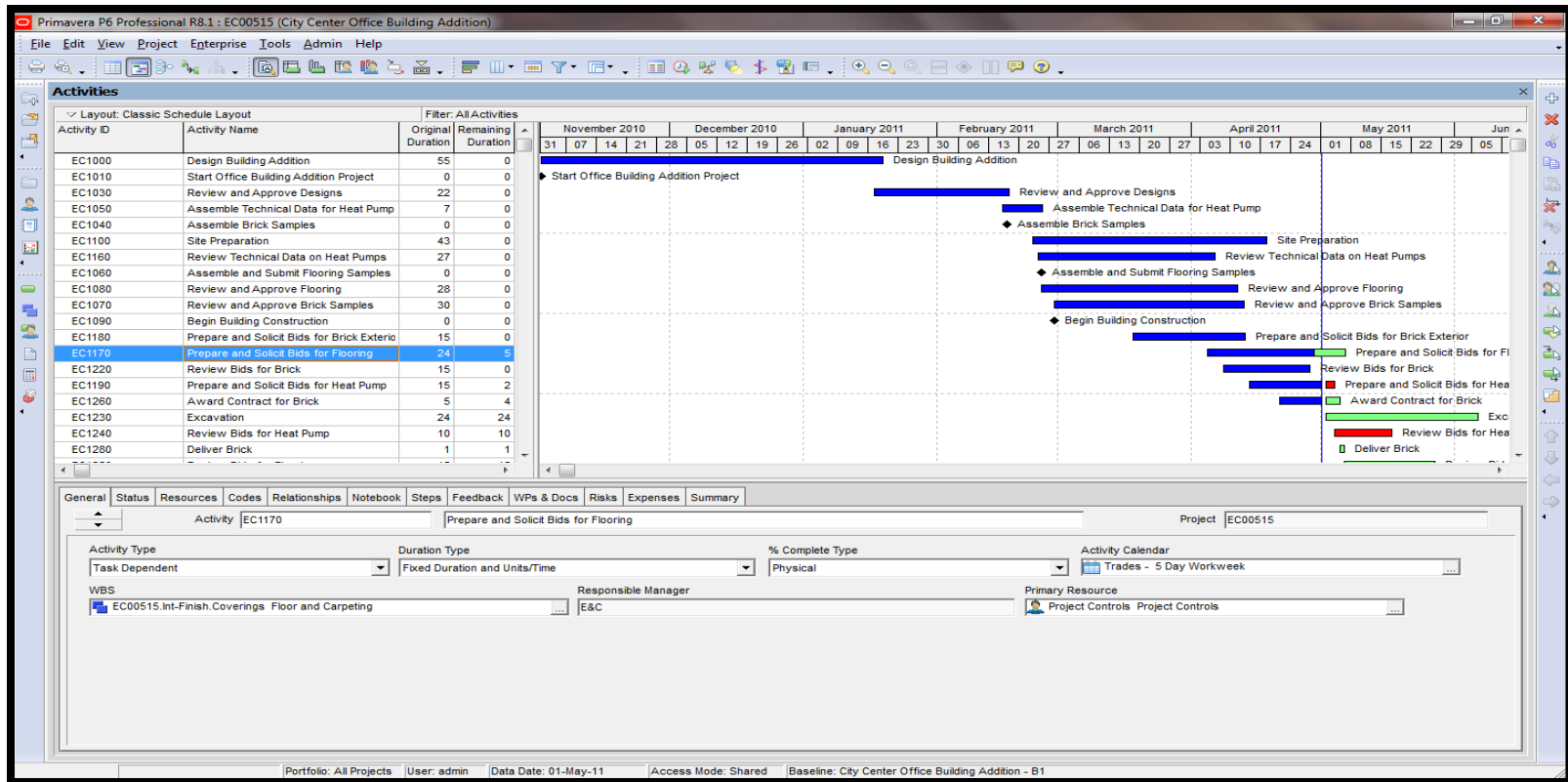
Activity ID	Activity Name	Start	Finish
<b>City Center Office Building Addition</b>			
<b>Design and Engineering</b>			
EC100	Design Building Addition	01-Nov-10 A	06-Apr-11 A
EC101	Start Office Building Addition Project	01-Nov-10 A	19-Jan-11 A
EC103	Review and Approve Designs	17-Jan-11 A	17-Feb-11 A
EC105	Assemble Technical Data for Heat F	16-Feb-11 A	25-Feb-11 A
EC116	Review Technical Data on Heat Pui	24-Feb-11 A	06-Apr-11 A
<b>Foundation</b>			
EC109	Begin Building Construction	28-Feb-11 A	
EC110	Site Preparation	23-Feb-11 A	18-Apr-11 A
EC123	Excavation	02-May-11	06-Jun-11
EC132	Install Underground Water Lines	03-Jun-11	21-Jun-11
EC133	Install Underground Electric Conduit	03-Jun-11	21-Jun-11
EC134	Form/Pour Concrete Footings	21-Jun-11	26-Jul-11
EC135	Concrete Foundation Walls	25-Jul-11	26-Aug-11
EC136	Form and Pour Slab	26-Aug-11	14-Sep-11

- Exercise
  - Steps

- In the Available Option bar, click Hint Help
- Click a column heading, Budgeted Labor Cost
- In the Available Option bar, click Hint Help to disable the onscreen help dialog box
- Click Ok

# Displaying Activity Details

- *Activity Details* displays detailed information for the activity highlighted in the Activity Table or Activity Network.



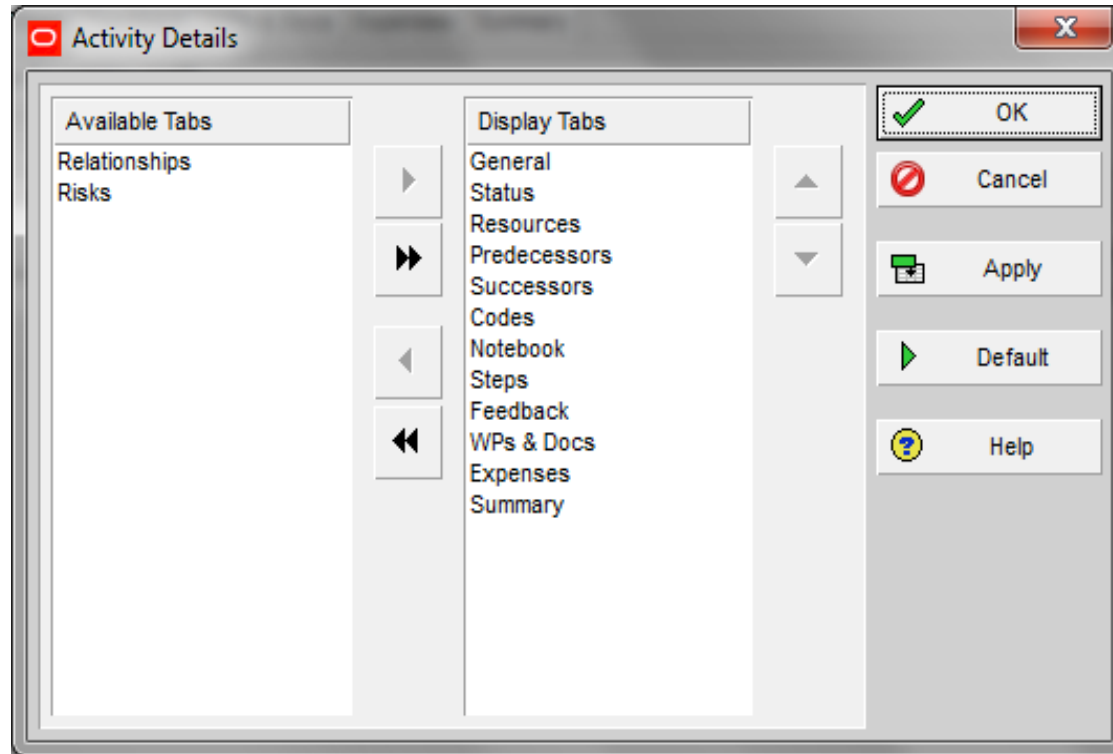
The screenshot displays the Primavera P6 Professional interface. The main window shows a Gantt chart for the project 'City Center Office Building Addition'. The activity 'Prepare and Solicit Bids for Flooring' (EC1170) is highlighted in blue. The 'Activity Details' window is open at the bottom, showing the following information:

Activity Type	Duration Type	% Complete Type	Activity Calendar
Task Dependent	Fixed Duration and Units/Time	Physical	Trades - 5 Day Workweek
WBS	Responsible Manager	Primary Resource	
EC00515.Int-Finish.Coverings Floor and Carpeting	E&C	Project Controls Project Controls	

- Exercise
  - Steps
    - In the Layout Options bar, click Show on Bottom, Activity Details

# Selecting Details Tab

- The tab displayed in the Activity Details can be customized.



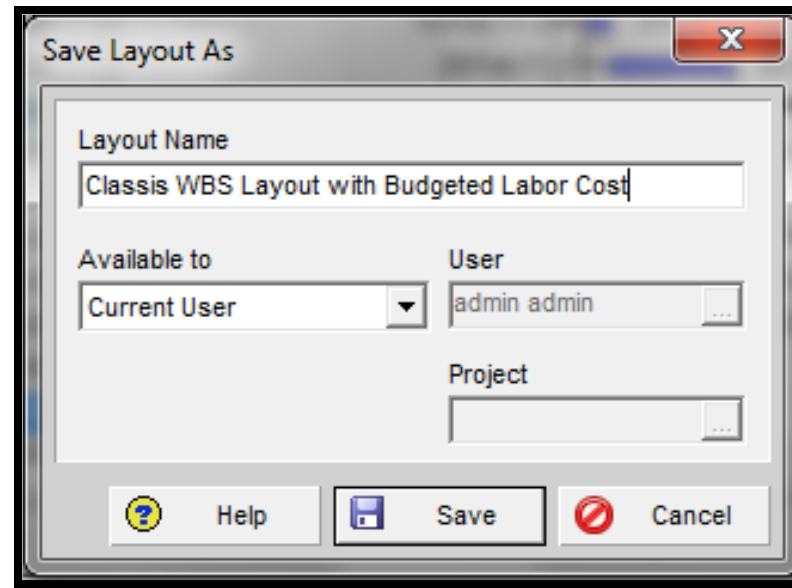
- Exercise
  - Steps

- In the Layout Option bar, click Bottom Layout Options
- In the Available Tabs column, select Relationships
- Click > to move the selected data item in Display Tabs column
- Click Ok.

# Saving Layout

- Layouts can be saved and shared with other users to facilitate project communication. Use the Save Layout dialog box to save a layout in the Activities, WBS, Projects, Assignments, or Tracking Windows:
  - *Layout Save* – Saves changes to the existing layout
  - *Layout Save As* – Prompts you to save the layout with a new name
    - *Current Users* – Only the user creating the layout will have access to it in the future
    - *Project* – Apply the layout to any project that is currently open in Primavera. Though project-specific layouts can be applied to multiple projects, you can only select one project at a time in the Layout Save As dialog box. After a project-specific layout is saved it can be viewed in the Project band in the Open Layout dialog box. Project-specific layout offers two advantages:
      - Exported with the project when it is exported
      - Enhanced organization of multiuser layout

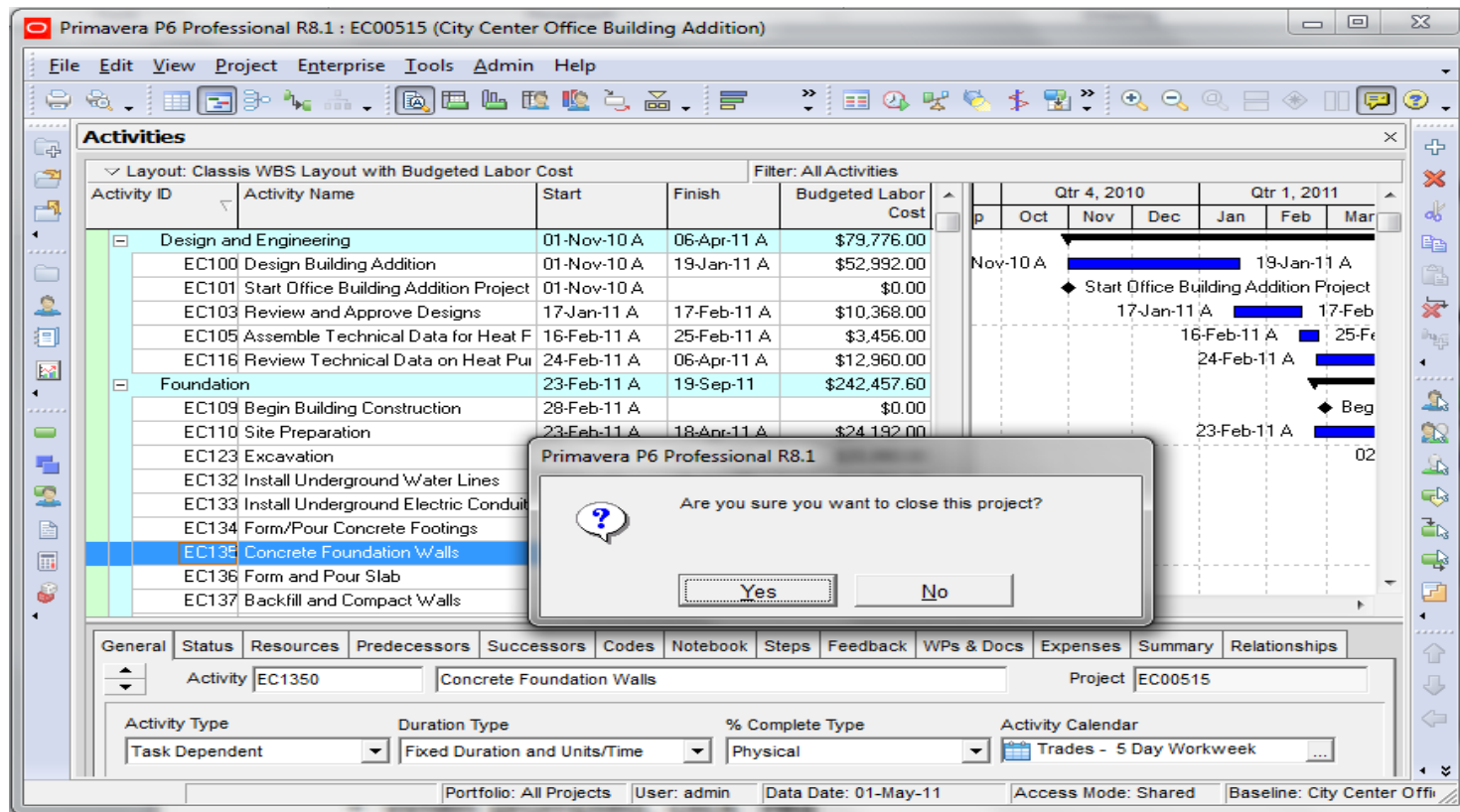
# Saving Layout



- Exercise
  - Steps
    - In the Layout Option bar, click Layout, Save As
    - Type a Layout name <Classic WBS with Budgeted Labor Cost>
    - Verify Current User is selected in the Available To field
    - Click Save

# Closing a Project

- *Close the project* when you have finished working with it. You are prompted to verify for that.
- Closing the project takes you back to the Home window.



- Exercise
  - Steps

- In the File menu, click Close All
- When prompted, click Yes

# Enterprise Project Structure/ Organization Breakdown Structure

## Lesson 4



# EPS/OBS



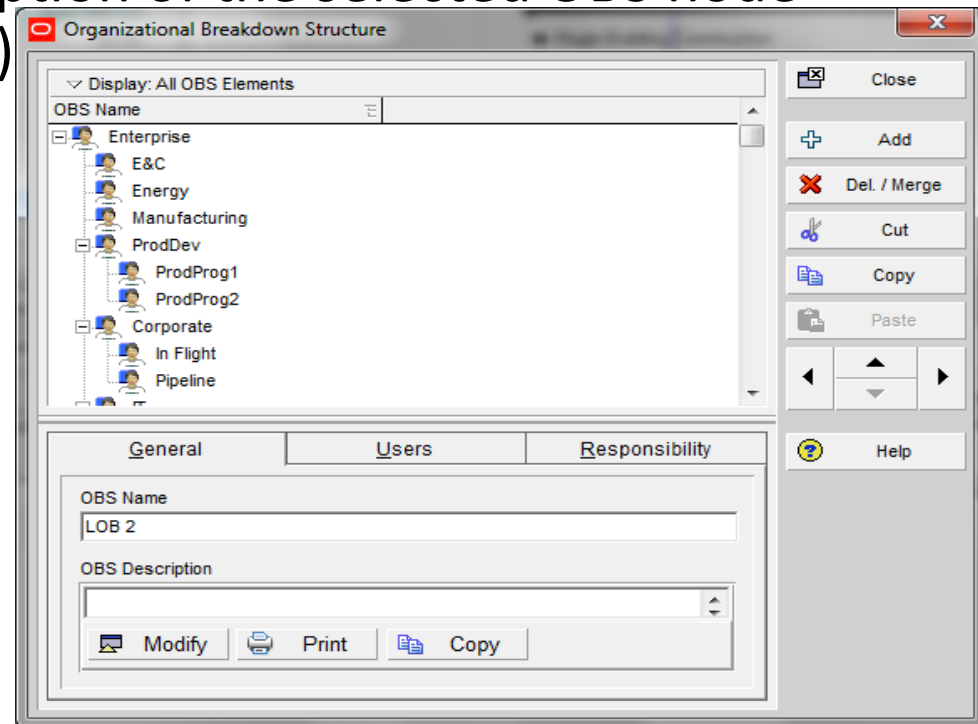
- Objectives
  - Describe the components that comprise the Enterprise Project Structure (EPS)
  - Describe the components that comprise the Organization Breakdown Structure (OBS)
  - View the EPS and OBS

# Organization Breakdown Structure

- The *Organization Breakdown Structure (OBS)* is a hierarchy used to organize responsibilities.
  - The OBS is made of roots and nodes
    - Each root in the OBS can be sub-divided into many nodes
    - Nodes represent different levels within the structure
      - E.g., nodes can represent subordinates within your company, departments, project groups, and site locations
  - All responsible persons must be included in a node
    - Each node can contain an unlimited no. of responsible persons

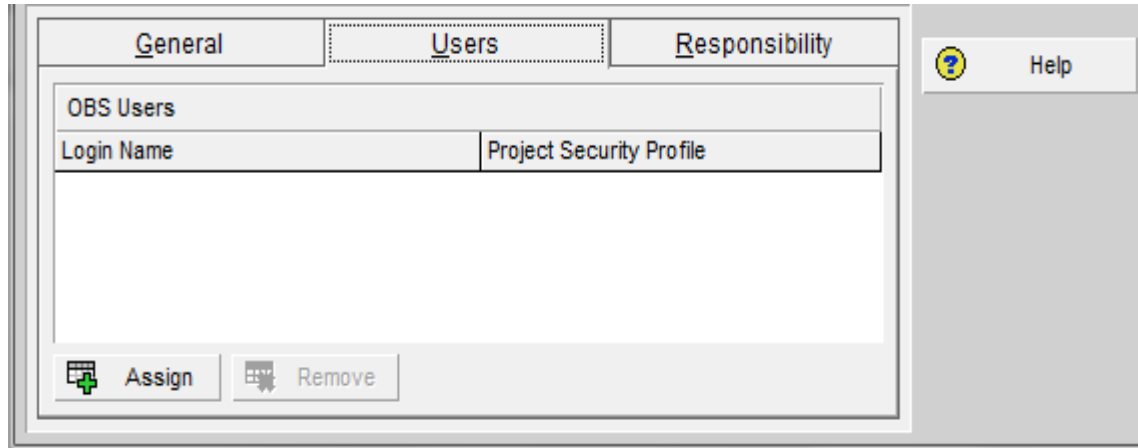
# Opening OBS

- You can use **OBS** dialog box to define the hierarchy.
- The two fields (General Tab) to enter when adding an OBS node are:
  - **OBS Name** – Name of the selected OBS node
  - **OBS Description** – Description of the selected OBS node (Details of job, Level etc.)

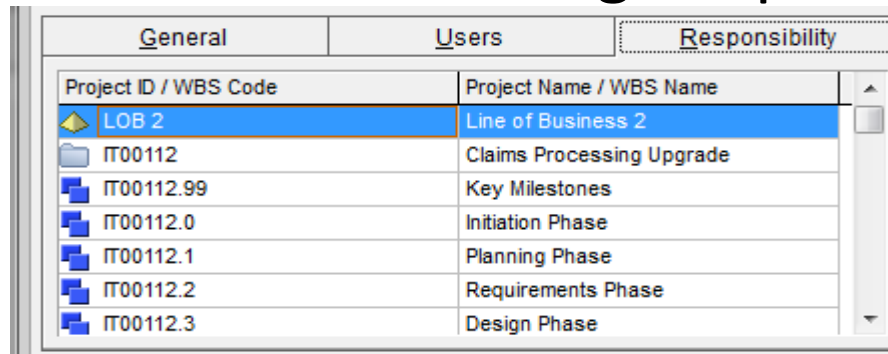


# Opening OBS

- You can assign Users (Primavera user) to a selected OBS node using Users Tab



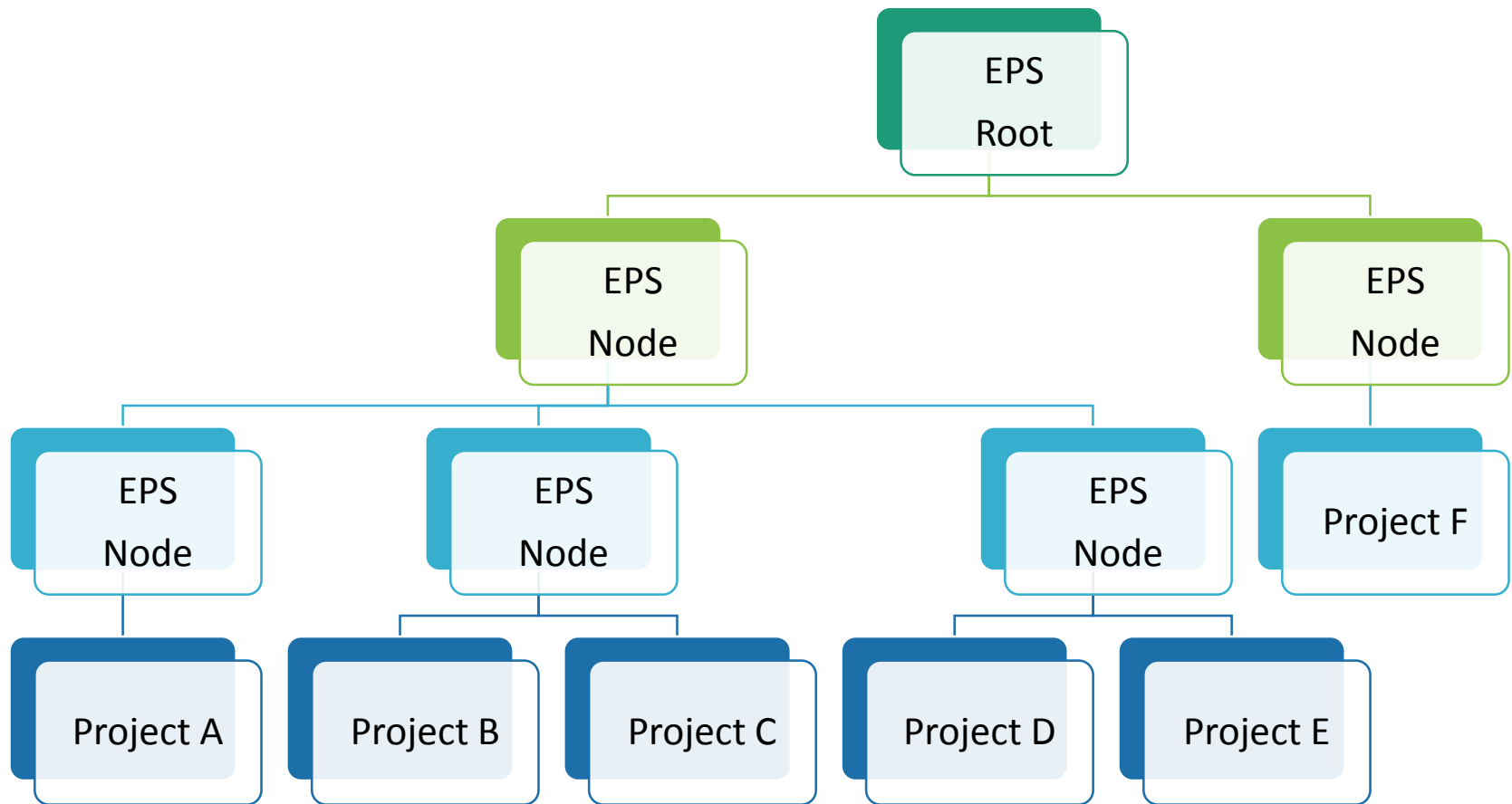
- You can add a Responsibility of Certain Project/WBS to a selected OBS node using Responsibility Tab



# Enterprise Project Structure

- The *Enterprise Project Structure (EPS)* is a hierarchy used to organize projects.
  - The EPS is made of roots and nodes
    - Each root in the EPS can be sub-divided into many nodes
    - Nodes represent different levels within the structure
      - E.g., nodes can represent divisions within your company, departments, project groups, and site locations
  - All projects must be included in a node
    - Each node can contain an unlimited no. of projects
    - Projects always represent the lowest level of hierarchy
    - Placement of a project in the hierarchy determines the summary level in which it is included

# Enterprise Project Structure



# Opening EPS

- You can use *Enterprise Project Structure* dialog box to define the EPS.
- The three fields to enter when adding an EPS node are:
  - *EPS ID* – Identifies the selected EPS node
  - *EPS Name* – Description of the selected EPS node
  - *Responsible Manager* – Use this field to select an OBS (Organizational Breakdown Structure) element to associate with the selected level of EPS.

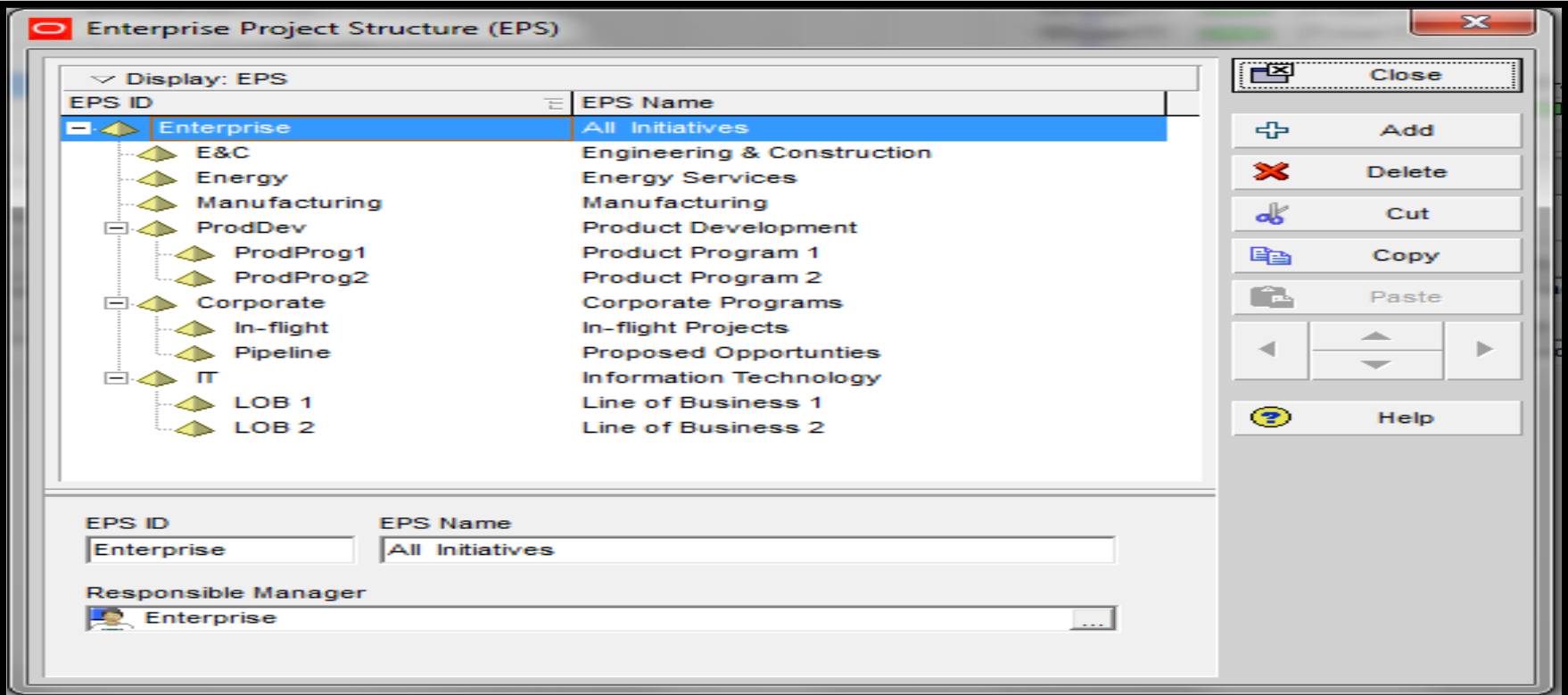


The screenshot shows a dialog box with three input fields:

- EPS ID:** A text box containing the value "Education".
- EPS Name:** A text box containing the value "Education".
- Responsible Manager:** A dropdown menu showing "Education" with a small icon to the left and a three-dot menu icon to the right.

# Opening the EPS

- Exercise
  - Steps
    - In the Enterprise menu, click Enterprise Project Structure
    - Select an EPS node, Education
    - After viewing the EPS, click Close





# Enterprise Project Structure

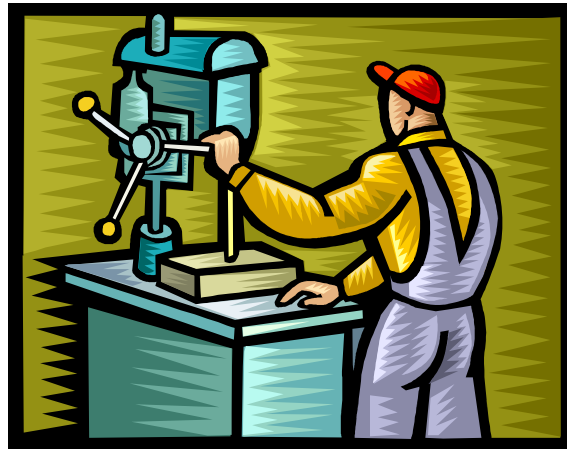


- Benefits

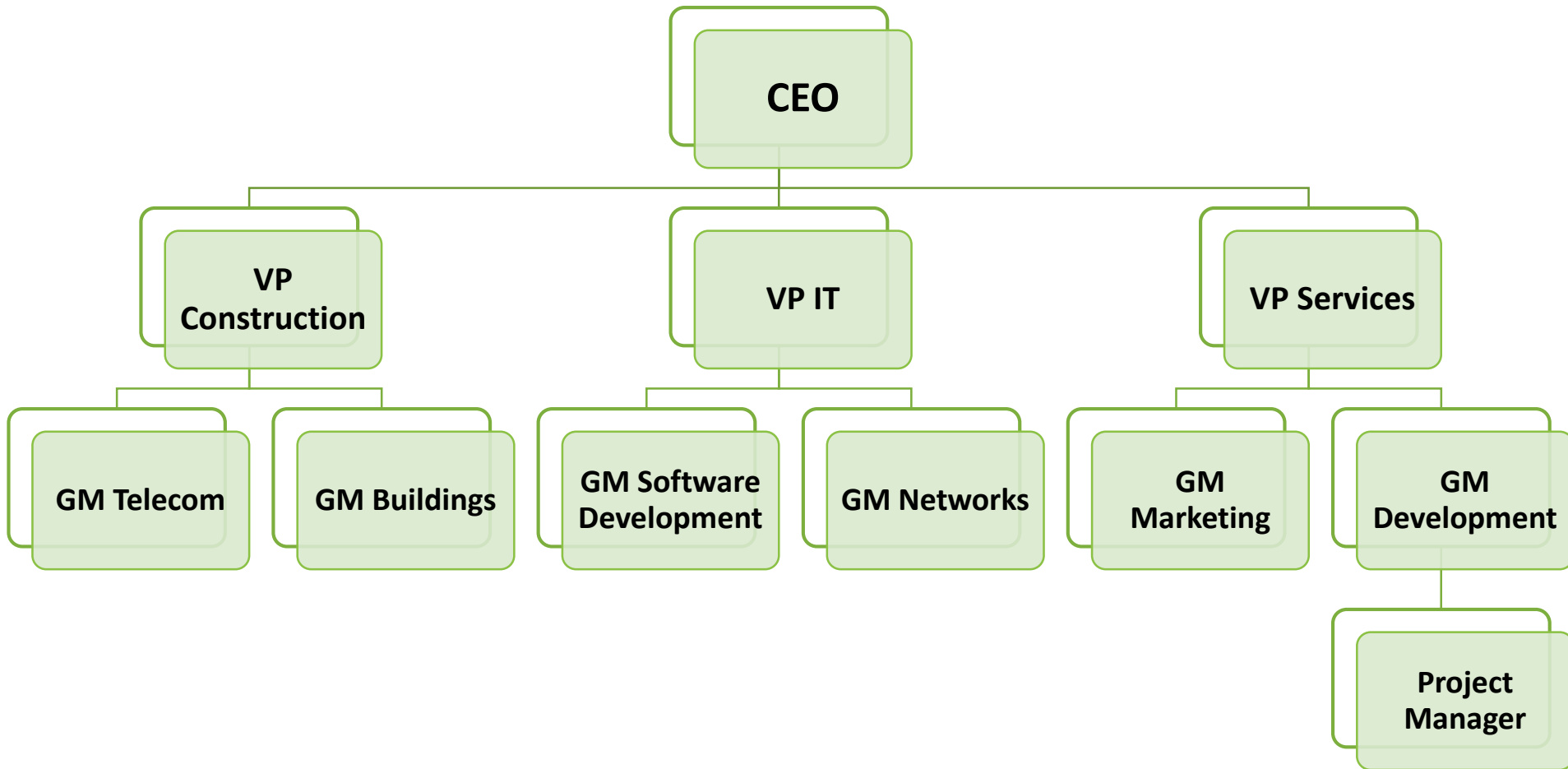
- View project priorities, scope, budgets, and resource across the entire project structure or within a specific node
- Manage projects separately while keeping ability to roll-up and summarize data across multiple projects
  - Each node acts as a master project, rolling-up all child nodes and projects
  - A node can be opened to view all detailed activity information from the member projects
- View resource allocation across projects
- Assign security at any level of project structure to provide user with appropriate access to project information

# WORKSHOP

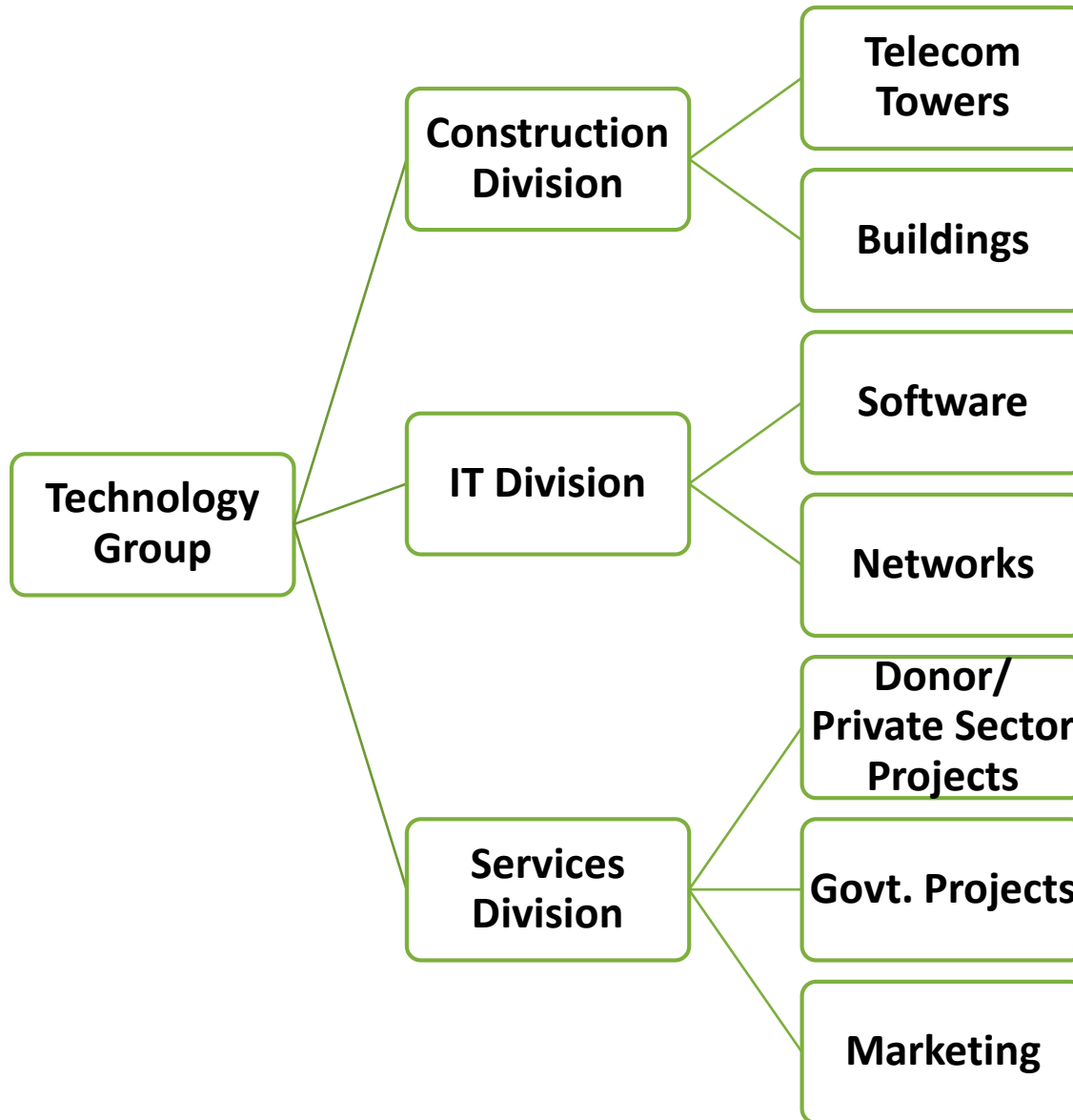
## Creating a Organization Breakdown Structure and Enterprise Project Structure



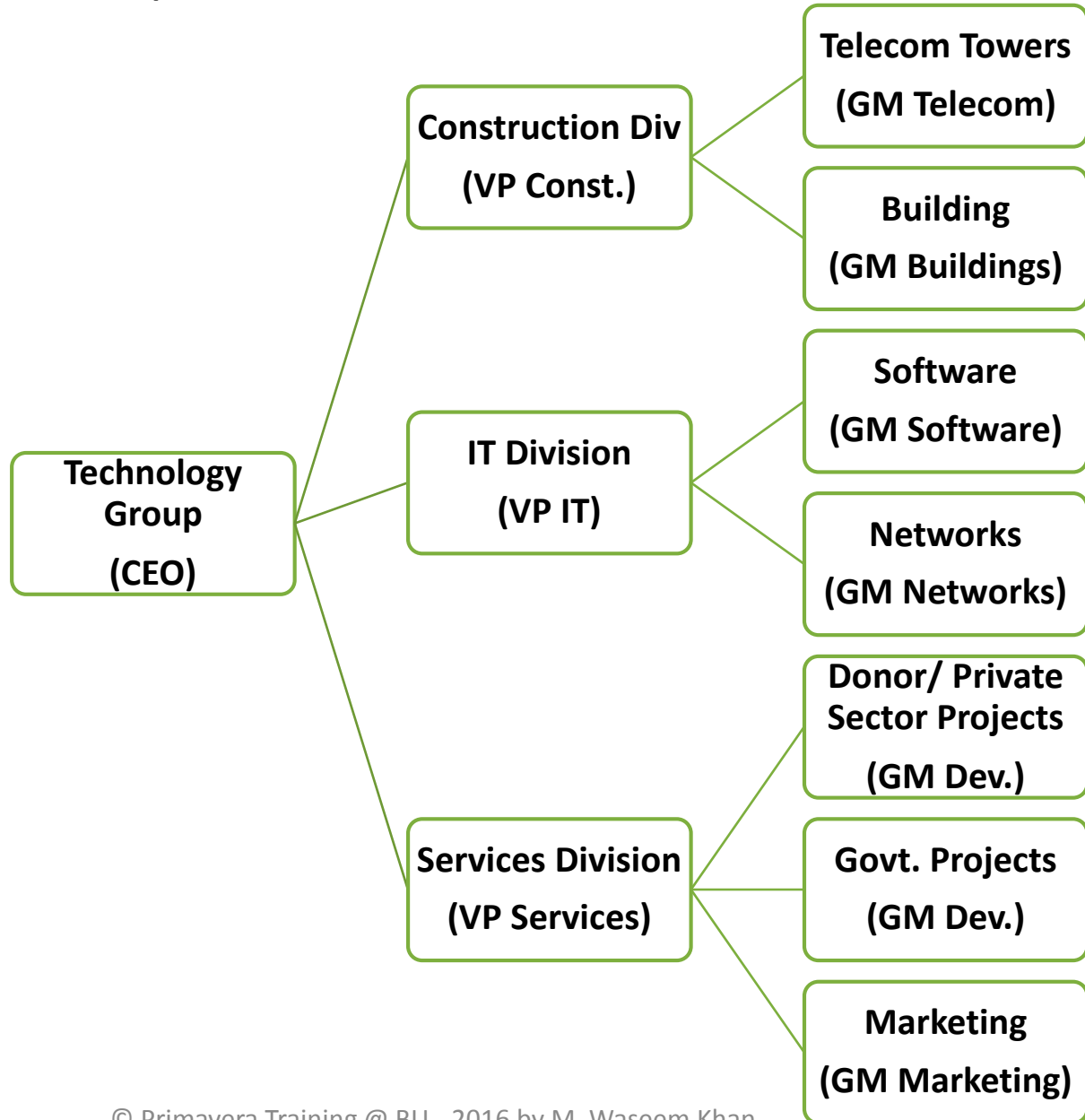
# Exercise: Create Management OBS



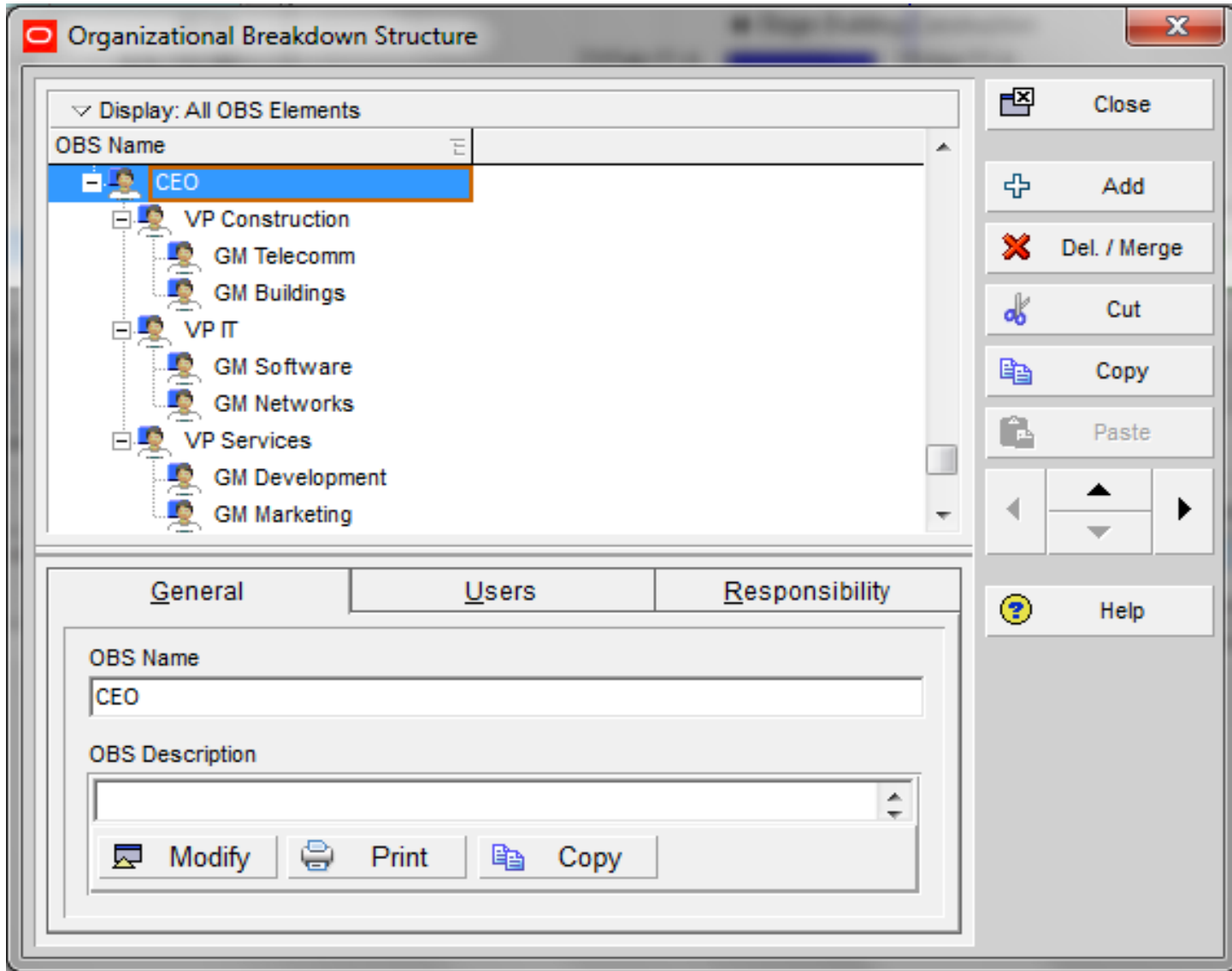
# Exercise: Create EPS



# Exercise: Map OBS with EPS



# Organization Breakdown Structure



Organizational Breakdown Structure

Display: All OBS Elements

OBS Name

- CEO
  - VP Construction
    - GM Telecomm
    - GM Buildings
  - VP IT
    - GM Software
    - GM Networks
  - VP Services
    - GM Development
    - GM Marketing

Close

Add

Del. / Merge

Cut

Copy

Paste

Help

General Users Responsibility

OBS Name

CEO

OBS Description

Modify Print Copy

# Enterprise Project Structure



Enterprise Project Structure (EPS)

Display: EPS

EPS ID	EPS Name	Responsible Manager
Enterprise	All Initiatives	Enterprise
TG	Technology Group	CEO
CoD	Construction Division	VP Construction
TET	Telecomm Towers	GM Telecomm
BLD	Buildings Projects	GM Buildings
ITD	IT Division	VP IT
SOW	Software Projects	GM Software
NET	Networks Projects	GM Networks
SeD	Services Division	VP Services
DPP	Donor/ Private Sector Projects	GM Development
GPP	Government Projects	GM Development
MKT	Marketing Projects	GM Marketing

Close

Add

Delete

Cut

Copy

Paste

Help

EPS ID: TG

EPS Name: Technology Group

Responsible Manager: CEO

# Lesson Review

- The OBS and EPS are the hierarchies that represent the management and the project organization of your company respectively
- In EPS, root is the top-level that can be sub-divided into nodes
- Each node represents a level in the project structure that can hold another node or a project
- Projects represent the lower level of hierarchy
- The EPS enables you to view project data across the entire project structure or within a specific node



# Creating a Project

## Lesson 5

# Creating a Project

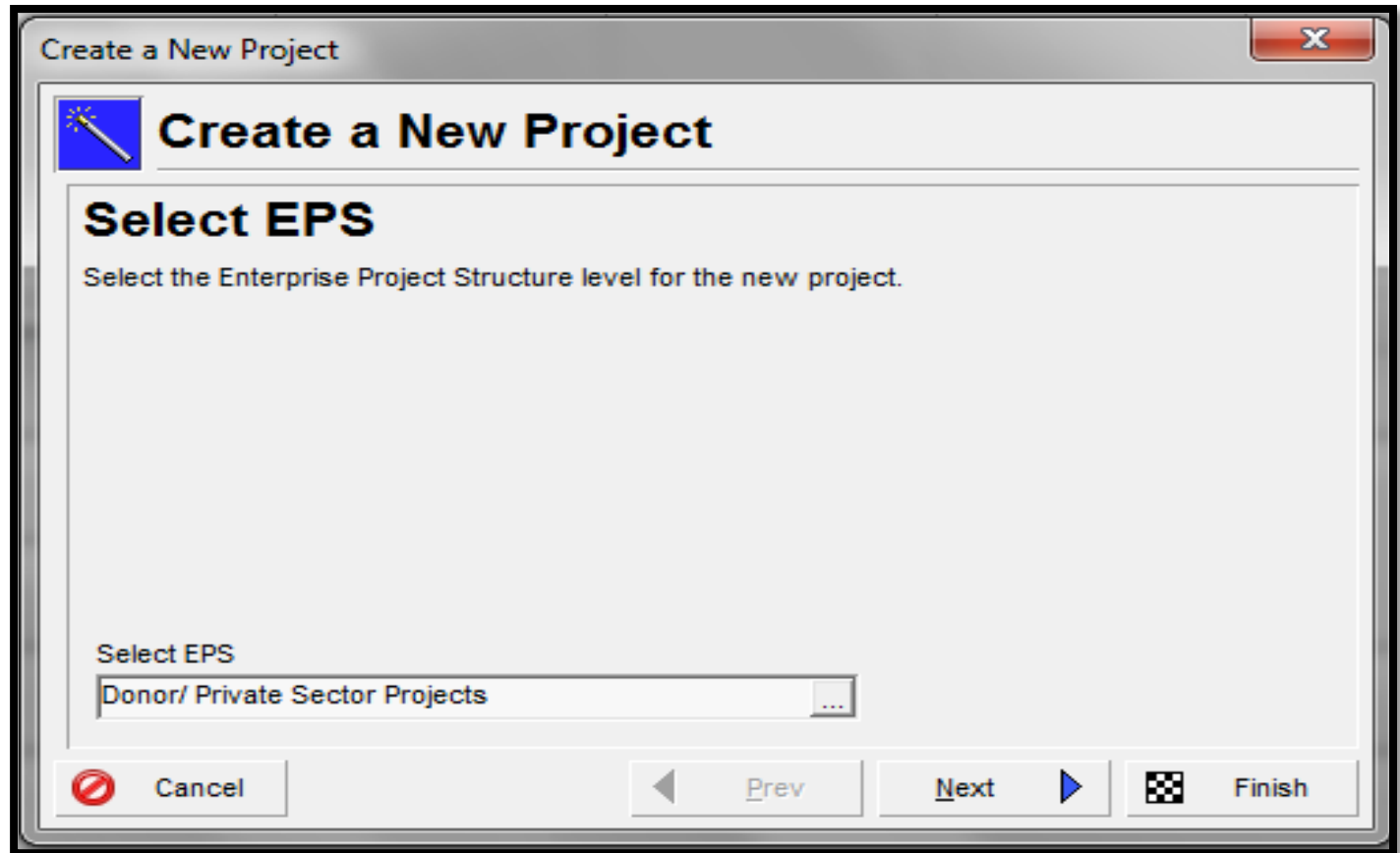
- Objectives
  - Create a Project
  - Navigate in the Project Window
  - View and Modify Information in Project Details

# Creating a Project


- Project can be created using a variety of methods:
  - **Using the Create a New Project Wizard**
    - Create a Project
    - Create the Work Breakdown Structure (WBS)
    - Add Activities
    - Assign Resources and Costs
  - **Using Project Templates (Only Available in EPPM 8+ – Enterprise Suite)**
    - Create Project from Methodology (Templates)
    - Review and Adjust the WBS
    - Review and Adjust the Activities
    - Assign Resources and Costs
  - **Importing a File**
    - Import Projects Using the Following File Formats:
      - Project Management Module Project (XER)
      - All Microsoft Project Related Extensions (MPP, MDB, MPD, MPT)
      - Third-Party Projects (MPX)
      - Primavera Project Planner Projects (P3)
    - Review and Adjust the WBS
    - Review and Adjust the Activities
    - Assign resources and Costs
  - **Copy/ Paste**
    - Select Elements of an Existing Project You Want to Copy to a New Project

# Create a New Project Wizard

- The *New Project Wizard* can assist you in creating a project

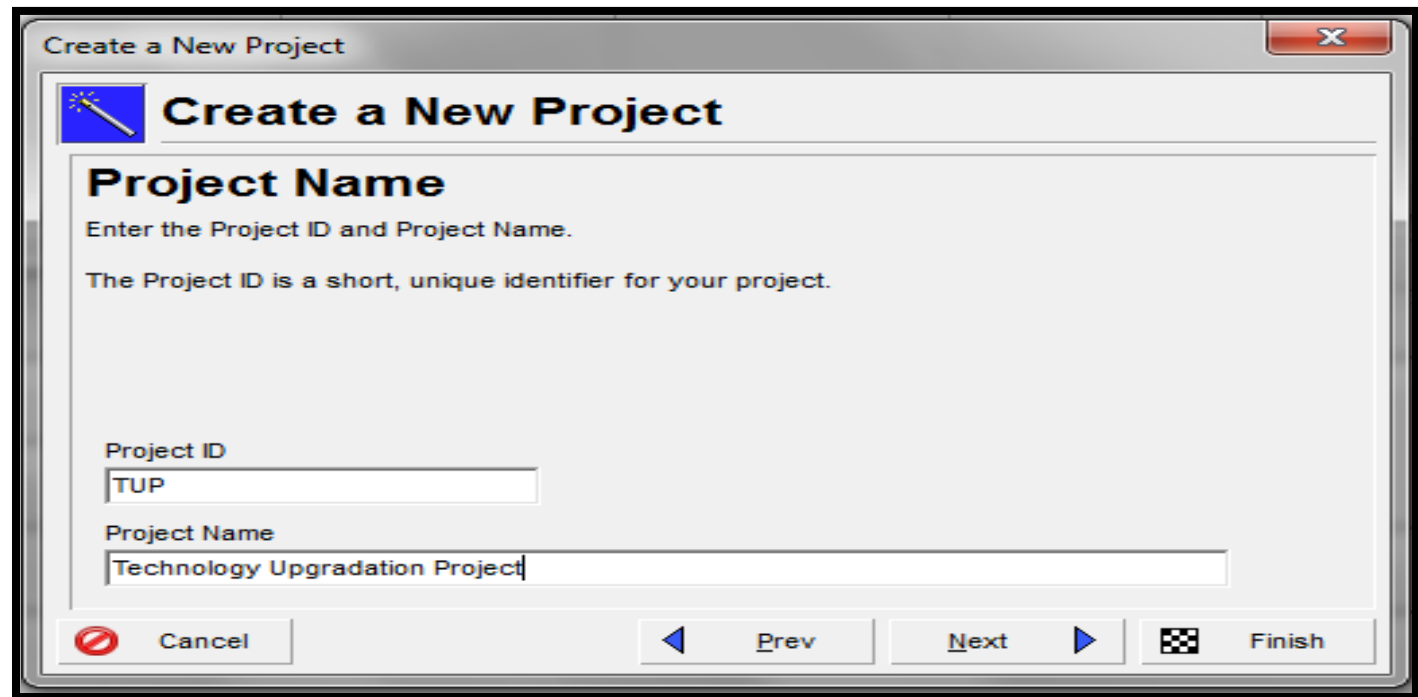


- Exercise
  - Steps

- In the File menu, click New to launch the wizard
- Click Select EPS field, click 
- Select a node, Donor/ Private Sector Projects

# Entering Project Name

- The *Project Name* is City Center Office Building Addition. You can shorten the name to create the Project ID, bldg
  - *Project ID* – Type a unique identifier in this field
  - *Project Name* – Type a new name in this field. (May not be unique)

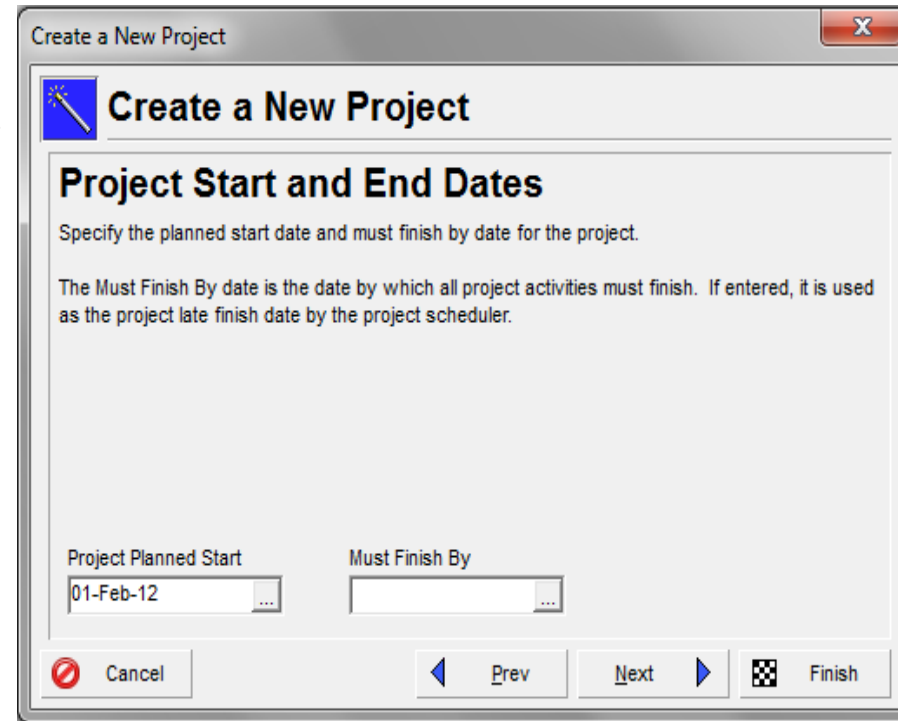


- Exercise
  - Steps

- In Project ID field type <TUP>
- Type a name in Project Name field<Technology Upgradation Project>

# Entering Project Start & End Dates

- Use the calendar to select *Planned Start* and *Must Finish By* dates for the project.
- The *Must Finish By* field is not mandatory. You can assign a project Must Finish By date at any point in the project lifecycle in the Dates tab in Project Details.
- To navigate in the calendar:
  - When you launch the calendar, the current month/year is displayed.
  - To navigate to a different year, click the month/Year section in the calendar, and then use arrows to scroll to the desired year.
  - Click the desired month and date, and then click Select.





The screenshot shows a window titled "Create a New Project" with a close button (X) in the top right corner. Below the title bar, there is a blue icon of a pencil and the text "Create a New Project". The main content area is titled "Project Start and End Dates" and contains the following text: "Specify the planned start date and must finish by date for the project." and "The Must Finish By date is the date by which all project activities must finish. If entered, it is used as the project late finish date by the project scheduler." Below this text, there are two input fields: "Project Planned Start" with the value "01-Feb-12" and a calendar icon, and "Must Finish By" which is currently empty. At the bottom of the dialog, there are four buttons: "Cancel" (with a red circle and slash icon), "Prev" (with a left arrow icon), "Next" (with a right arrow icon), and "Finish" (with a checkered icon).

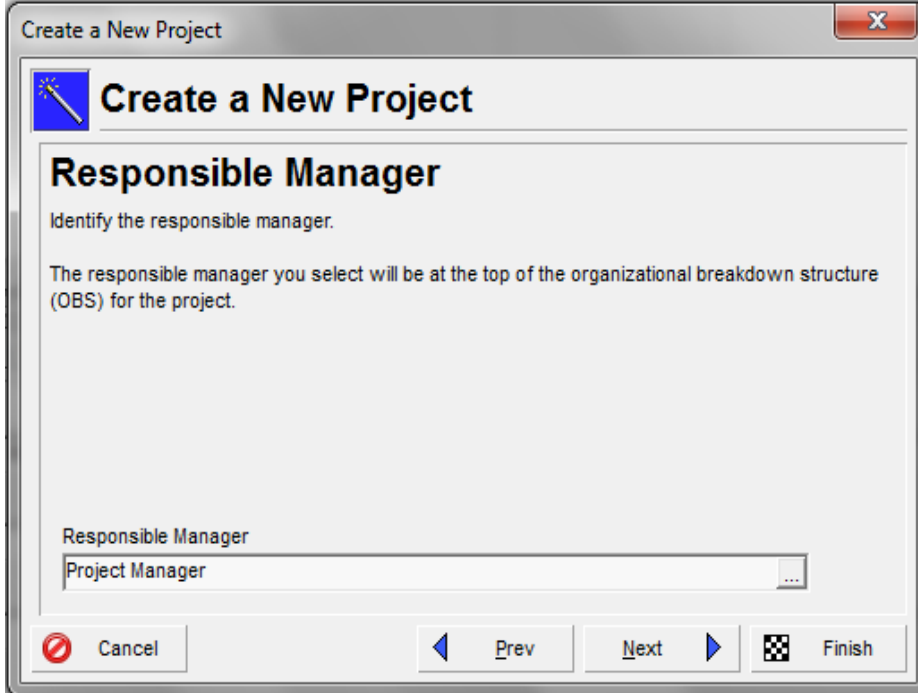
# Entering Responsible Manager

- The *Responsible Manager*, selected from the OBS, is the individual responsible for the work.
- The OBS is a hierarchical arrangement of an organization's project management structure, either as roles or individuals. The OBS can be configured to represent a detailed organizational breakdown (with employee names) or a more general framework where departments, teams, or types of responsibility are modeled in the structure.

## • Exercise

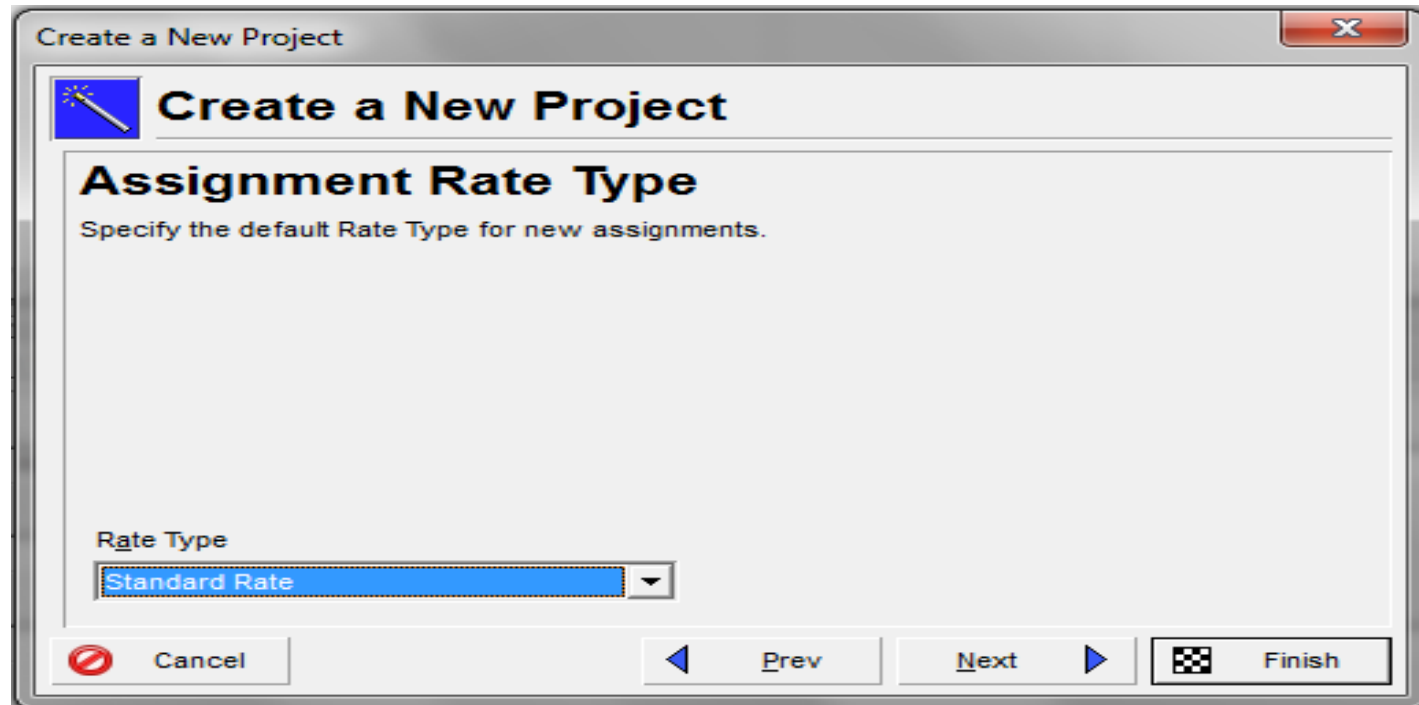
### • Steps

- In the Responsible Manager field, click 
- Select a responsible manager <Project Manager> and then click select button 
- Click Next



# Selecting Assignment Rate Type

- You can specify the *Assignment Rate Type* for new resource assignments. The default rate type determines which price/unit is set on a resource assignment. Values in the Rate Type drop-down list reflects rate types defined in the Rate Types tab in Admin Preferences.



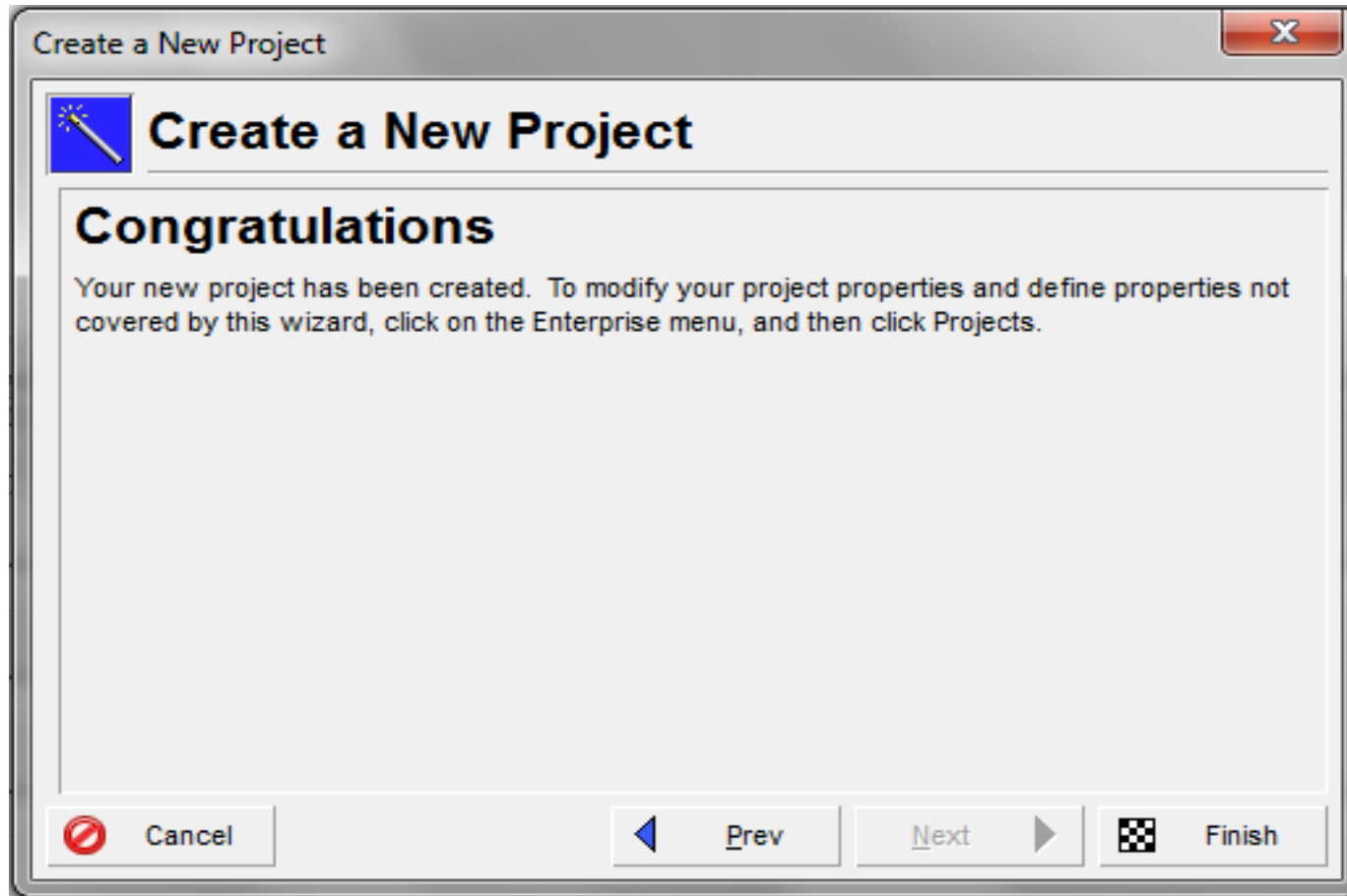
The screenshot shows a dialog box titled "Create a New Project" with a sub-header "Assignment Rate Type". Below the sub-header, it says "Specify the default Rate Type for new assignments." There is a "Rate Type" label above a drop-down menu that currently displays "Standard Rate". At the bottom of the dialog, there are four buttons: "Cancel", "Prev", "Next", and "Finish".

- Exercise
  - Steps

- In the Rate Type drop-down list, confirm Standard Rate
- Click Next




# Project Creation



- Exercise
  - Steps
    - Click Finish to end the new project wizard

# Projects Window

- The project has been created and opened
- To view high-level information about the project, navigate to the Projects window, which displays the projects within the EPS that you can access. You can also:
  - Open, create, and save project layouts
  - Group projects by the EPS, project codes, or other project-related items
  - Filter projects
  - Modify column data
- The  icon in the project window indicates the project is open
- Exercise
  - Steps
    - In the Directory Bar, click Projects

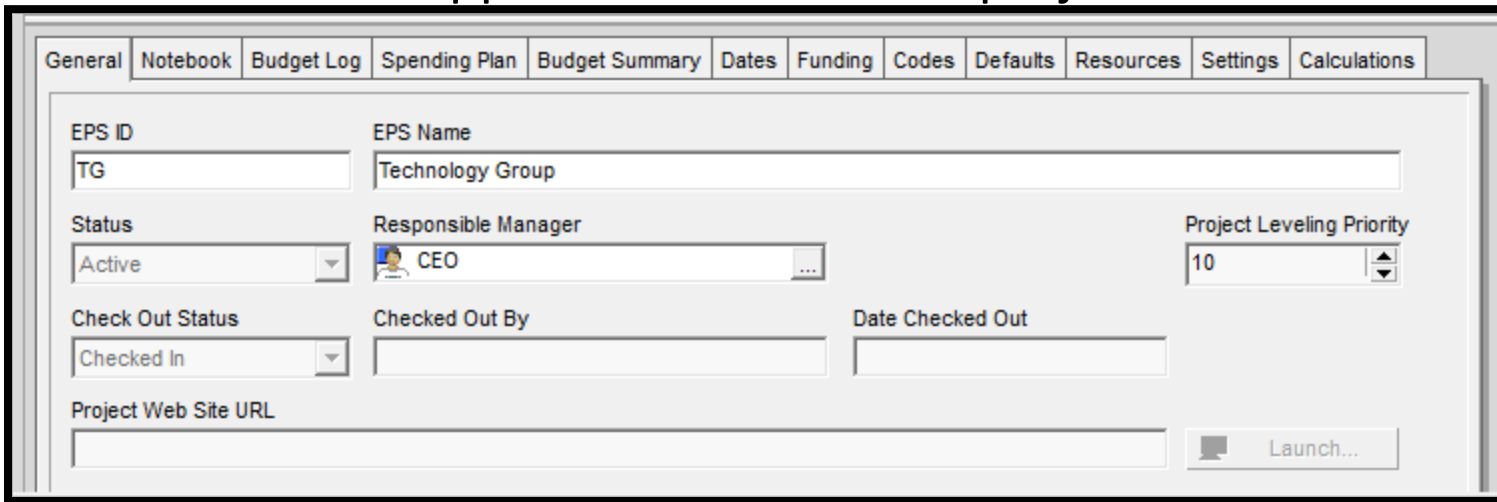


# Projects Window

<b>Item</b>	<b>Functionality</b>
1. Tool Bar	Displays icons that allow you to change the look and feel of the layout
2. Layout Option Bar	Displays a menu of available options for projects window
3. Command Bar	Displays options for adding or editing project data
4. Bar Area	Provides a graphical display of the project progress over the period of time
5. Project Table	Displays project information in spreadsheet format
6. Vertical Split Bar	Drag this bar to hide/ show information in each pane

# Project Details

- *Project Details* information is located in the bottom layout of the Projects Window. It can be used to define the project properties and defaults that are applied to the selected project.



- Exercise
  - Steps
    - In the Layout Options bar, click Layout, Open
    - If Prompted to save changes made to the layout, click No
    - Select a layout
    - Click Open
    - Select a project <TUP – Technology Upgradation Project>
    - Verify the General Tab is selected in bottom layout

# General Tab

- The *General Tab* enables you to view or modify general info about the selected project. Project ID, Project Name, and Responsible Manager can be set when you create the project, or you can change them here. The remaining fields are set by default.
- Fields in the General tab are:
  - *Project ID* – Short, unique identifier for the project
  - *Project Name* – Name of the project
  - *Status* – Indicates status of the project based on table:

Status	Indicates Project is...
Planned	Being analyzed before establishing permanent plan
Active	Currently being worked on
Inactive	Completed or on hold
What-if	Used as Test Scenario

# General Tab

- Fields in the *General Tab* are:
  - *Responsible Manager* – Individual, selected from the OBS, who is responsible for the project.
  - *Leveling Priority* – User-defined rank of the project against all other projects, based on its importance to the organization while leveling resources. You can enter a value between 1 and 100. The highest rank is 1; the default is 10.
  - *Check Out Status* – Indicates whether the project is checked-in or checked-out
  - *Checked Out By* – Displays the user that checked-out the project
  - *Date Checked Out* – Indicates the date and time the user checked-out the project
  - *Project Website URL* – Displays the project's website address

# Dates Tab

- The *Dates Tab* enables you to edit date information for the selected project. The Planned Start and Must Finish By dates can be set when you create the project, or you can change them here.
- Fields in the Dates tab are:
  - *Planned Start* – Planned start date of the project
  - *Data Date* – Date used as the starting point for schedule calculations
  - *Must Finish By* – Date indicating the desired end date of the project
  - *Finish* – Non-editable field indicating the latest early finish date calculated when the project was last scheduled
  - *Actual Start* and *Actual Finish* – Non-editable field indicating the actual start and finish dates of the project
  - *Anticipated Start* and *Anticipated Finish* – Expected dates that can be entered while planning the project at a high level



# Notebook Tab

- The *Notebook Tab* enables you to write, view, or edit project notes such as the project's purpose, core requirements, or other project-specific details.
- Fields in the Notebook tab are:
  - *Notebook Topic* – List of topics assigned to the selected node/ project
  - *Detail* – User-defined description of the selected topic. You can use HTML editing features, including formatting text, inserting pictures, copy, paste, and adding hyperlinks
- Exercise
  - Steps
    - Click the Notebook Tab
    - In the Notebook Topic selection, click Add
    - Scroll-down and highlight a Notebook topic, Purpose
    - Click Assign button
    - Close the assign Notebook Topic dialog box
    - In the Detail section, type <Building Design Enhancement, New Software Development, and Training for Software Technology Park>
    - Press Enter (keyboard) – for single spacing Press Shift+Enter

# Notebook Tab



Primavera P6 Professional R8.1 : TUP (Technology Upgradation Project)

File Edit View Project Enterprise Tools Admin Help

Projects

Project ID	Project Name	Total Activities	Strategic Priority	11	23	30	06	13	20	27	04	11	18	25	01	08	15	22	29	05	12	19	26	04	11	18	25	01	08	15	22	29	06	
Enterprise	All Initiatives	2254																																
TG	Technology Group	0	500																															
CoD	Construction Division	0	500																															
TET	Telecomm Towers	0	500																															
BLD	Buildings Projects	0	500																															
ITD	IT Division	0	500																															
SOW	Software Projects	0	500																															
NET	Networks Projects	0	500																															
SeD	Services Division	0	500																															
DPP	Donor/ Private Sector Projects	0	500																															
TUP	Technology Upgradation Project	0	500																															
GPP	Government Projects	0	500																															
MKT	Marketing Projects	0	500																															

General Notebook Budget Log Spending Plan Budget Summary Dates Funding Codes Defaults Resources Settings Calculations

Notebook Topic

- Scope

Scope

*Building Design Enhancement and Training for a Software Technology Park*

Assign Notebook Topic

Display: Notebook Topics

Search

- Executive Feedback
- Progress Photographs
- Fishbone Highlights
- Cause & Effect Analysis
- Scope
- Anticipated Problems
- Entry Criteria
- Tools / Techniques
- Exit Criteria
- Safety Requirements

Add Delete

Modify Print Copy

Portfolio: All Projects User: admin Data Date: 22-Oct-11 Access Mode: Shared Baseline: Current Project

# Defaults Tab

- The *Defaults Tab* is divided into two section:
  - Default for New Activities – Indicates the settings that will be used when new activities are added to the project. Note that changing these settings will not affect existing activities.
  - *Auto-numbering Defaults* – Sets how new activities will be numbered in your project.
    - When the Increment Activity ID based on selected activity checkbox is marked, the prefix or suffix of the selected activity is applied to the activity that is being added.

# Defaults Tab



General	Notebook	Budget Log	Spending Plan	Budget Summary	Dates	Funding	Codes	Defaults	Resources	Settings	Calculations
---------	----------	------------	---------------	----------------	-------	---------	-------	----------	-----------	----------	--------------

### Defaults for New Activities

Duration Type	Fixed Duration & Units	Cost Account	...
Percent Complete Type	Duration	Calendar	Corporate - Standard Full Time ...
Activity Type	Task Dependent		

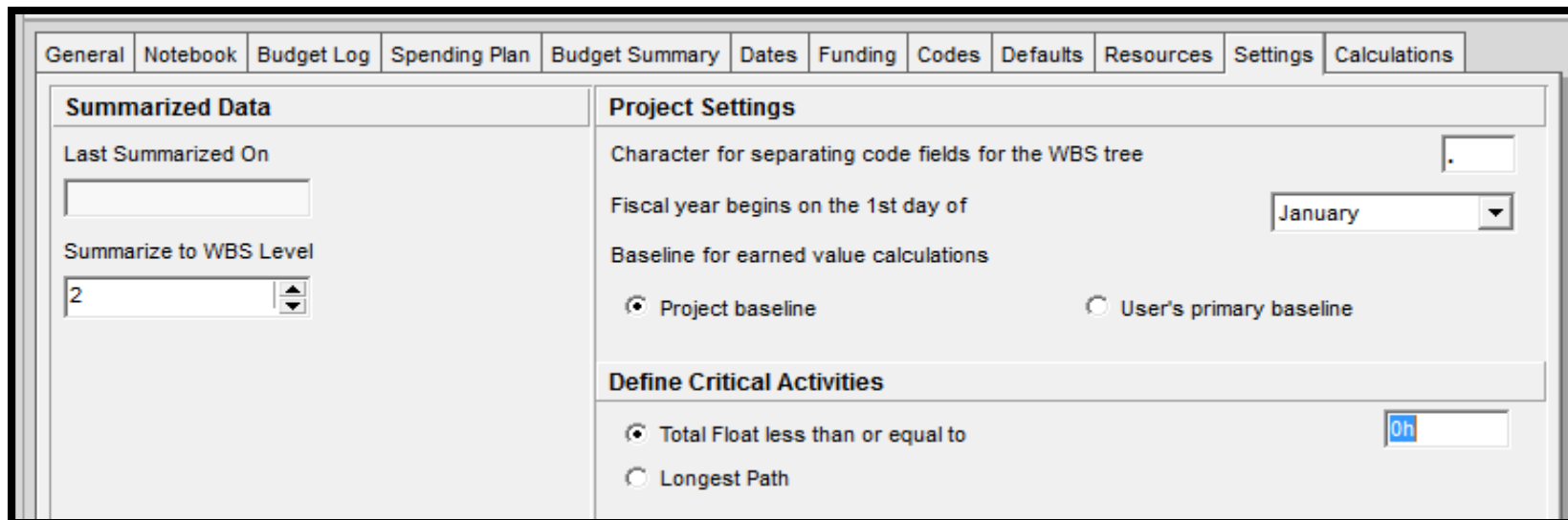
### Auto-numbering Defaults

Activity ID Prefix	Activity ID Suffix	Increment
A	1000	10

Increment Activity ID based on selected activity

# Settings Tab

- The *Settings Tab* consists of three sections:
  - *Summarized Data* – Identifies the date and level to which the project was last summarized
  - *Project Settings* – Sets the character used to separate WBS levels, identifies the month in which the fiscal year begins, and specifies the baseline used in earned value calculations
  - *Define Critical Activities* – Identifies which activities are displayed as critical, either longest path or Total Float.



The screenshot shows the 'Settings' tab in the Oracle Primavera P6 software. The interface is divided into three main sections:

- Summarized Data:**
  - Last Summarized On: [Empty text box]
  - Summarize to WBS Level: [Dropdown menu showing '2']
- Project Settings:**
  - Character for separating code fields for the WBS tree: [Text box containing '.']
  - Fiscal year begins on the 1st day of: [Dropdown menu showing 'January']
  - Baseline for earned value calculations:
    - Project baseline
    - User's primary baseline
- Define Critical Activities:**
  - Total Float less than or equal to [Text box containing '0h']
  - Longest Path

# Lesson Review

- You can create a project with several methods including: New Project Wizard, Import a File, Copy and Existing File, and Project Templates.
- Once the project is created, use the Projects Window to high-level information for the projects you can access
- Use Project Details tab in the Projects Window to define defaults settings and properties for the selected project, such as anticipated start and finish dates.

# Creating a Work Breakdown Structure (WBS)

## Lesson 6

# Creating a WBS

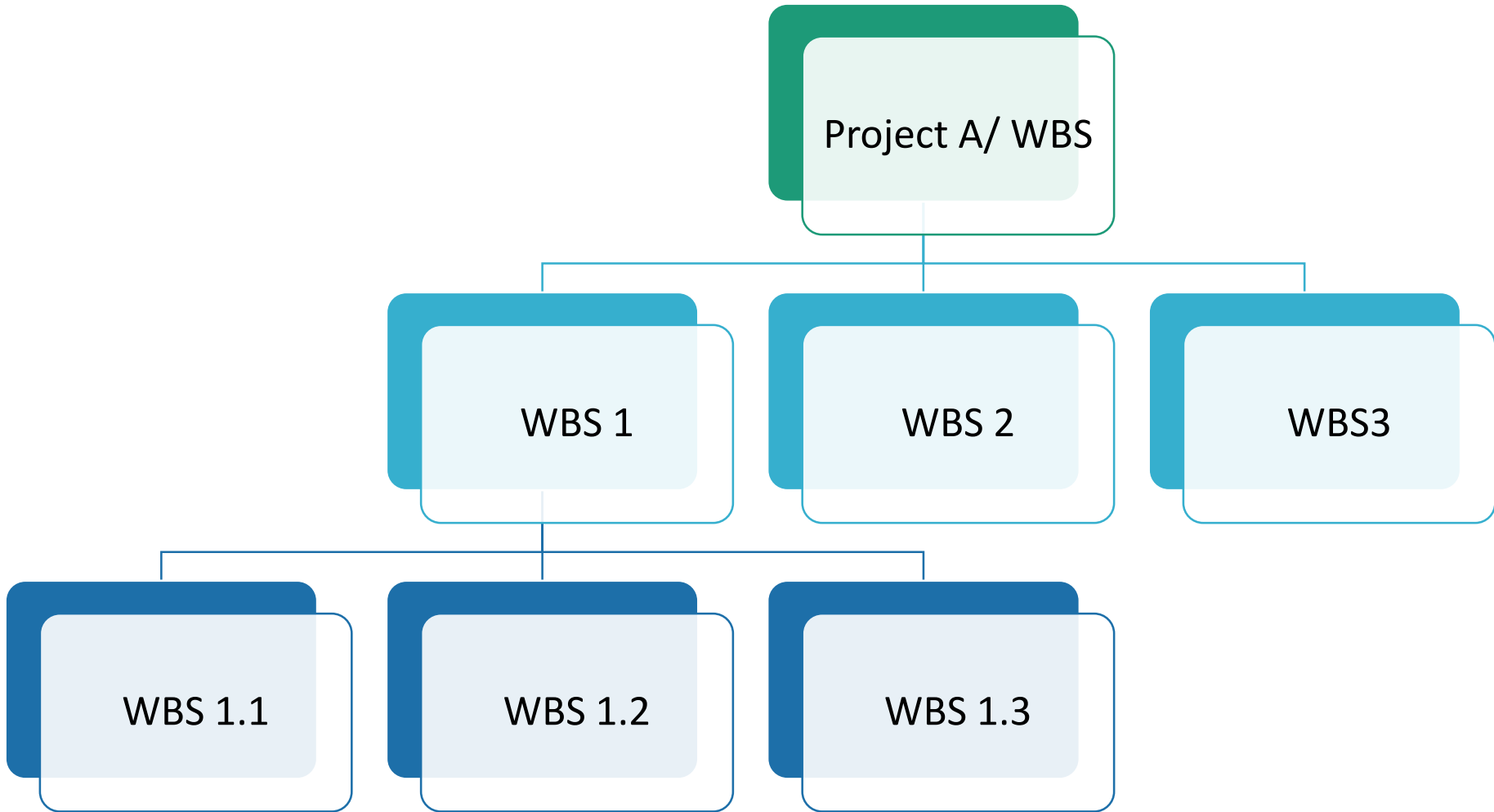
- Objectives
  - Define a Work Breakdown Structure of a project
  - Create multiple levels of WBS hierarchy



# Work Breakdown Structure

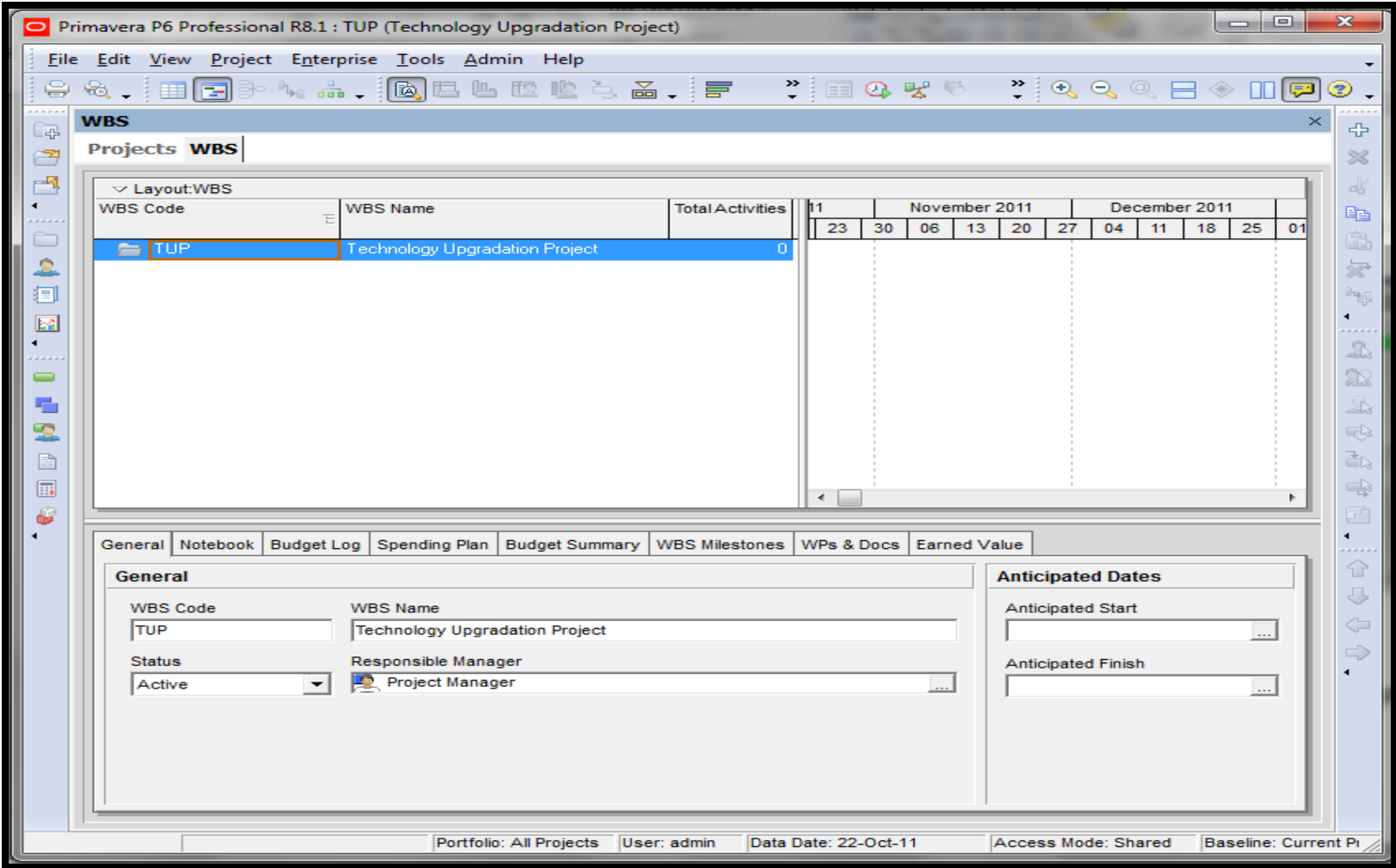
- The *Work Breakdown Structure (WBS)* is a hierarchical arrangement of the products and services produced during, and by, a project. It enables you to divide a project into meaningful and logical pieces for the purpose of planning and control.
- Each project has a unique WBS hierarchy
  - The root level of the WBS is equal to the Project ID and Project Name
- Elements within the WBS have parent/child relationship, which means that you can rollup and summarize information from the lower levels.

# Work Breakdown Structure



# Viewing WBS Elements

- When the project is created, root level WBS element is added with the same ID and name as of project.



The screenshot shows the Primavera P6 Professional R8.1 interface. The main window displays the WBS (Work Breakdown Structure) for the 'Technology Upgradation Project'. The WBS Code is 'TUP' and the WBS Name is 'Technology Upgradation Project'. The total activities are 0. The interface includes a menu bar (File, Edit, View, Project, Enterprise, Tools, Admin, Help), a toolbar, and a sidebar with various icons. Below the WBS view, there are tabs for General, Notebook, Budget Log, Spending Plan, Budget Summary, WBS Milestones, WPs & Docs, and Earned Value. The General tab is active, showing fields for WBS Code, WBS Name, Status, and Responsible Manager. The Status is set to 'Active' and the Responsible Manager is 'Project Manager'. There are also fields for Anticipated Start and Anticipated Finish dates. The status bar at the bottom indicates the Portfolio is 'All Projects', User is 'admin', Data Date is '22-Oct-11', Access Mode is 'Shared', and Baseline is 'Current Pi'.

WBS Code	WBS Name	Total Activities	11	November 2011					December 2011				
			23	30	06	13	20	27	04	11	18	25	01
TUP	Technology Upgradation Project	0											

# Viewing WBS Elements

- Exercise

- Steps

- In the Projects Window, select a project TUP
    - Right-click the Projects Window and select Open Project
    - In the Directory Bar, click WBS
    - In the General Tab, note the WBS Code and WBS Name, TUP – Technology Upgradation Project

# Creating WBS Hierarchy

- WBS elements added to the root level element are automatically indented to form the second level of the hierarchy.
- When you create a new WBS element, it is indented as a “child” of the WBS element that is currently selected.
- If you add a WBS element to the wrong level or in the wrong order, you can use the indentation keys located on the Command Bar to adjust the structure of the WBS hierarchy.
- The child WBS element inherits attributes from the parent WBS element.
- You can determine the level of WBS elements group by clicking right in the WBS window and choosing Collapse To
- Right-click in the WBS window and click Expand All or Collapse All to expand or collapse elements of the WBS.

# Creating WBS Hierarchy



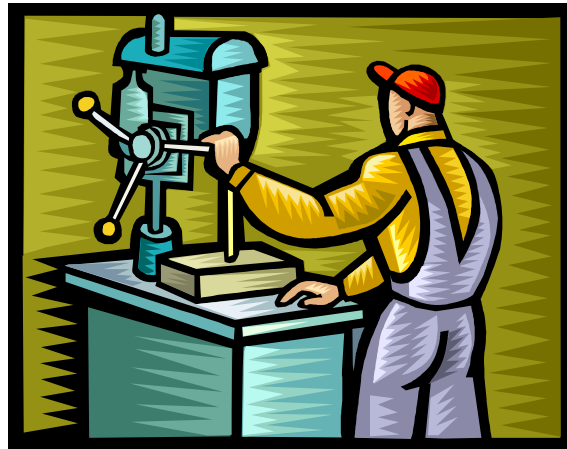
- Exercise

- Steps

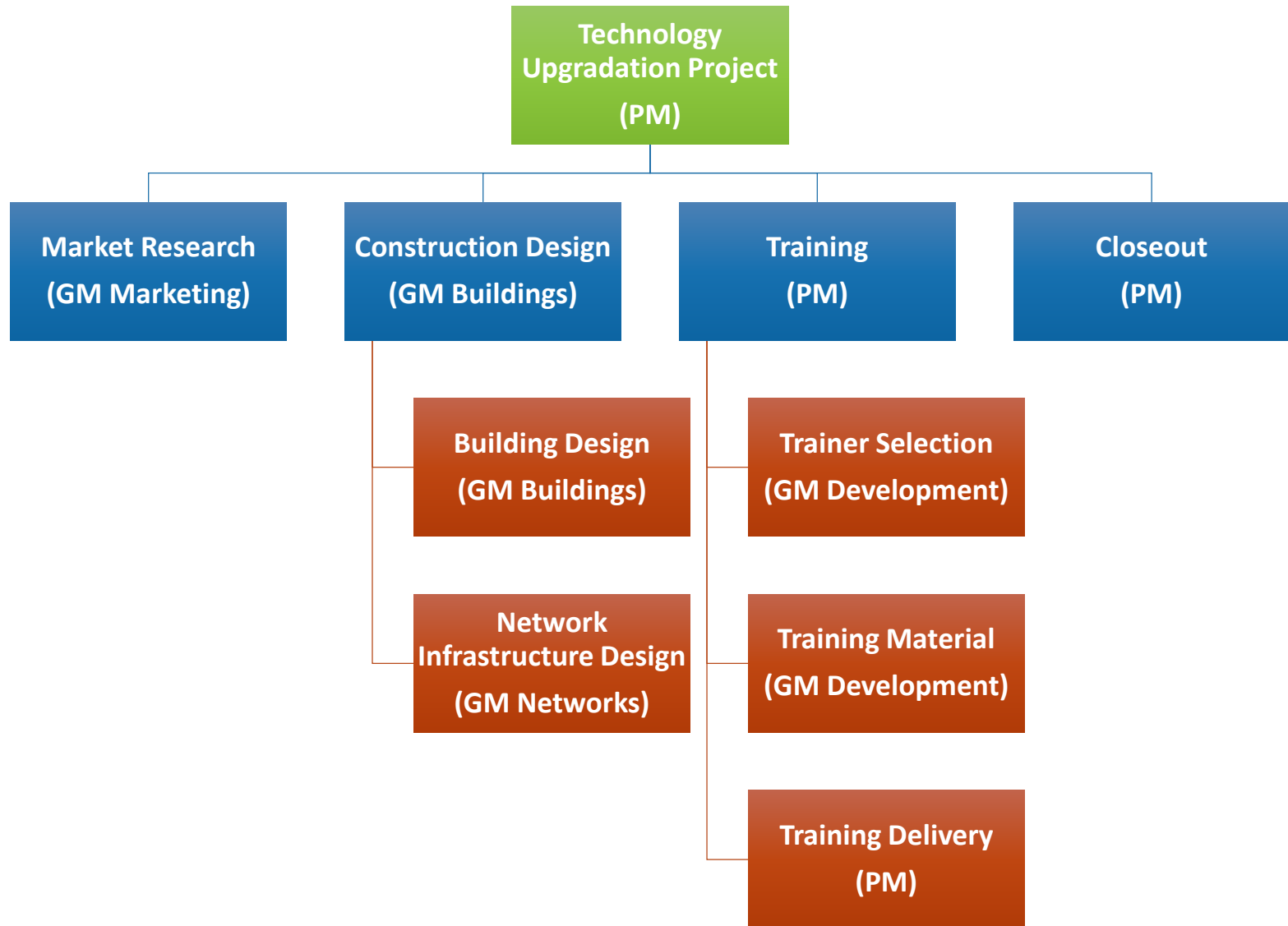
- In the Command Bar, click Add
    - In the WBS Code column, type the name and press Tab to move to the next field
    - In the WBS Name column, type the name and then press Enter
    - In the Responsible Manager, select appropriate manager as given

# WORKSHOP

## Creating a Work Breakdown Structure



# Exercise: Create WBS and Map Responsible Manager





# Exercise: Create WBS and Map Responsible Manager

Primavera P6 Professional R8.1 : TUP (Technology Upgradation Project)

File Edit View Project Enterprise Tools Admin Help

**WBS**

Projects WBS

Layout: WBS

WBS Code	WBS Name	Responsible Manager	O		N	
			23	30	06	13
TUP	Technology Upgradation Project	Project Manager				
TUP.1	Market Research	GM Marketing				
TUP.2	Construction Design	GM Buildings				
TUP.2.1	Building Design	GM Buildings				
TUP.2.2	Network Design	GM Networks				
TUP.3	Training	Project Manager				
TUP.3.1	Trainer Selection	GM Development				
TUP.3.2	Training Material	GM Development				
TUP.3.3	Training Delivery	Project Manager				
TUP.4	Closeout	Project Manager				

General Notebook Budget Log Spending Plan Budget Summary WBS Milestones WPs & Docs Earned Value

**General**

WBS Code: TUP      WBS Name: Technology Upgradation Project

Status: Active      Responsible Manager: Project Manager

**Anticipated Dates**

Anticipated Start:

Anticipated Finish:

Portfolio: All Projects    User: admin    Data Date: 22-Oct-11    Access Mode: SF

# Lesson Review

- The Work Breakdown Structure is a hierarchical arrangement of the products and services produced during and by a project.
- The highest level of the WBS is the project, and lowest level consists of the individual activities required for the deliverables.
- Create the WBS in WBS Window. Use the indentation keys to form various levels in the WBS.

# Adding Activities

## Lesson 7

# Adding Activities

- Objectives
  - Describe an activity and its components
  - Describe activity components
  - Add activities
  - Add a notebook topic to an activity
  - Add steps to an activity
  - Assign activity codes to activities

# Activities

- ***The component of work performed during the course of project.***
- Activities are the fundamental work elements of a project. They are the lowest level of a WBS and the smallest subdivision of work that directly concerns the project manager.
  - Most detailed work unit tracked in a project schedule.
  - Contains all information about the work to be performed.
  - Also known as a task, item, event, or work package

# Activity Components

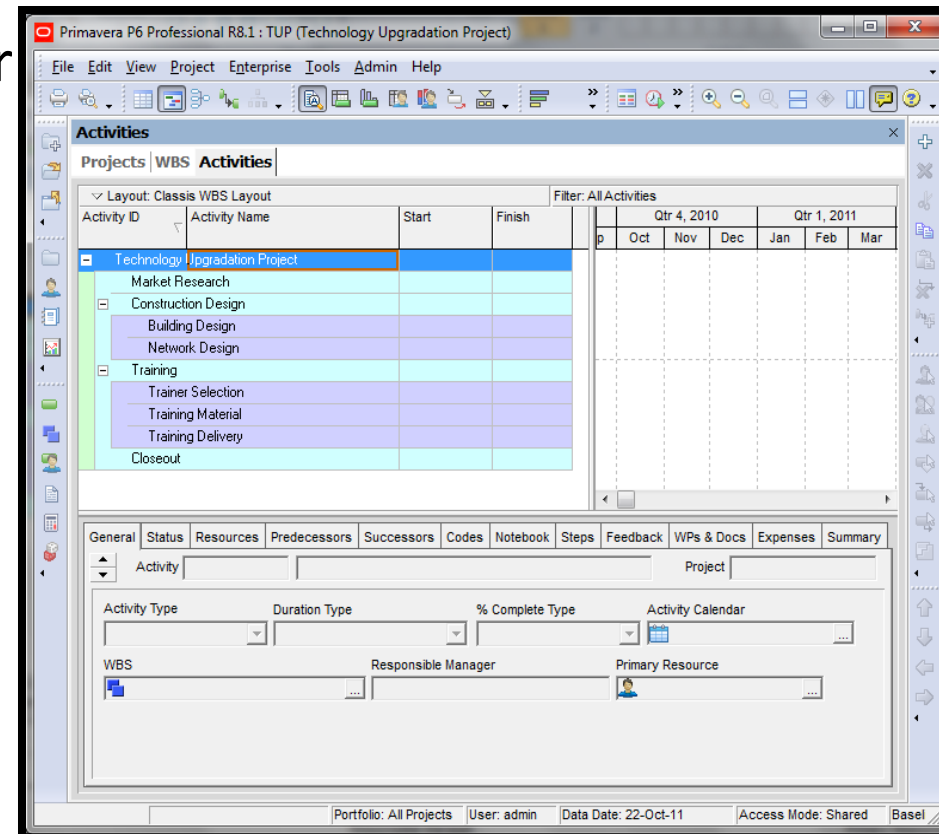


# Adding Activities

- Use the *Activities Window* to create, view, and modify activities for the selected project.
- To add an activity, perform one of the following:
  - In the Command Bar, click Add
  - In the Edit Menu, click Add
  - Press Insert on the Keyboard
  - Right-click and click Add

# Adding Activities

- Exercise
  - Steps
  - Open a Project, TUP
  - Confirm you are in Activities Window
  - Click the Layout Option Bar
  - and open a layout,
  - Classic WBS Layout





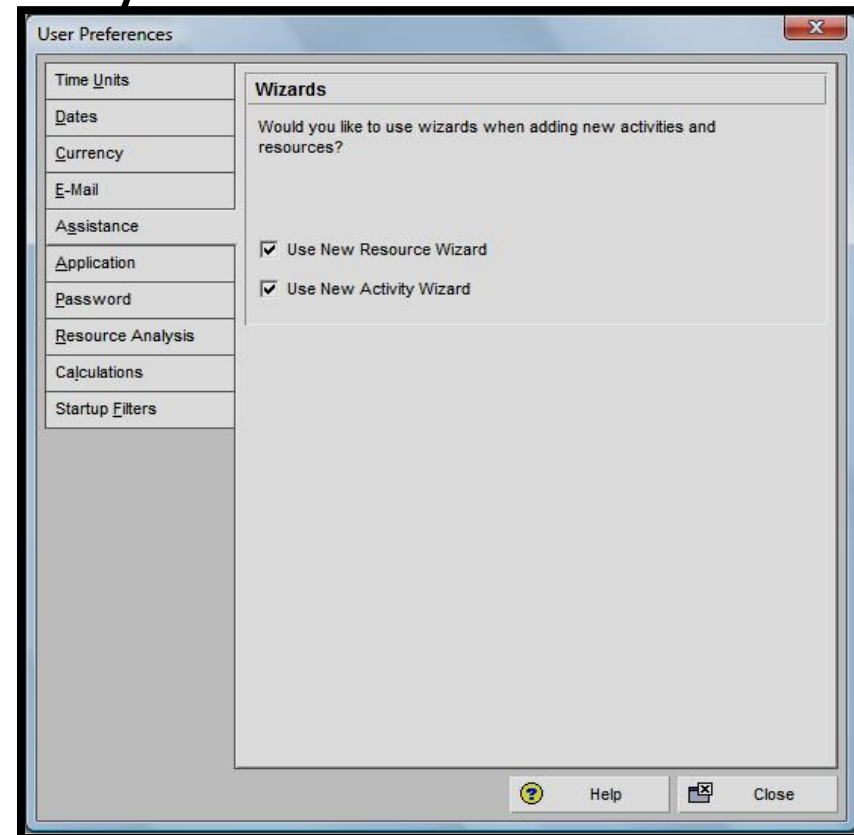
# New Activity Wizard

- The *New Activity Wizard* walks you through the process of adding an activity. Once you become familiar with the process, you can disable the wizard in User Preferences and manually add activities to the project.

- Exercise

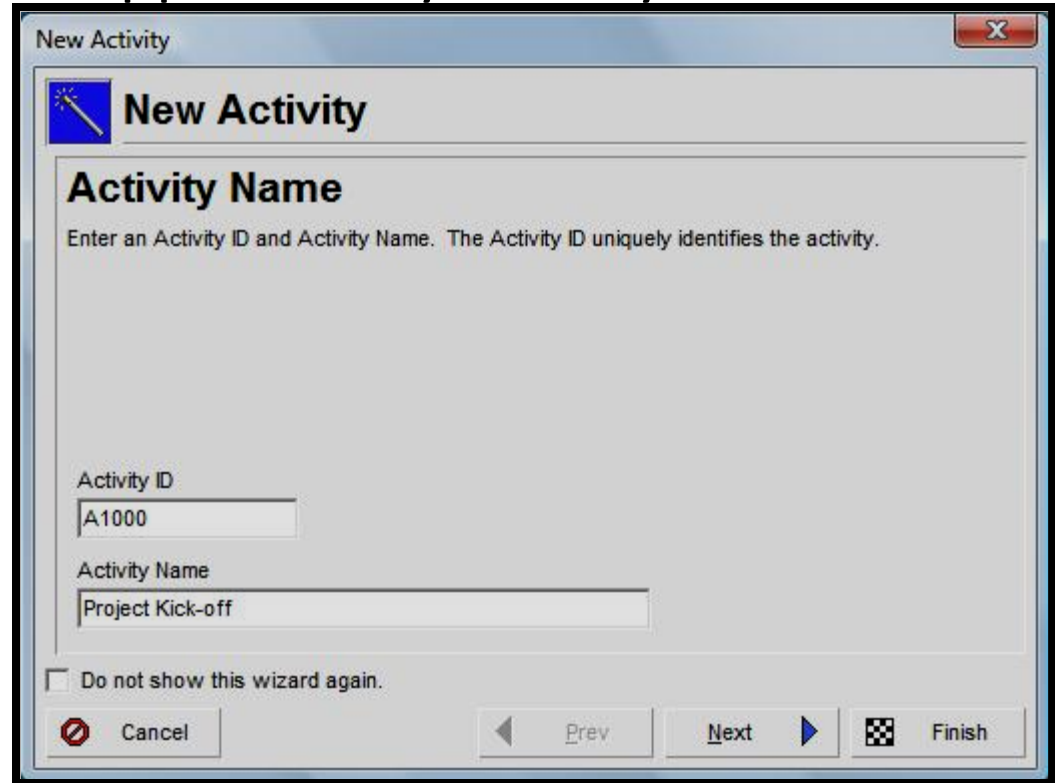
- Steps

- In the Edit Menu, click  
User Preferences
    - Click the Assistance Tab
    - Check Use New Activity Wizard
    - Click Close



# Adding Activities Using Activity Wizard

- The New Activity Wizard appears only when you click **Add** in the Command Bar.



- Exercise

- Steps

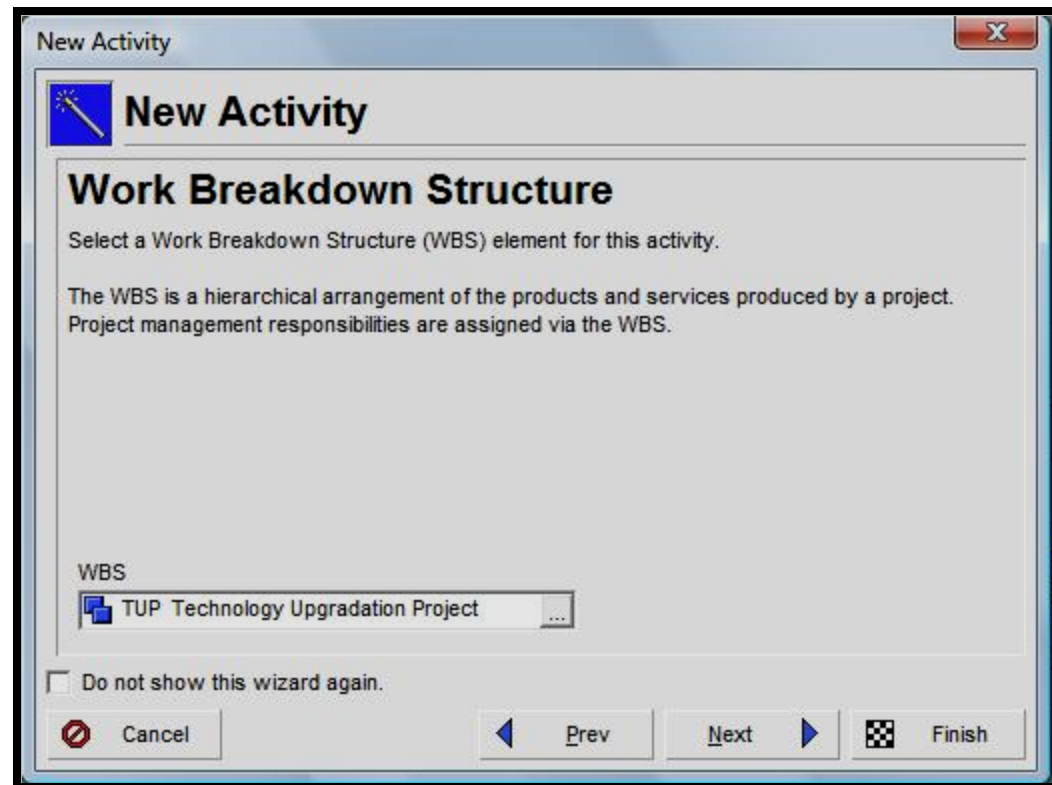
- In the Activity ID field, type <A1000>
    - In the Activity Name field, type <Project Kick-off>
    - Click Next

# Adding Activities Using Activity Wizard

- Exercise

- Steps

- In the WBS field, click Browse
    - Select a WBS, TUP – Technology Upgradation Project, and click Assign button
    - Click Next



# Activity Type














- ***Activity type controls how an activity's duration dates are calculated***
- Select the Activity Type according to the activity's function in the project and the calendar that should be used for the activity during scheduling
  - Start Milestone
  - Finish Milestone
  - Task Dependent
  - Resource Dependent
  - Level of Effort
  - WBS Summary

# Activity Type

- ***Start Milestone*** – This type is typically used to mark the beginning of a phase or to communicate project deliverables.
  - Zero-duration activity
  - Only has a start date
  - You can assign constraints, steps, expenses, work products, and documents
  - You can assign a primary resource
  - You cannot assign roles
- ***Finish Milestone*** – This type is typically used to mark the end of a phase or to communicate project deliverables.
  - Zero-duration activity
  - Only has a finish date
  - You can assign constraints, steps, expenses, work products, and documents
  - You can assign a primary resource
  - You cannot assign roles

# Activity Type














- **Task Dependent** – This type is typically used when the work needs to be accomplished in a given time frame, regardless of the assigned resources' availability.
  - The activity's resources are scheduled to work according to the activity calendar
  - Duration is determined by the assigned calendar's

Activity Calendar	Monday	Tuesday	Wednesday	Thursday	Friday
Resource Calendar 1					
Resource Calendar 2					
Resource Calendar 3					
<b>Task Dependent</b>	<b>X</b>	<b>X</b>			

**2 Day (X) Activity**

# Activity Type

- **Resource Dependent** – This type is typically used when multiple resources assigned to the same activity can work independently.
  - The activity's resources are scheduled according to the individual resource's calendar
  - Duration is determined by the availability of the resources assigned to work on the activity.

Activity Calendar	Monday	Tuesday	Wednesday	Thursday	Friday
Resource Calendar 1					
Resource Calendar 2					
Resource Calendar 3					
Task Dependent	X	X			
Resource Dependent	X	X	X		

**2 Day (X) Activity**

# Activity Type

- ***Level of Effort*** – This type is typically used for ongoing tasks dependent on other activities.
  - Duration is determined by its predecessor and successor activities, and its assigned calendar
  - Examples include clerical work, a security guard and meetings
  - You cannot assign constraints
- ***WBS Summary*** – This type is used to summarize a WBS level.
  - The WBS summary activity comprises a group of activities that share a common WBS level
  - The dates calculated on a WBS summary activity are based on the earliest start date of the activities in the group and the latest finish date of these activities
  - You cannot assign constraints



# Activity Decomposition

- Activities need to be decomposed to sufficient detail so as to provide effective basis for:
  - Estimating
  - Scheduling
  - Executing
  - Monitoring
  - Control
- *Hourly rules*
  - 4 to 40 hour rule
  - 8 to 80 hour rule

4 → 40

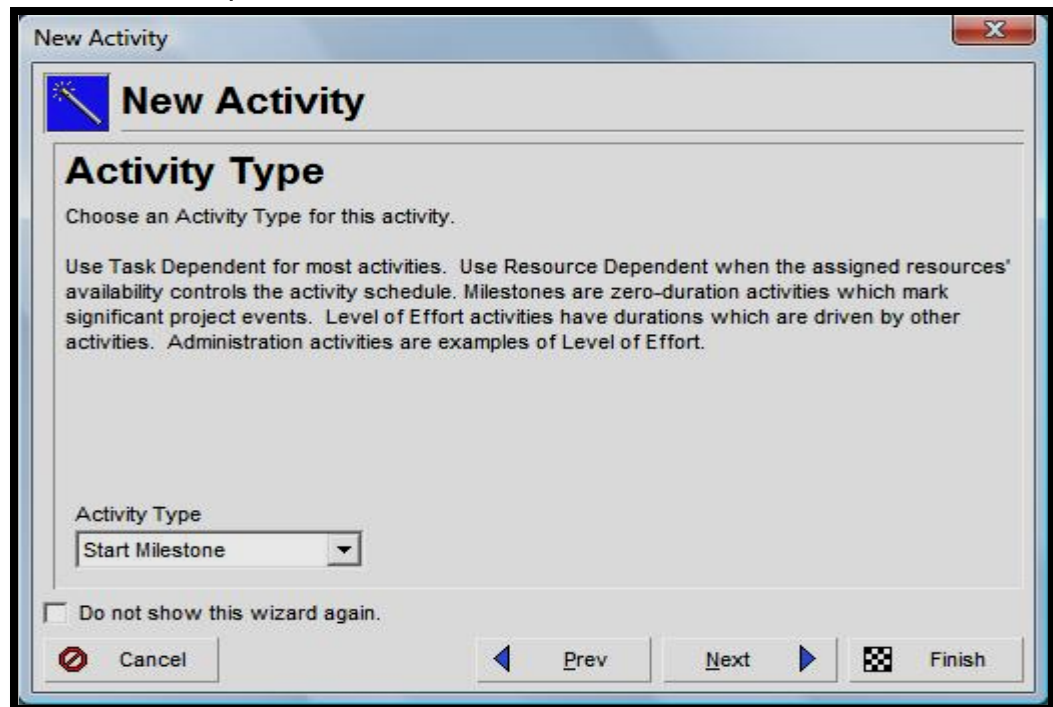
8 → 80

# Activity Type Using Activity Wizard

- Exercise

- Steps

- In the Activity drop-down list, select Start Milestone
    - Click Next
    - Verify No, continue is selected, and then click Next
    - Verify No, thanks is selected, and then click Next



# Completing New Activity Wizard

- Exercise

- Steps

- Make check <do not show this wizard again>
    - When prompted, click Ok
    - Click Finish

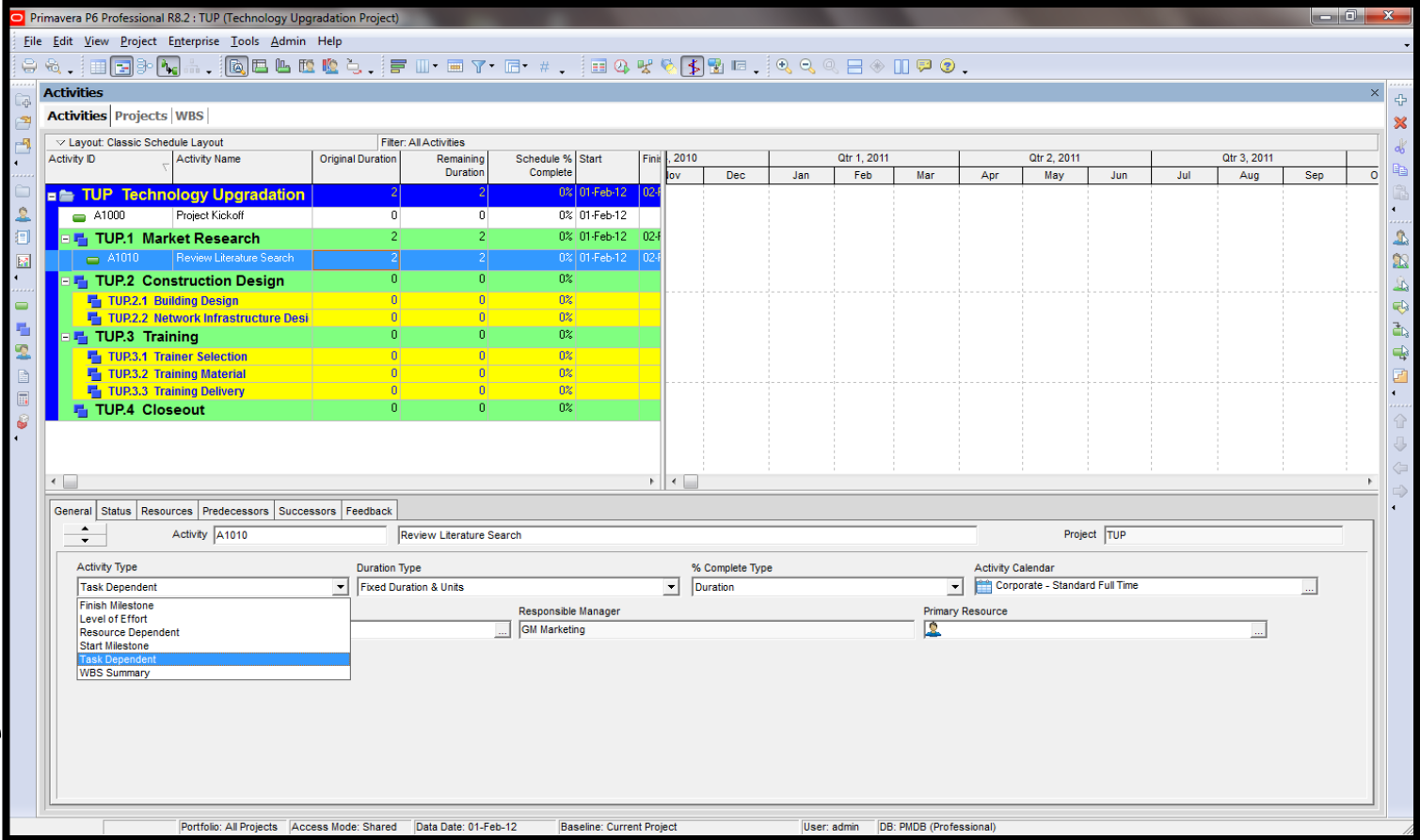


# Adding An Activity via Activity Details

- You can use the *Activity Details* tab to add an activity, and then can enter additional information about the activity.
  
- Exercise
  - Steps
    - Select a WBS element, Market Research
    - In the Edit Menu, click Add, or Right-click and then click Add

# General Tab

- Use the *General Tab* to assign basic information about an activity.

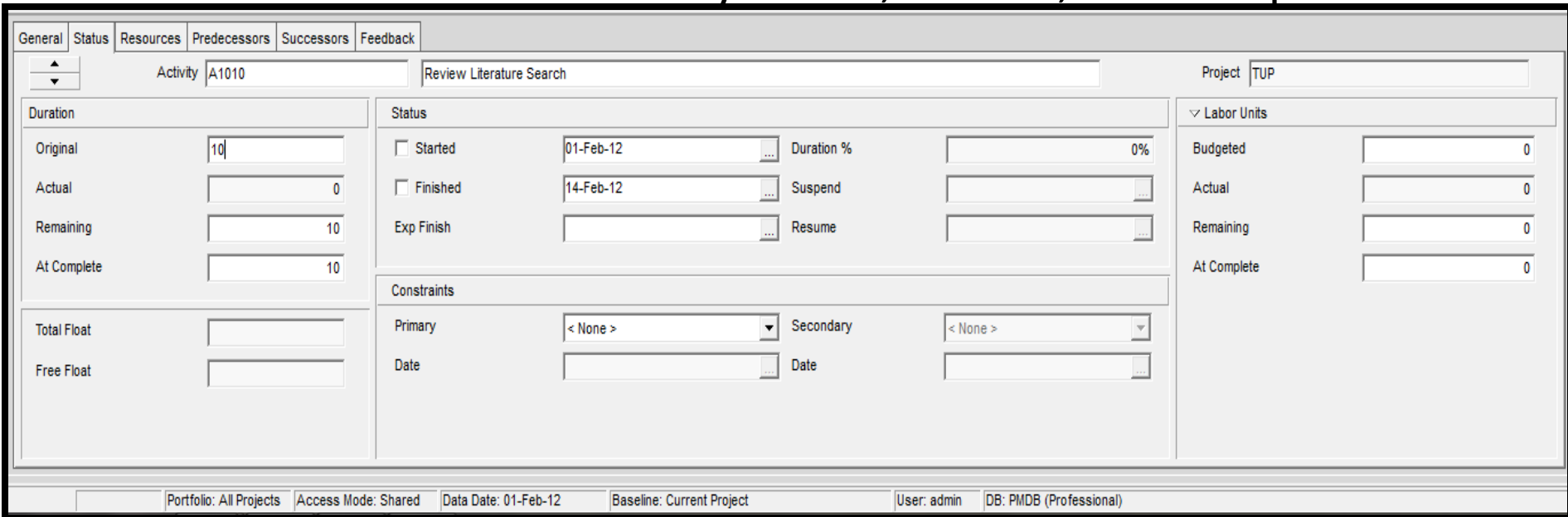


- Exercise
- Steps

- In General Tab, verify the Activity ID <A1010>
- In the Activity field, type <Review Literature Search>
- In the Activity Type drop-down list, verify <Task Dependand>

# Status Tab

- Use the *Status Tab* to define the selected activity's duration, constraints, Start and Finish Dates, Labor and Non-labor Units and Costs, and Material Costs. You can also use the Status Tab to view the selected activity's float, actuals, and completion %.



The screenshot displays the 'Status Tab' for activity 'A1010' in the Oracle Primavera P6 software. The interface is organized into several sections:

- Activity Information:** Activity ID 'A1010', Name 'Review Literature Search', and Project 'TUP'.
- Duration Section:**
  - Original: 10
  - Actual: 0
  - Remaining: 10
  - At Complete: 10
  - Total Float: (empty)
  - Free Float: (empty)
- Status Section:**
  - Started: 01-Feb-12, Duration %: 0%
  - Finished: 14-Feb-12, Suspend: (empty)
  - Exp Finish: (empty), Resume: (empty)
- Constraints Section:**
  - Primary: <None>, Secondary: <None>
  - Date: (empty), Date: (empty)
- Labor Units Section:**
  - Budgeted: 0
  - Actual: 0
  - Remaining: 0
  - At Complete: 0

At the bottom of the window, the status bar shows: Portfolio: All Projects, Access Mode: Shared, Data Date: 01-Feb-12, Baseline: Current Project, User: admin, DB: PMDB (Professional).

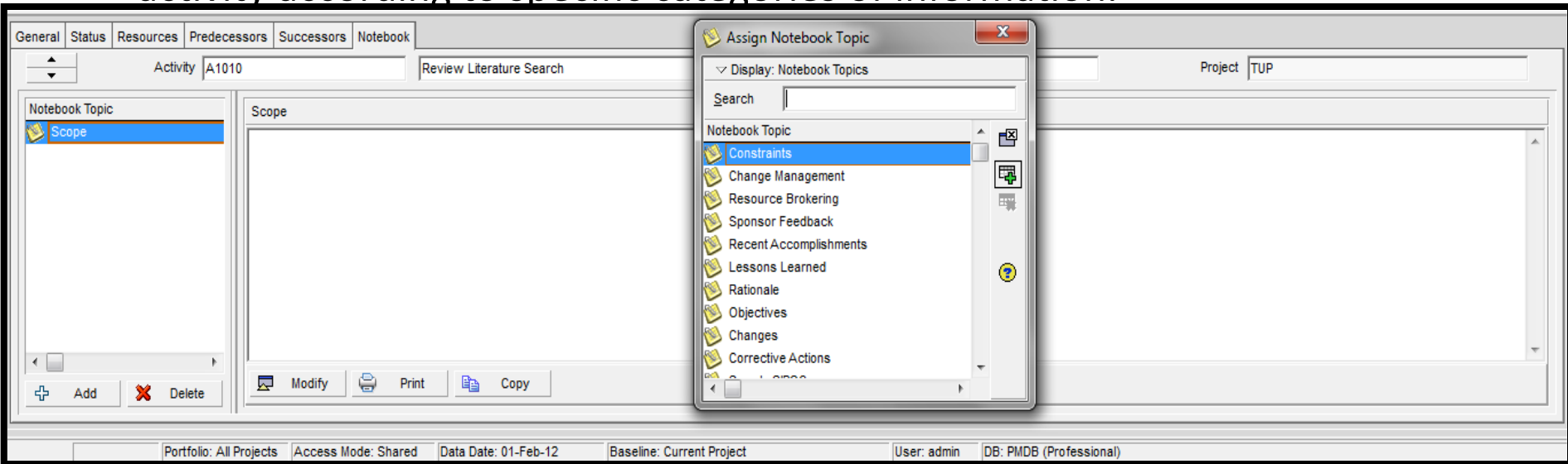
## • Exercise

### • Steps

- *In the Activity Details, click the Status Tab*
- *In the Original Duration field, type <10>, and then press Enter*

# Notebook Tab

- The *Notebook Tab* enables you to assign notes to an activity. Notebook topics are typically instructions or descriptions that further describe the activity according to specific categories of information.



## • Exercise

### • *Steps*

- *Click the Notebook Tab*
- *In the Notebook Topic section, click Add*
- *Select a Notebook topic, Scope and click Assign button*
- *Close the Assign Notebook Topic dialog box*
- *Type a description in Modify section <Literature Review for Design of Building and Network including Internet, Market Survey>*

# Adding an Activity via Column

- You can also use the columns in the Activity Table to add an activity and then enter additional information about it.
- Exercise
  - Steps
    - In the Activity Table, select a WBS band, Market Research
    - Press Insert on your keyboard
    - Verify the Activity ID, <A1020>
    - In the Activity Name column, type <Prepare Inventory & Vendor List>
    - In the Activity Type column, verify Task Dependent
    - In the Original Duration column, type <4>
    - Press Enter on your keyboard



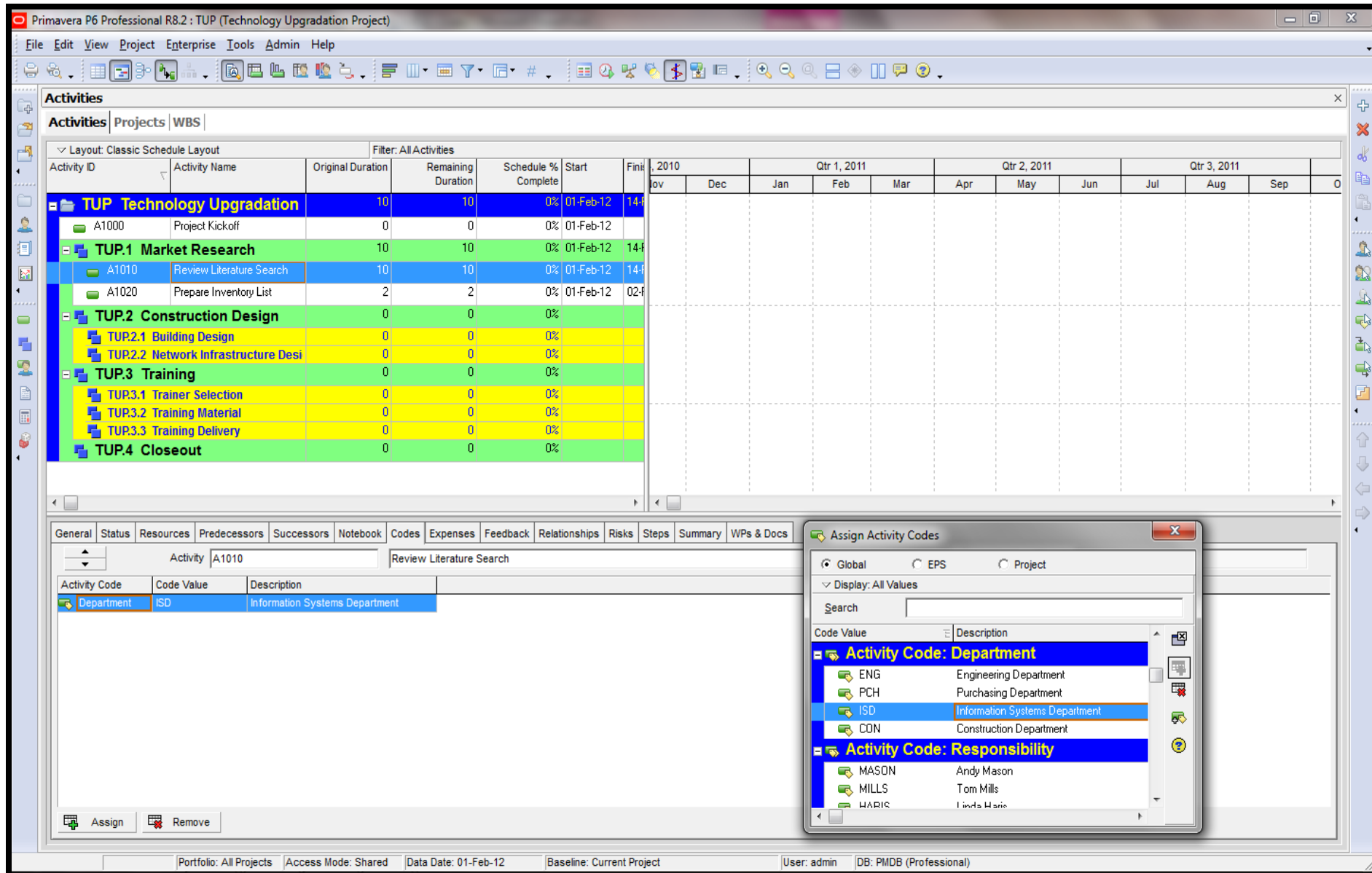
# Activity Codes

- ***Activity Codes enable you to classify and categorize activities according to you organizational and project needs.***
- You can use activity codes to view and roll-up activities in the Activity Table; build reports in the Report Wizard or Report Editor; organize a layout by grouping activities into specific categories; and select and summarize activities.
- Examples include Phase, Area, Site, and Division.
- Activity codes can be defined at three levels
  - ***Global Level*** – Available to all activities in the database
    - Create an unlimited no. of global-level activity codes
    - Organize activities within a project or across the project structure
  - ***EPS Level*** – Available to all activities within the EPS node and its children
    - Create an unlimited no. of EPS-level activity codes
    - Organize activities within a project or across a portion of the EPS
  - ***Project Level*** – Available to activities only in the project in which code is defined
    - Create upto 500 activity codes per project
    - Filter and organize activities based on unique, project-specific requirements

# Assigning Activity Codes to an Activity

- Assign activity code values in the Activities Window
  - Add a column for the activity code in the Activity Table
  - Use the Codes Tab in Activity Details
  
- Exercise
  - Steps
    - Select an activity A1020 – Review Literature Search
    - In the Activity Details, click the Codes tab
    - Click Assign
    - In the Assign Activity Codes dialog box, click the Display Option bar and choose Filter By, All Values
    - Click the Display Option bar and choose Collapse All
    - Expand the Department activity code
    - Within the Department activity code, select an activity code value, ISD – Information Systems, and then click Assign
    - Click Close

# Assigning Activity Codes to an Activity



The screenshot displays the Primavera P6 Professional R8.2 interface for a Technology Upgradation Project. The main window shows a Gantt chart and a table of activities. The 'Activities' window is open, showing a list of activities with columns for Activity ID, Activity Name, Original Duration, Remaining Duration, Schedule % Complete, Start, and Finish. The activities are organized into a hierarchy: TUP Technology Upgradation (10 days), TUP.1 Market Research (10 days), TUP.2 Construction Design (0 days), TUP.3 Training (0 days), and TUP.4 Closeout (0 days). The 'Assign Activity Codes' dialog box is open, showing a list of codes and their descriptions. The 'Department' code is selected, and the 'Information Systems Department' is highlighted.

Activity ID	Activity Name	Original Duration	Remaining Duration	Schedule % Complete	Start	Finish
<b>TUP Technology Upgradation</b>						
A1000	Project Kickoff	0	0	0%	01-Feb-12	14-Feb-12
<b>TUP.1 Market Research</b>						
A1010	Review Literature Search	10	10	0%	01-Feb-12	14-Feb-12
A1020	Prepare Inventory List	2	2	0%	01-Feb-12	02-Feb-12
<b>TUP.2 Construction Design</b>						
TUP.2.1	Building Design	0	0	0%		
TUP.2.2	Network Infrastructure Desi	0	0	0%		
<b>TUP.3 Training</b>						
TUP.3.1	Trainer Selection	0	0	0%		
TUP.3.2	Training Material	0	0	0%		
TUP.3.3	Training Delivery	0	0	0%		
<b>TUP.4 Closeout</b>						
TUP.4		0	0	0%		

Code Value	Description
<b>Activity Code: Department</b>	
ENG	Engineering Department
PCH	Purchasing Department
ISD	Information Systems Department
CON	Construction Department
<b>Activity Code: Responsibility</b>	
MASON	Andy Mason
MILLS	Tom Mills
HARIC	Linda Haric

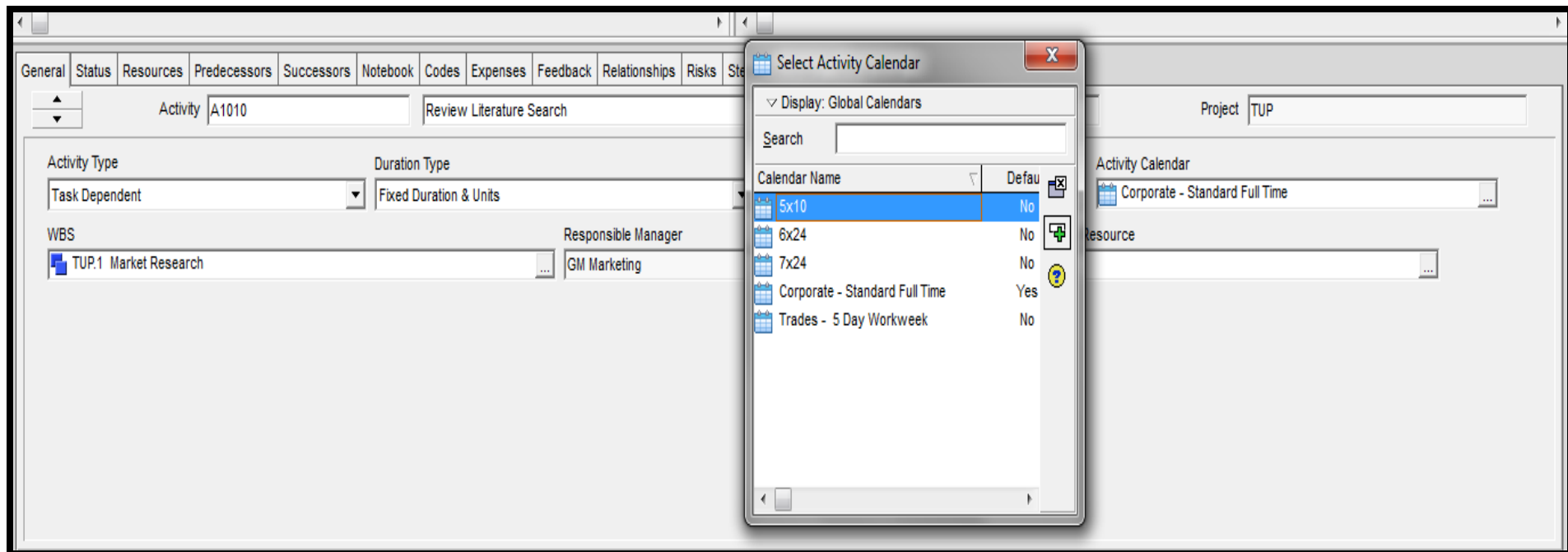
# Calendar Assignments

- *Calendars* can be created and assigned to each activity and resource.
- Calendar assignments are used to schedule activities and level resources.
- An unlimited no. of calendars can be created.
- The Activity Type determines whether the activity calendar or resource calendar is used during scheduling.
- There are three calendar types:
  - *Global Calendar*
    - Contains calendars that can be used by all projects in the database
    - Available for all resources and activities in the database
  - *Resource Calendar*
    - Contains separate calendars for each resource
  - *Project Calendar*
    - Contains a separate pool of calendars for each project
    - Available for the current project only

# Calendar Assignments

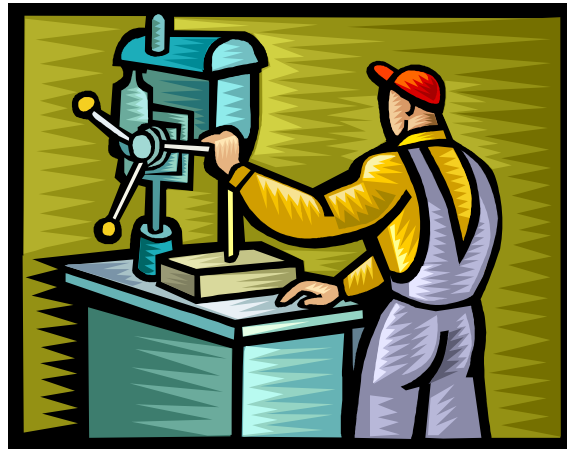
- Exercise
- Steps

- Select and Activity, A1020
- Click the General Tab
- In the Activity Calendar field, click Browse button
- View the available global calendars, and then close the dialog



# WORKSHOP

## Adding Activities



# Exercise: Add Activities



WBS	Activity ID	Activity Name	Activity Type	Original Duration	Calendar
<b>Technology Upgradation Project</b>				10	
TUP	A1000	Project Kick-off	Start Milestone	0	Corporate – Standard Full Time
TUP	A1250	Design Handover (Project Completion)	Finish Milestone	0	Corporate – Standard Full Time
<b>Market Research</b>				10	
TUP.MR	A1010	Review Literature Search	Task Dependent	10	Corporate – Standard Full Time
TUP.MR	A1020	Prepare Inventory & Vendor List	Task Dependent	4	Corporate – Standard Full Time
TUP.MR	A1030	Perform Market Survey	Task Dependent	10	Corporate – Standard Full Time
TUP.MR	A1040	Formulate Survey Findings	Task Dependent	5	Corporate – Standard Full Time
TUP.MR	A1050	Perform SWOT Analysis	Task Dependent	3	Corporate – Standard Full Time
TUP.MR	A1060	Document Results and Handover	Task Dependent	2	Corporate – Standard Full Time

# Exercise: Add Activities



WBS	Activity ID	Activity Name	Activity Type	Original Duration	Calendar
<b>Construction Design</b>				10	
<b>Building Design</b>				6	
TUP.CD.BLD	A1070	Prepare Concept Design	Task Dependent	10	13h/d
TUP.CD.BLD	A1080	Prepare Tender Documents	Task Dependent	10	13h/d
TUP.CD.BLD	A1090	Develop 100% Construction Document	Task Dependent	10	13h/d
<b>Network Infrastructure Design</b>				10	
TUP.CD.NID	A1100	Prepare LAN Layout	Task Dependent	10	Corporate – Standard Full Time
TUP.CD.NID	A1110	Prepare Domain/ Hardware Layout	Task Dependent	10	Corporate – Standard Full Time
TUP.CD.NID	A1120	Handover Network Design	Finish Milestone	0	Corporate – Standard Full Time



# Exercise: Adding Activities



WBS	Activity ID	Activity Name	Activity Type	Original Duration	Calendar
<b>Training</b>				10	
<b>Trainer Selection</b>				10	
TUP.TR.TRS	A1130	Prepare & Review RFP/ Advertisement	Task Dependent	5	Corporate – Standard Full Time
TUP.TR.TRS	A1140	Open Technical Bids	Finish Milestone	0	Corporate – Standard Full Time
TUP.TR.TRS	A1150	Review and Score Technical Bids	Task Dependent	10	Corporate – Standard Full Time
TUP.TR.TRS	A1160	Open Financial Bids	Finish Milestone	0	Corporate – Standard Full Time
TUP.TR.TRS	A1170	Negotiate with Bidders	Task Dependent	5	Corporate – Standard Full Time
TUP.TR.TRS	A1180	Award Contract	Finish Milestone	0	Corporate – Standard Full Time
<b>Training Material</b>				8	
TUP.TR.TRM	A1190	Prepare and Review Draft Material	Task Dependent	8	Corporate – Standard Full Time
TUP.TR.TRM	A1200	Finalize Training Material with Client	Task Dependent	5	Corporate – Standard Full Time
TUP.TR.TRM	A1210	Print Training Material	Task Dependent	4	Corporate – Standard Full Time

# Exercise: Adding Activities



WBS	Activity ID	Activity Name	Activity Type	Original Duration	Calendar
<b>Training Delivery</b>				8	
TUP.TR.TRD	A1220	Deliver Training Course	Task Dependent	5	Corporate – Standard Full Time
TUP.TR.TRD	A1230	Prepare & Submit Assessment Report	Task Dependent	8	Corporate – Standard Full Time
<b>Closeout</b>				10	
TUP.CO	A1240	Prepare Closeout Documentation	Task Dependent	10	Corporate – Standard Full Time

# Lesson Review

- There are four ways to add an activity to a project:
  - In the Command Bar, click Add
  - Press Insert on keyboard
  - Right-click
  - Click Add
- You can also enable the New Activity Wizard to walk through the steps of adding activity information
- Activity Type controls how an activity dates are calculated
- Use steps to create a checklist for the activity, and mark step completion
- Use Activity Codes to group activities by a common attribute. Create an unlimited no. of code values for each activity code.
  - The Global level codes can be assigned to all activities in the database
  - EPS level codes can be assigned to all activities in the EPS and EPS children
  - Project level activity codes can be assigned to activities in the projects in which they are created

# Creating Relationships

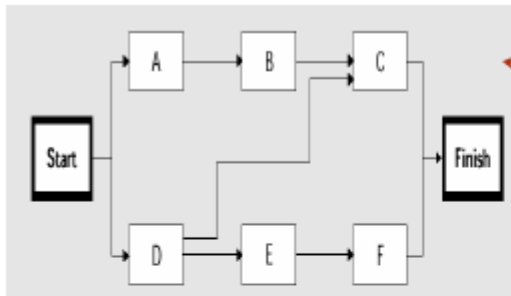
## Lesson 8

# Creating Relationships

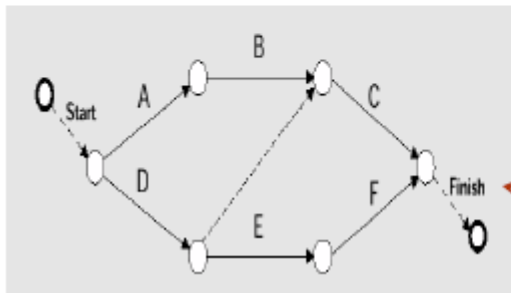
- Objectives
  - Create a Network Logic Diagram
  - Differentiate Between the Four Relationship Types
  - Create Relationships in the Activity Network
  - Create Relationships in Activity Details

# Network Logic Diagram

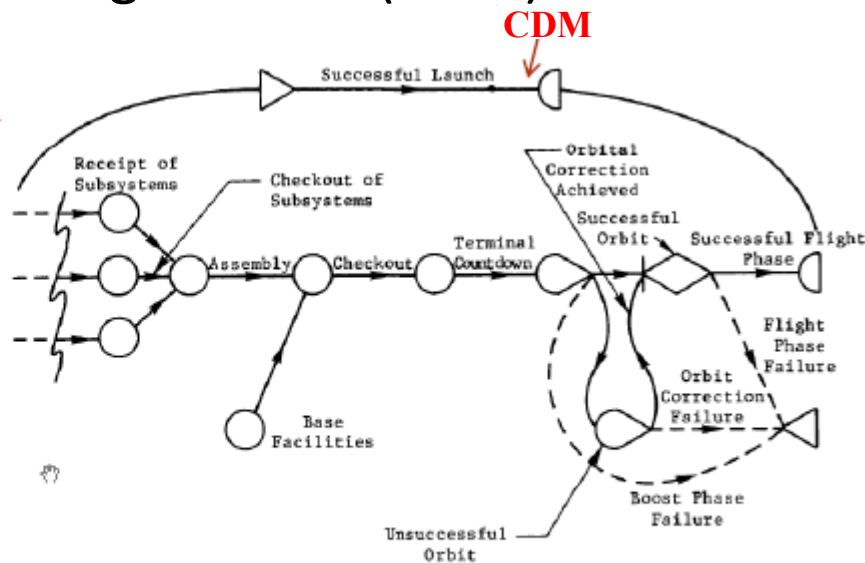
- ***A network logic diagram is a logical representation of all activities in a project showing their dependency relationships.***
  - Precedence Diagramming Method (PDM, AON)
  - Arrow On Arrow Diagramming Method (AOA)
  - Conditional Diagramming Method (CDM)



← PDM



← ADM



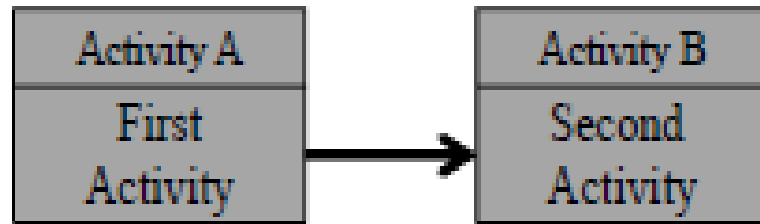
CDM

# Network Logic Diagram

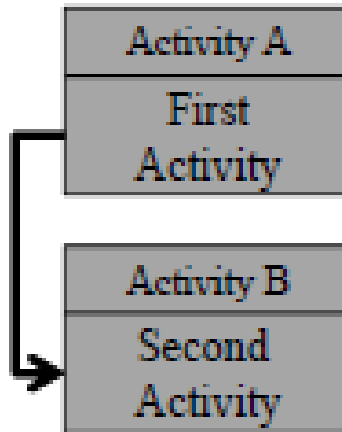
- Precedence Diagramming Method
  - ***A method of constructing a project network diagram using nodes to represent the activities and connecting them with arrows that show the dependencies.***
- This technique is also called activity-on-node (AON)
- A box or rectangle represents an activity
- Lines with arrows connect the boxes and represent the logical relationships between the activities
  - *Predecessor*: Controls the start or finish of another activity
  - *Successor*: Depends on the start or finish of another activity

# Relationship Types

- There are *four relationship types*.
- In the following diagram, activity A represents the predecessor and activity B represents the successor.
  - *Finish-to-Start (FS)* – When A finishes, B can start



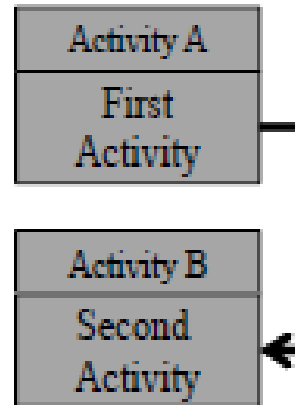
- *Start-to-Start (SS)* – When A starts, B can start



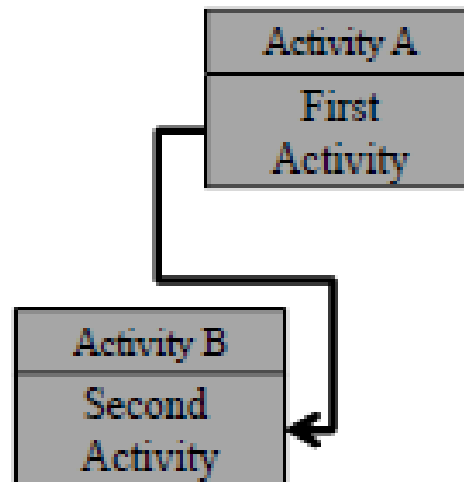


# Relationship Types

- *Finish-to-Finish (FF)* – When A finishes, B can finish



- *Start-to-Finish (SF)* – When A starts, B can finish



# Relationships with Lag

- ***Lag specifies an offset or delay between an activity and its successor.*** It can be added to any type of relationship and have a positive or a negative value.
- Lag is scheduled based on the calendar selected in the GENERAL Tab in the Schedule Options dialog box.
  - Tools Menu → Schedule → Options
- There are four calendar options for scheduling lag
  - Predecessor activity calendar
  - Successor activity calendar
  - 24-hour calendar
  - Project default calendar

# Creating Relationship using Activity Network

- The *Activity Network* is useful when sequencing activities because it displays the activities graphically as you create relationships.
- Click Zoom to enlarge the size of activities viewable in the network.
- Exercise
  - Steps
    - Confirm you are in Activities Window (Directory bar, click Activities)
    - In the Layout Option bar, click Layout, Open
    - Select a Layout, Critical Path – Logic View, and then click Open
    - Select a WBS Code, TUP
    - Click Zoom in on activities in the Activity Network
    - Select an activity, A1000 – Project Kick-off
    - In Activity Details, click Relationship tab

# Creating Relationship using Activity Network



Primavera P6 Professional R8.2: TUP (Technology Upgradation Project)

File Edit View Project Enterprise Tools Admin Help

Activities

Activities | Projects | WBS

Layout: Critical Path - Logic view Filter: All Activities

WBS Code WBS Name

- TUP Technology Upgradation Project
- TUP.1 Market Research
- TUP.2 Construction
- TUP.2.1 Building Infrastructure
- TUP.2.2 Network
- TUP.3 Training
- TUP.3.1 Trainer Services
- TUP.3.2 Training Infrastructure
- TUP.3.3 Training Infrastructure
- TUP.4 Closeout

TUP Technology Upgradation Project

A1280 Handover Design (Project Completion)

A1000 Project Kickoff

TUP.1 Market Research

A1070 Document Results and Handover

A1060 Perform SWOT Analysis

A1050 Formulate Survey Findings

A1040 Perform Market Survey

General Status Resources Predecessors Successors Codes Notebook Steps Feedback WPs & Docs Expenses Summary Relationships Risks

Activity: A1000 Project Kickoff Project: TUP

Predecessors							Successors							
Project ID	WBS	Activity ID	Activity Name	Relations	Lag	Activity Status	Project ID	WBS	Activity ID	Activity Name	Relations	Lag	Activity Status	Primary Res

Assign Remove GoTo

Portfolio: All Projects Access Mode: Shared Data Date: 01-Feb-12 Baseline: Current Project User: admin DB: PMDB (Professional)

# Creating a Start-to-Start Relationship

- You can create a relationship between activities by clicking and dragging your mouse between the two activities:
  - The left-edge of the activity represents the start of the activity
  - The right-edge of the activity represents the finish of the activity
  
- Exercise
  - Steps
    - To create a SS relationship, place the mouse pointer to the left-edge of an activity, A1000-Project kickoff
    - Click and drag the mouse to the left-edge of a successor activity, A1010-Review Literature Search

# Creating a Start-to-Start Relationship



Primavera P6 Professional R8.2: TUP (Technology Upgradation Project)

File Edit View Project Enterprise Tools Admin Help

Activities | Projects | WBS

Layout: Critical Path - Logic view Filter: All Activities

WBS Code | WBS Name

- TUP Technology Upgradation Project
  - TUP.1 Market Research
    - TUP.2.1 Building I
    - TUP.2.2 Network
    - TUP.3 Training
      - TUP.3.1 Trainer S
      - TUP.3.2 Training I
      - TUP.3.3 Training I
    - TUP.4 Closeout

TUP Technology Upgradation Project

A1280 Handover Design (Project Completion)

A1000 Project Kickoff

TUP.1 Market Research

A1010 Review Literature Search

A1060 Perform SWOT Analysis

A1050 Formulate Survey Findings

A1040 Perform Market Survey

General Status Resources Predecessors TUP.1 Market Research Notebook Steps Feedback WPs & Docs Expenses Summary Relationships Risks

Activity A1010 Review Literature Search Project TUP

Predecessors							Successors							
Project ID	WBS	Activity ID	Activity Name	Relations	Lag	Activity Status	Project ID	WBS	Activity ID	Activity Name	Relations	Lag	Activity Status	Primary Res
TUP	TUP Technology	A1000	Project Kickoff	SS	0	Not Started								

Assign Remove GoTo

Portfolio: All Projects Access Mode: Shared Data Date: 01-Feb-12 Baseline: Current Project User: admin DB: PMDB (Professional)

# Creating Relationships in Activity Details



- You can also use *Relationships Tab* to create relationships. When creating a relationship in Activity Details, the default relationship type is Finish-to-Start (FS).
- Activities in the Assign Successor dialog box can be grouped and sorted in a variety of ways, including by EPS and by List. In the Display Options bar, click Group and Sort By to view the options
- Exercise
  - Steps
    - Select an activity A1010-Review Literature Search
    - In the Successor pane within Relationships tab, click Assign
    - Select an activity A1020-Prepare Inventory List and then click Assign button
    - Close the Assign Successor dialog box

# Creating Relationships in Activity Details



Primavera P6 Professional R8.2 : TUP (Technology Upgradation Project)

File Edit View Project Enterprise Tools Admin Help

**Activities** | Projects | WBS

Layout: Critical Path - Logic view Filter: All Activities

WBS Code	WBS Name
TUP	Technolo
TUP.1	Market R
TUP.2	Construc
TUP.2.1	Building I
TUP.2.2	Network
TUP.3	Training
TUP.3.1	Trainer S
TUP.3.2	Training I
TUP.3.3	Training I
TUP.4	Closeout

TUP Technology Upgradation Project

TUP.1 Market Research

Vendor List → A1020 Prepare Inventory List

Activity: A1020 Prepare Inventory List

Project ID	WBS	Activity ID	Activity Name	Relations	Lag	Activity Status
TUP	TUP.1 Market R	A1010	Review Literature Search	FS	0	Not Started

Predecessors

Successors

Assign Remove GoTo

Assign Remove GoTo

Portfolio: All Projects Access Mode: Shared Data Date: 01-Feb-12 Baseline: Current Project User: admin DB: PMDB (Professional)

Assign Predecessors

Display: All Activities

Search

Activity ID	Activity Name	Activity Status
<b>Technology Group</b>		
<b>Services Division</b>		
<b>Donor/Private Sector Projects</b>		
<b>Technology Upgradation Project</b>		
A1000	Project Kickoff	Not Started
A1280	Handover Design (Project Completion)	Not Started
<b>Market Research</b>		
A1010	Review Literature Search	Not Started
A1020	Prepare Inventory List	Not Started
A1030	Prepare Vendor List	Not Started
A1040	Perform Market Survey	Not Started
A1050	Formulate Survey Findings	Not Started
A1060	Perform SWDT Analysis	Not Started
A1070	Document Results and Handover	Not Started

Assign Remove GoTo



# Using GoTo Feature

- Click  on the Relationship tab to change the selection in the Activity Table to the activity highlighted in the successor or predecessor pane.

# Assigning Lag

- Although the default relationship type is FS with zero days of lag, but still you can use columns on the Relationships tab to make adjustments to the relationship type or to assign lag.
  
- Exercise
  - Steps
    - Select an Activity, A1010-Review Literature Search from Activity Network
    - In the Successor pane, select an activity A1030-Prepare Vendor List
    - Type the number of days of lag <1>
    - Press Enter

# Assigning Lag



Primavera P6 Professional R8.2: TUP (Technology Upgradation Project)

File Edit View Project Enterprise Tools Admin Help

Activities | Projects | WBS

Layout: Critical Path - Logic view Filter: All Activities

WBS Code WBS Nar

- TUP Technology
- TUP.1 Market R
- TUP.2 Construc
- TUP.2.1 Building I
- TUP.2.2 Network
- TUP.3 Training
- TUP.3.1 Trainer S
- TUP.3.2 Training I
- TUP.3.3 Training I
- TUP.4 Closeout

TUP Technology Upgradation Project

A1280 Handover Design (Project Completion)

A1000 Project Kickoff

TUP.1 Market Research

A1010 Review Literature Search

A1060 Perform SWOT Analysis

A1050 Formulate Survey Findings

A1040 Perform Market Survey

General Status Resources Predecessors Successors Codes Notebook Steps Feedback WPs & Docs Expenses Summary Relationships Risks

Activity A1010 Review Literature Search Project TUP

Predecessors

Project ID	WBS	Activity ID	Activity Name	Relations	Lag	Activity Status	P
TUP	TUP Technology	A1000	Project Kickoff	SS	0	Not Started	


Successors

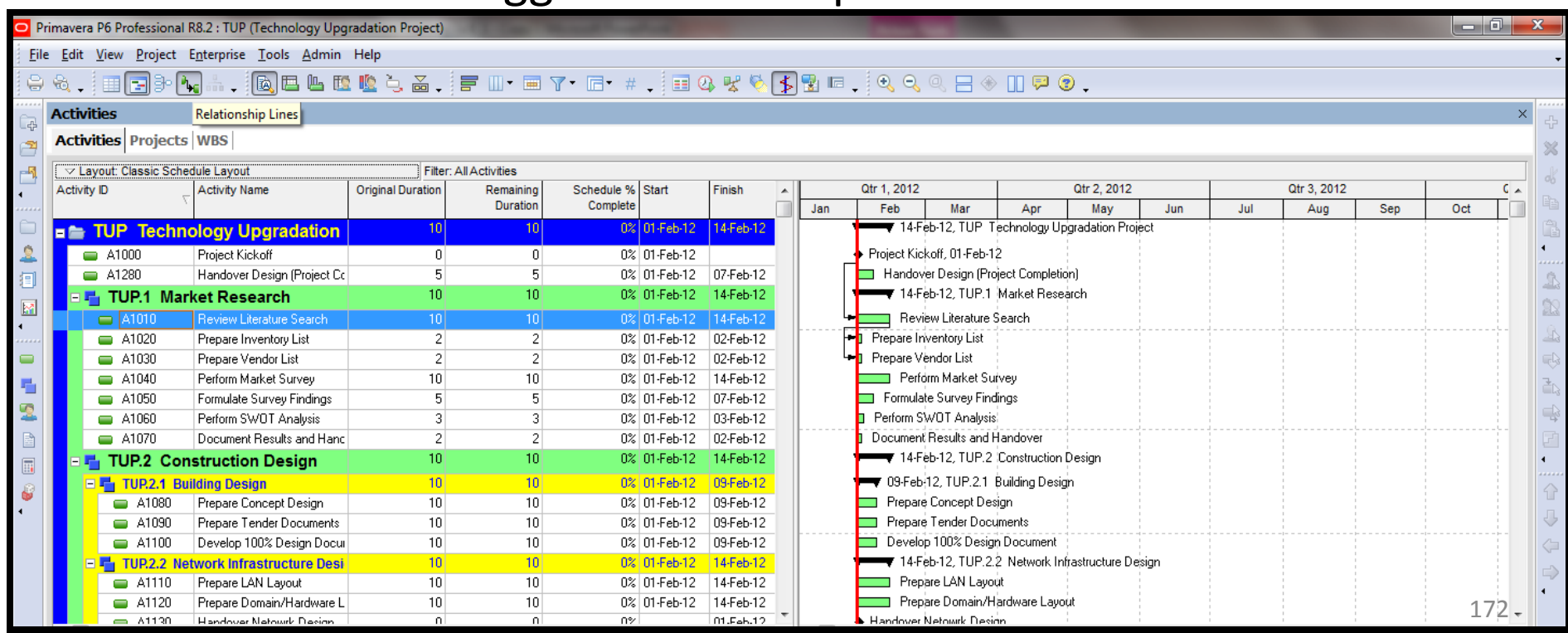
Project ID	WBS	Activity ID	Activity Name	Relations	Lag	Activity Status	Primary Res
TUP	TUP.1 Market R	A1020	Prepare Inventory List	FS	0	Not Started	
TUP	TUP.1 Market R	A1030	Prepare Vendor List	FS	1	Not Started	

Assign Remove GoTo

Portfolio: All Projects Access Mode: Shared Data Date: 01-Feb-12 Baseline: Current Project User: admin DB: PMDB (Professional)

# Viewing Relationship in Gantt Chart

- You can also view/ modify relationships in the Activity Table and Gantt Chart:
  - *Activity Table* – You can see Predecessor and Successor columns
  - *Gantt Chart* – Click the Relationship Lines icon  on the Toolbar to toggle relationship lines on and off.



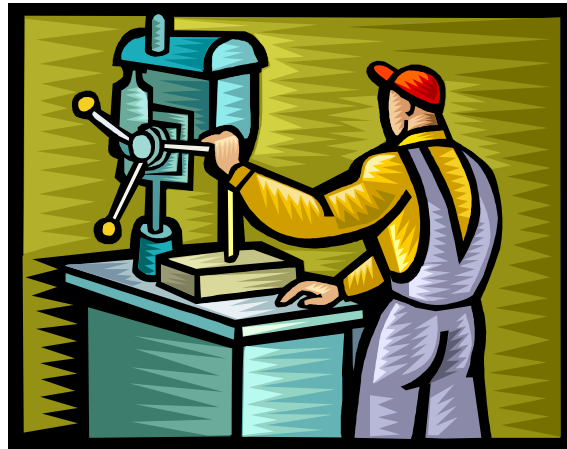
The screenshot displays the Primavera P6 Professional R8.2 interface for a project named 'TUP (Technology Upgradation Project)'. The 'Activities' window is open, showing a table of activities and their relationships. The 'Relationship Lines' toolbar icon is highlighted.

Activity ID	Activity Name	Original Duration	Remaining Duration	Schedule % Complete	Start	Finish
<b>TUP Technology Upgradation</b>						
A1000	Project Kickoff	0	0	0%	01-Feb-12	14-Feb-12
A1280	Handover Design (Project Cc	5	5	0%	01-Feb-12	07-Feb-12
<b>TUP.1 Market Research</b>						
A1010	Review Literature Search	10	10	0%	01-Feb-12	14-Feb-12
A1020	Prepare Inventory List	2	2	0%	01-Feb-12	02-Feb-12
A1030	Prepare Vendor List	2	2	0%	01-Feb-12	02-Feb-12
A1040	Perform Market Survey	10	10	0%	01-Feb-12	14-Feb-12
A1050	Formulate Survey Findings	5	5	0%	01-Feb-12	07-Feb-12
A1060	Perform SWOT Analysis	3	3	0%	01-Feb-12	03-Feb-12
A1070	Document Results and Hanc	2	2	0%	01-Feb-12	02-Feb-12
<b>TUP.2 Construction Design</b>						
<b>TUP.2.1 Building Design</b>						
A1080	Prepare Concept Design	10	10	0%	01-Feb-12	09-Feb-12
A1090	Prepare Tender Documents	10	10	0%	01-Feb-12	09-Feb-12
A1100	Develop 100% Design Docu	10	10	0%	01-Feb-12	09-Feb-12
<b>TUP.2.2 Network Infrastructure Desi</b>						
A1110	Prepare LAN Layout	10	10	0%	01-Feb-12	14-Feb-12
A1120	Prepare Domain/Hardware L	10	10	0%	01-Feb-12	14-Feb-12
A1130	Handover Network Design	0	0	0%	01-Feb-12	01-Feb-12

The Gantt Chart on the right shows the project schedule from January to October 2012. It displays the hierarchy of activities, including 'TUP Technology Upgradation Project', 'TUP.1 Market Research', and 'TUP.2 Construction Design'. The chart uses color-coded bars to represent the duration of each activity, with relationship lines connecting them to show dependencies.

# WORKSHOP

## Creating Relationships



# Exercise: Create Relationships

Activity ID	Activity Name	Original Duration	Predecessors	Relationship Type
A1000	Project Kick-off	0		
A1010	Review Literature Search	10	A1000	SS
A1020	Prepare Inventory & Vendor List	4	A1010	FS with Lag 1
A1030	Perform Market Survey	10	A1020	FS
A1040	Formulate Survey Findings	5	A1030	FS
A1050	Perform SWOT Analysis	3	A1040	FS
A1060	Document Results and Handover	2	A1050	FS
A1070	Prepare Concept Design	10	A1060	FS
A1080	Prepare Tender Documents	10	A1070	FS
A1090	Develop 100% Construction Document	10	A1080	FS
A1100	Prepare LAN Layout	10	A1090	FS
A1110	Prepare Domain/ Hardware Layout	10	A1100	FS
A1120	Handover Network Design	0	A1110	FS

# Exercise: Create Relationships



Activity ID	Activity Name	Original Duration	Predecessors	Relationship Type
A1130	Prepare and Review RFP/ Advertisement	5	A1070	SS with Lag 10
A1140	Open Technical Bids	0	A1130	FS with Lag 5
A1150	Review and Score Technical Bids	10	A1140	FS
A1160	Open Financial Bids	0	A1150	FS
A1170	Negotiate with Bidders	5	A1160	FS
A1180	Award Contract	0	A1170	FS
A1190	Prepare and Review Draft Material	8	A1180	FS
A1200	Finalize Training Material with Client	5	A1190	FS
A1210	Print Training Material	4	A1200	FS
A1220	Deliver Training Course	5	A1210	FS
A1230	Prepare & Submit Assessment Report	8	A1220	FS
A1240	Prepare Closeout Documentation	10	A1230	FS
A1250	Design Handover (Project Completion)	0	A1240	FS

# Lesson Review

- Use Precedence Diagramming Method (PDM) to create a Network Logic Diagram and to show relationships between activities. Create logical relationships between activities by specifying predecessor and successor activities.
- Four relationship types exist, namely: Finish-to-Start, Start-to-Start, Finish-to-Finish, and Start-to-Finish. The default relationship type is Finish-to-Start (FS).
- Use Lag to specify a delay between an activity and its successor.
- You can create relationships in Activity Network via a graphical display, or in the Relationships tab in Activity Details.



# Scheduling

## Lesson 9

# Scheduling

- Objectives
  - Perform a forward and backward pass
  - Describe float and its impact on a schedule
  - Identify loops and open ends
  - Calculate a schedule
  - Analyze the scheduling log report

# Critical Path Method Scheduling

- The *Critical Path Method (CPM)* scheduling technique is utilized to calculate project schedules. CPM uses activity durations and relationships between activities to calculate schedule dates.
- This calculation is done in two passes through the activities in a project:
  - Forward Pass
  - Backward Pass
- **Critical Path**
  - The critical path is the series of activities that determines a project's completion date.
  - The duration of activities on the critical path controls the duration of the entire project. A delay to any of these activities will delay the Finish Date of the entire project.
  - Critical activities are defined by either the Total Float or the Longest Path in the project network.

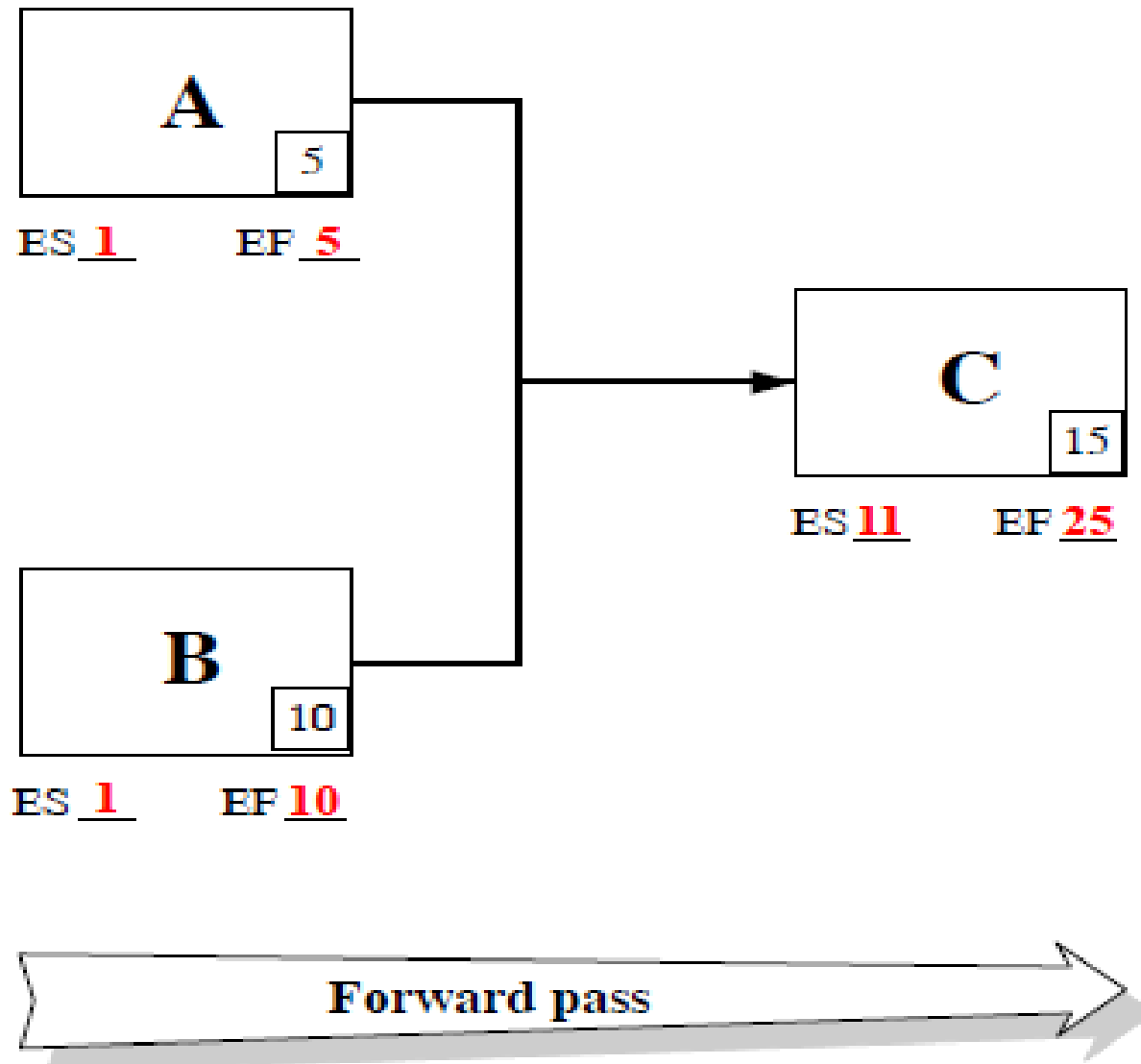
# Data Date

- The *Data Date* is the date that is utilized as the starting point for schedule calculations. It is the date used to schedule all remaining work.
- Duration the Planning Phase the data date should match the project Start Date.

# Scheduling – Forward Pass

- The *forward pass* calculates an activity's early dates
- Early dates are the earliest times an activity can start and finish once its predecessors have been completed
- The calculation begins with the activities without predecessors
- $\text{Early Start (ES)} + \text{Duration} - 1 = \text{Early Finish (EF)}$

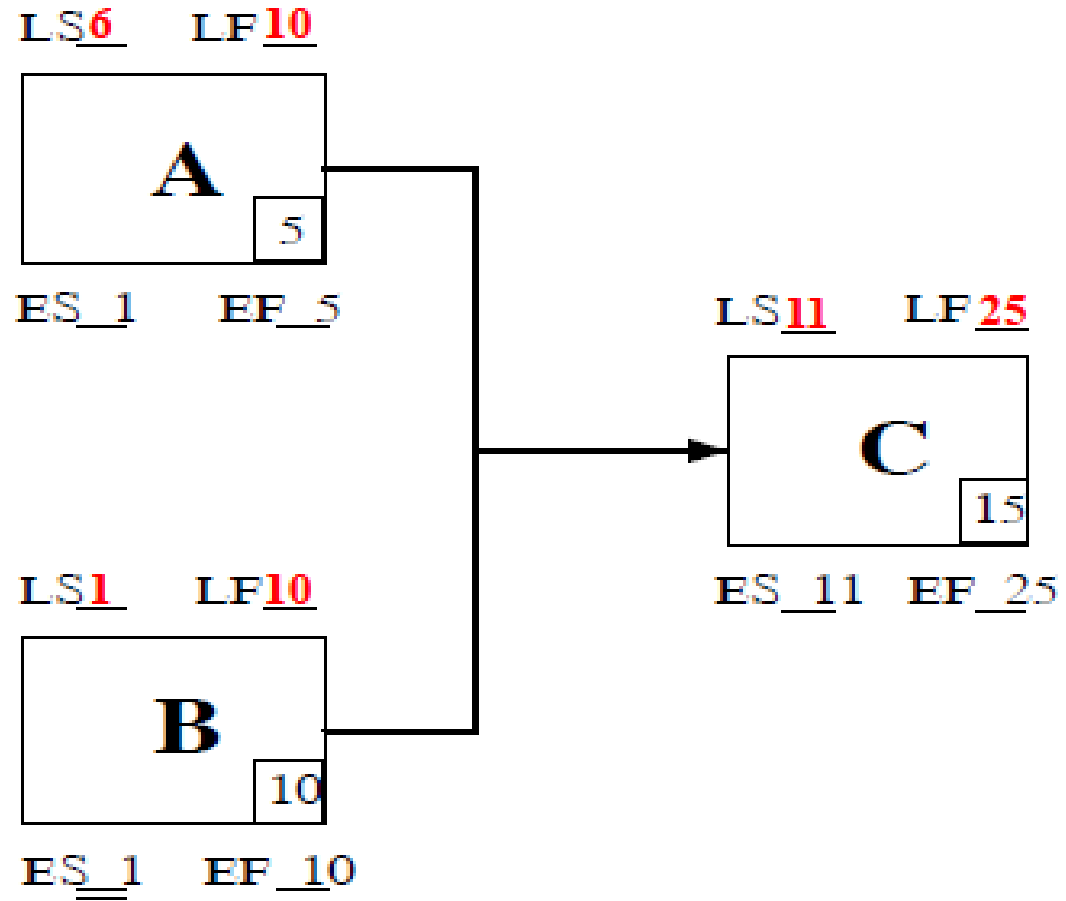
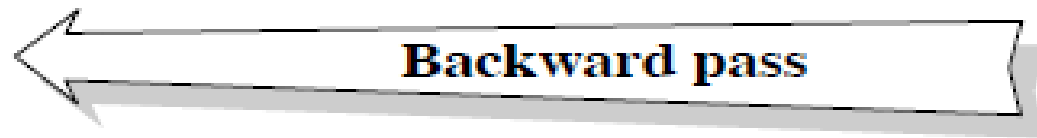
# Scheduling – Forward Pass



# Scheduling – Backward Pass

- The *backward pass* calculates an activity's late dates
- Late dates are the latest times an activity can start and finish without delaying the end date of the project
- The calculation begins with the activities without successors
- For projects without a Must Finish By date, activities without successors are assigned a Late Finish equal to the latest calculated Early Finish date
- Late Finish (LF) - Duration + 1 = Late Start (LS)

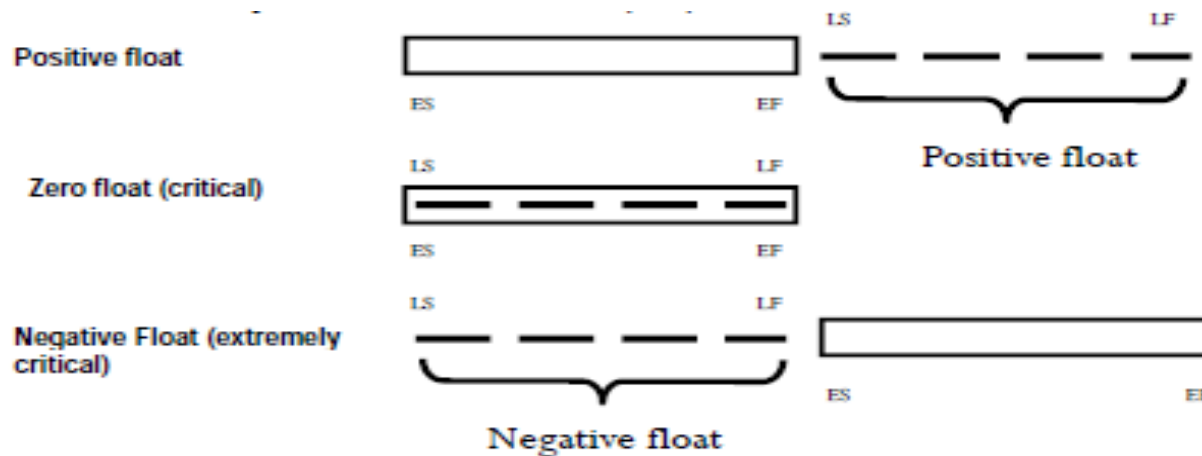
# Scheduling – Backward Pass





# Scheduling - Total Float

- ***The total amount of time that a schedule activity may be delayed from its early start date without delaying the project finish date or violating a schedule constraints.***
- The difference between an activity's late dates and early dates
- Activities with zero Total Float are critical
- Late date - Early date = Total Float (TF)

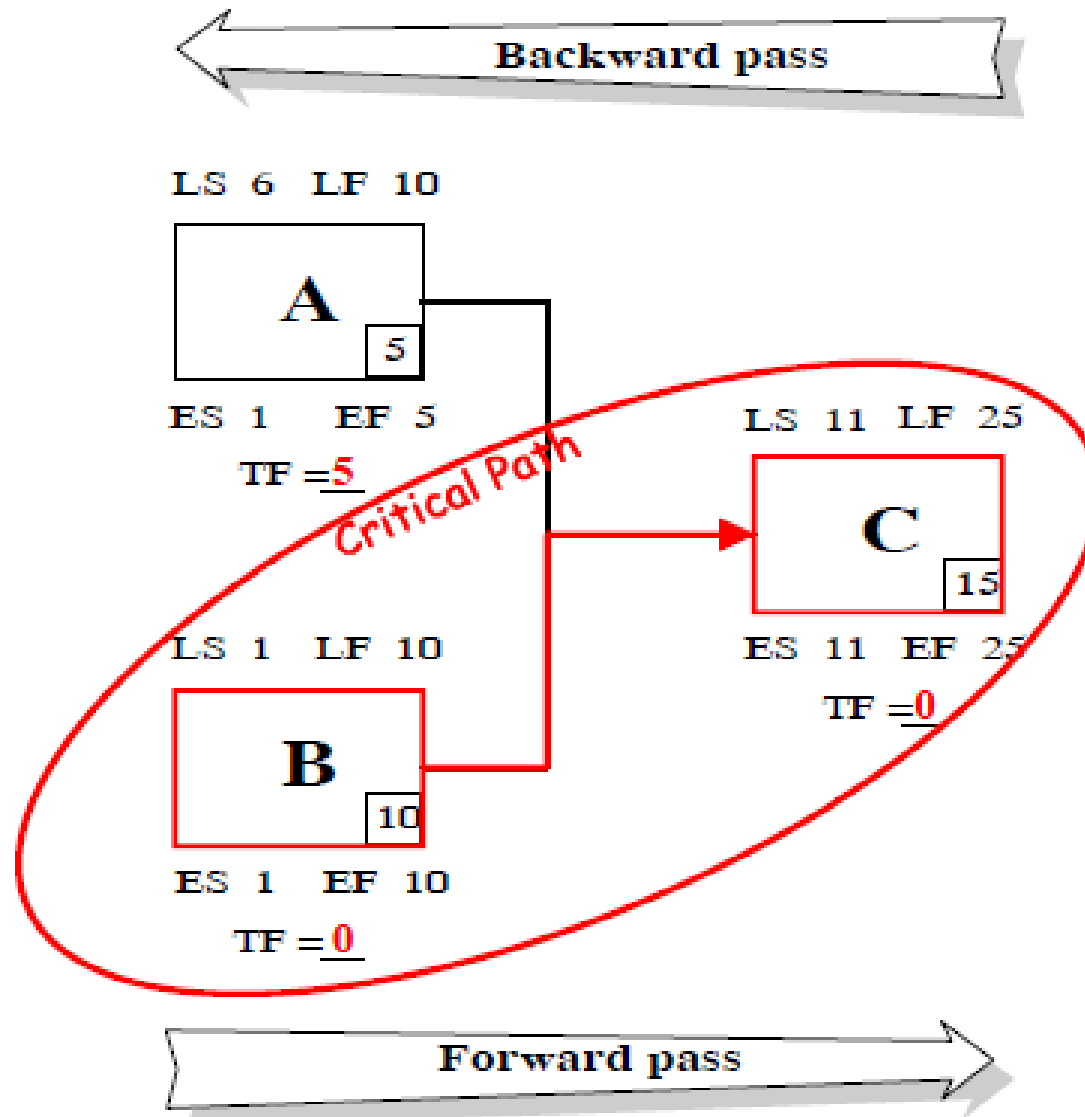


- The activity's total Float is automatically calculated each time you schedule the project. You cannot edit an activity's float values directly.

# Scheduling – Free Float

- ***The amount of time that schedule activity can be delayed without delaying the early start date of immediately following schedule activities.***
- It is calculated by subtracting the early finish date of the activity from the earliest start date of the closest of its successor.
- Critical activities has zero free float.
- Free Float cannot be negative.

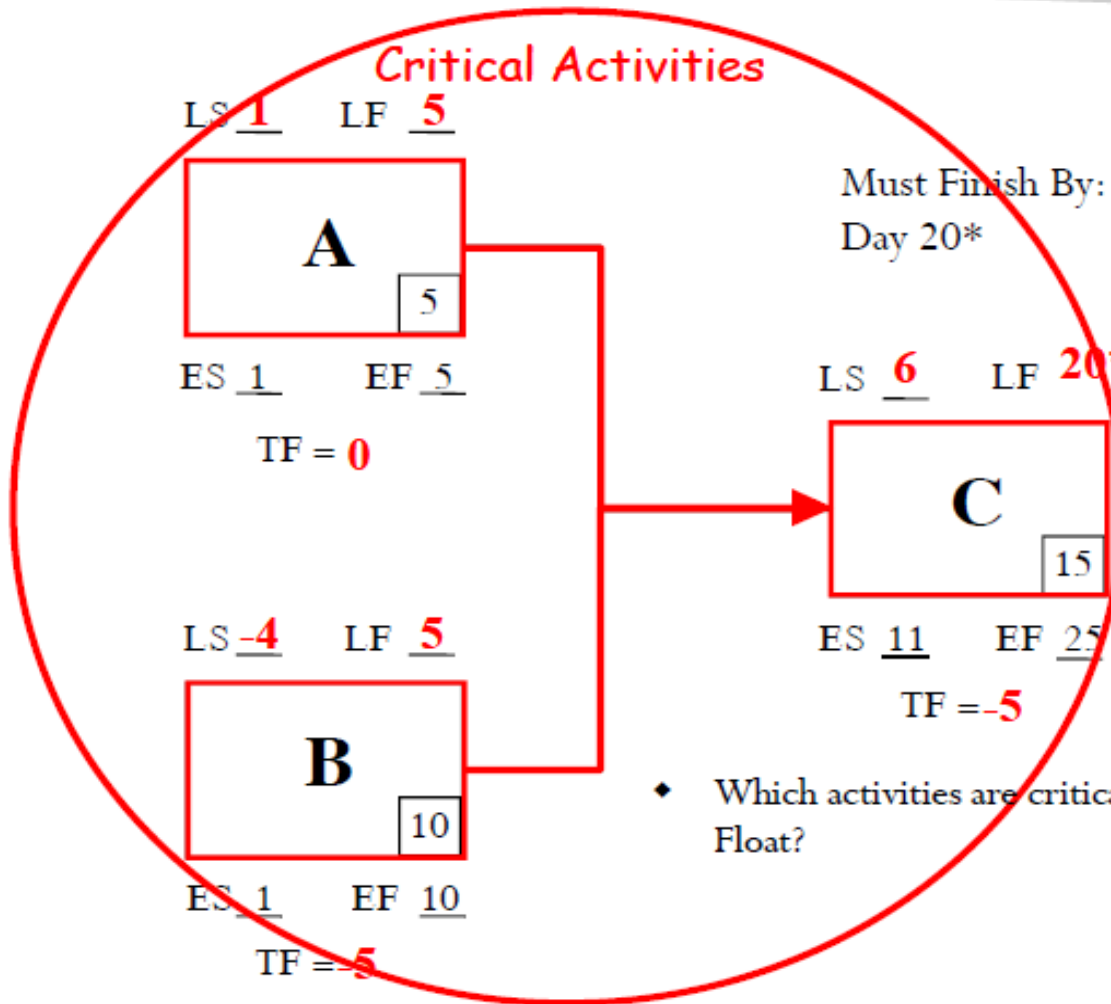
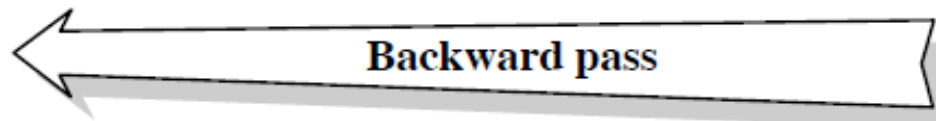
# Scheduling – Passes & Float



# Scheduling – Backward Pass with Required Finish

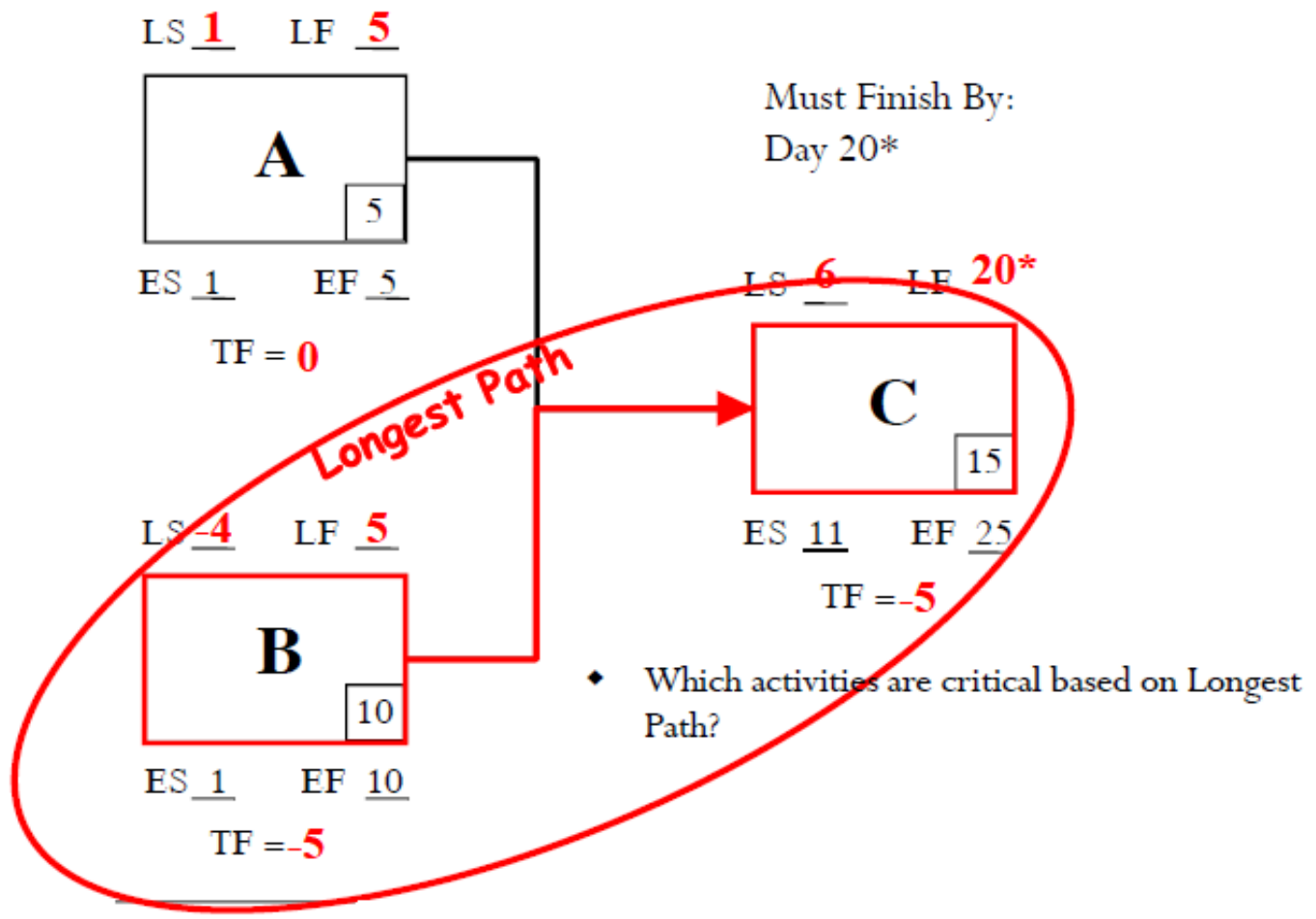
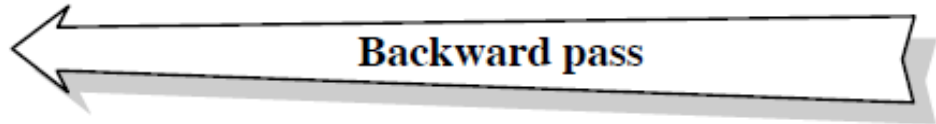
- One of the most common project scenarios is a required finish date for the project
- Used only during the backward pass
- Required finish date specifies when the project must finish regardless of the network's duration and logic
  
- $\text{Late Finish} - \text{Duration} + 1 = \text{Late Start}$

# Scheduling – Backward Pass with Required Finish



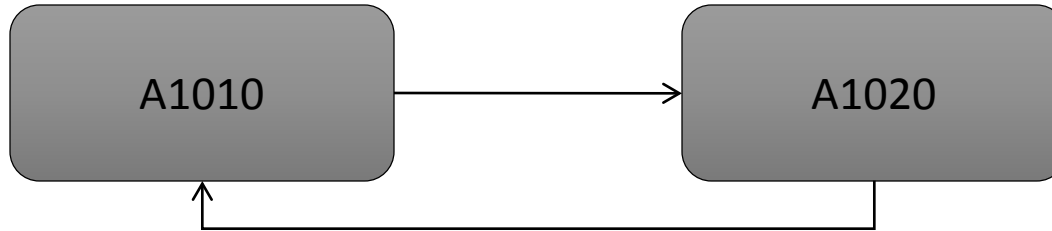
- Which activities are critical based on Total Float?

# Scheduling – Backward Pass with Required Finish



# Scheduling – Circular Relationships

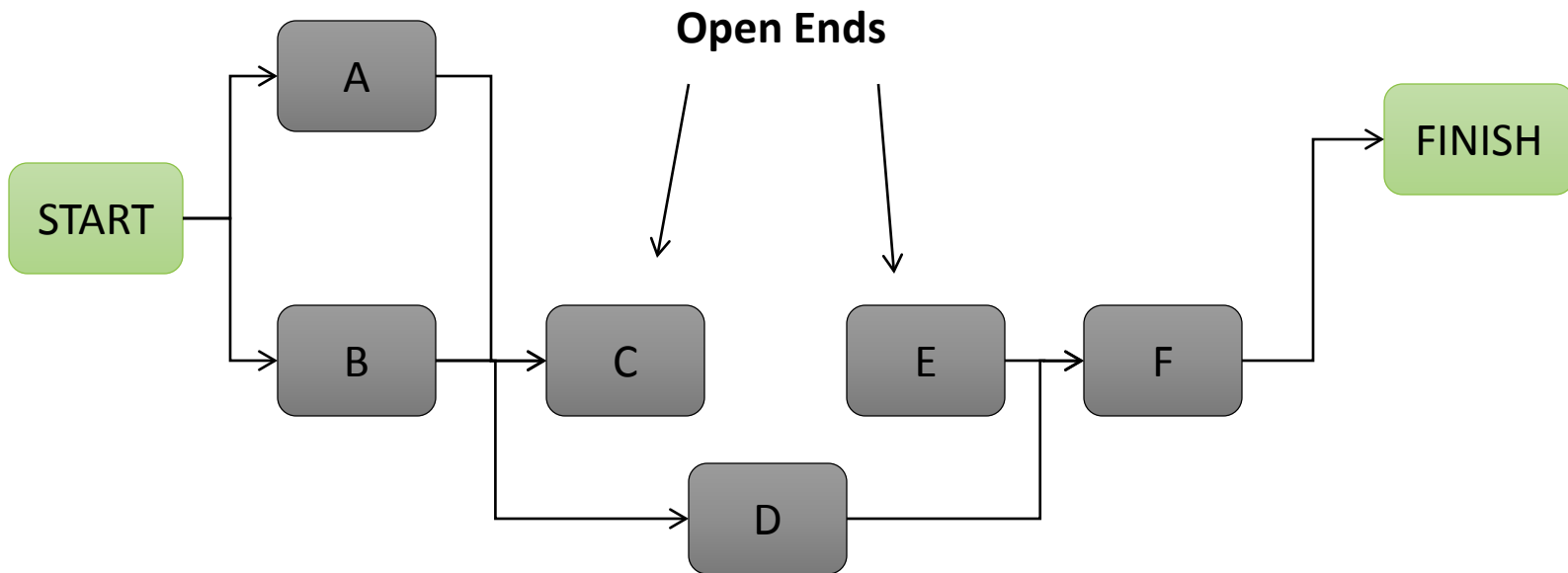
- *Loops* indicate circular logic between two activities.
- Primavera will not calculate a schedule until the loop is eliminated.



- To eliminate a loop:
  - Determine proper logic
  - Re-run the schedule

# Scheduling – Open Ends

- ***Open Ends*** are activities without a predecessor or successor:
  - No Predecessor: Activity uses Data Date as its Early Start
  - No Successor: Activity uses Project Finish as its Late Finish
- Open-ended activities can portray an unrealistic amount of positive Total Float.

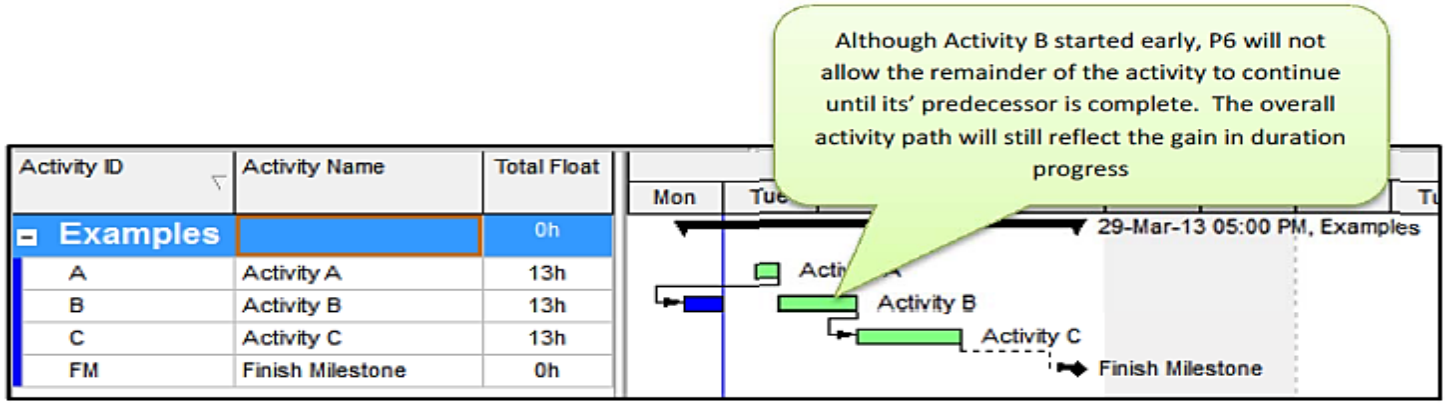




# Out-of-Sequence Activities

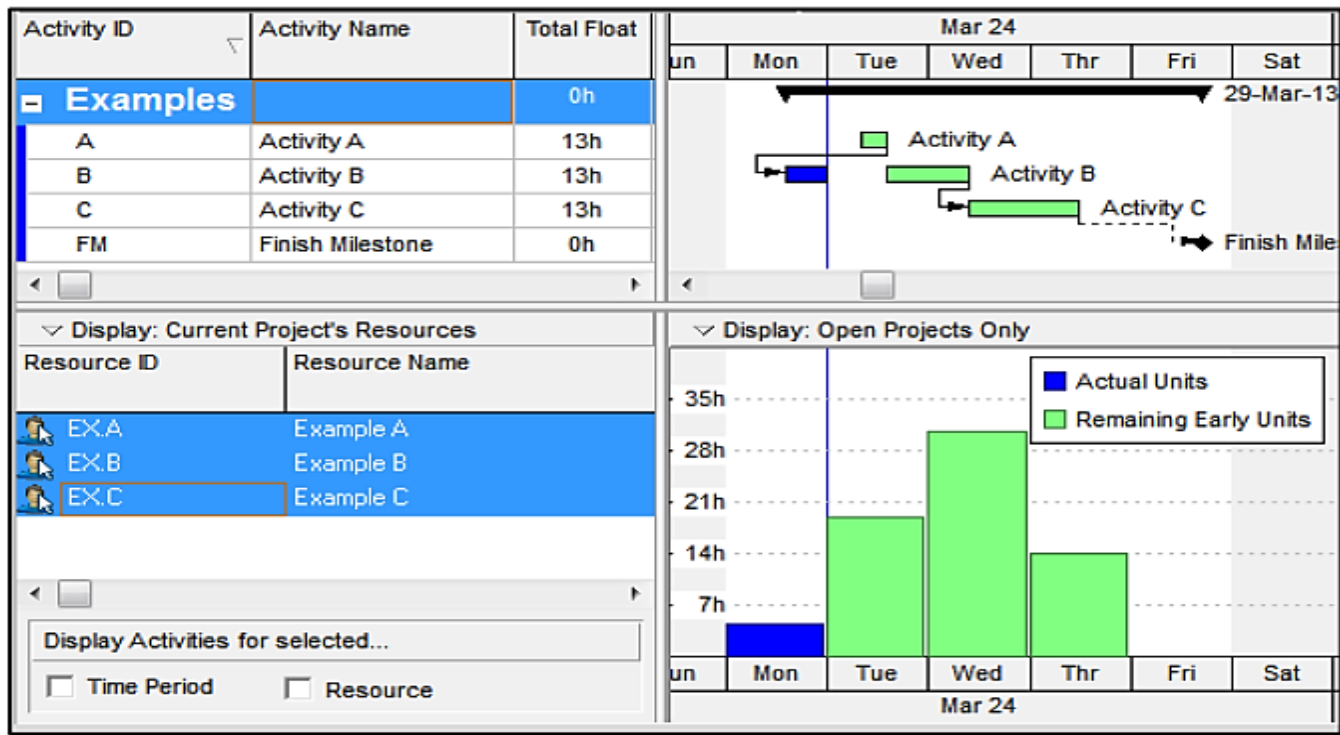
- Retain Logic
- Progress Override
- Actual Start

**Retained Logic:** The remaining duration of a progressed activity is not scheduled until all predecessors are complete. It also prevents tasks from “front-loading” since the remainder of the work is held out.



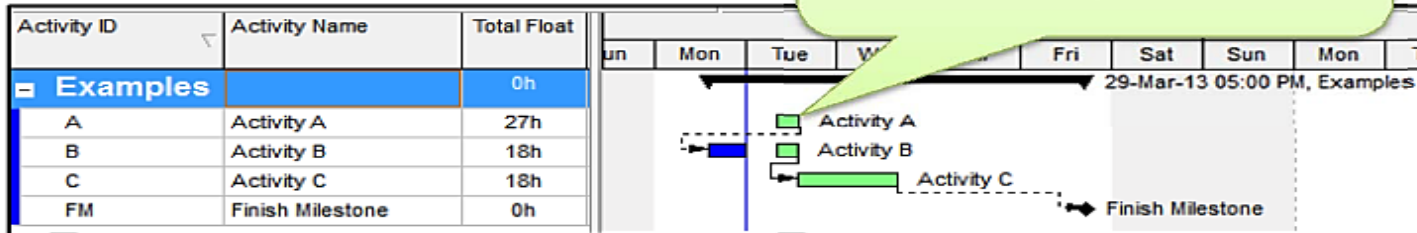
As you can see, even though Activity B started early, P6 will not allow the remainder of the activity to continue until its predecessor Activity A is complete.

The staffing plan below shows how Retained Logic prevents “front end- loading”.



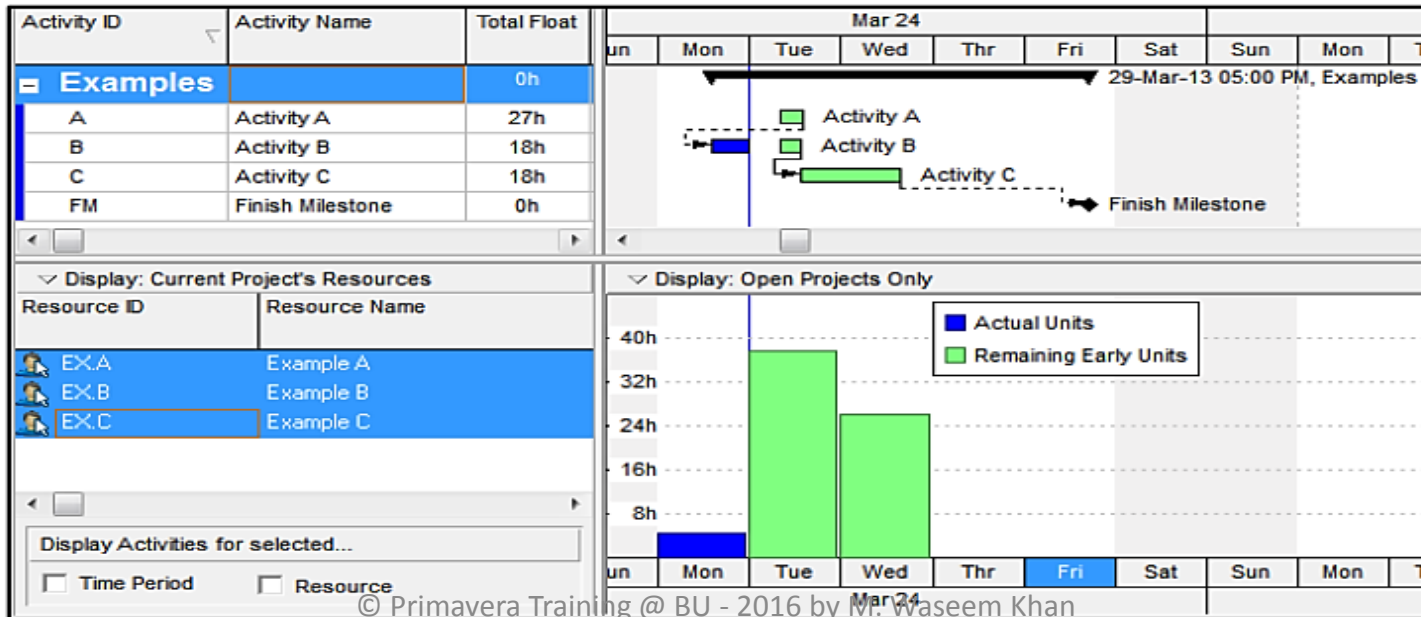
**Progress Override:** Network logic is ignored and Activity B can progress without delay. Although the predecessor logic remains intact, the relationship is ignored and the predecessor is treated as if it has an open end, resulting in unrealistic positive float. It also shows the task now capable of running in parallel, but resource availability may not allow this.

Although it's not apparent, Activity A is treated as open-ended, resulting in an unrealistic increase of float. (This example increased float from 13 to 27 hours.) Activity A and B are also now running in parallel.

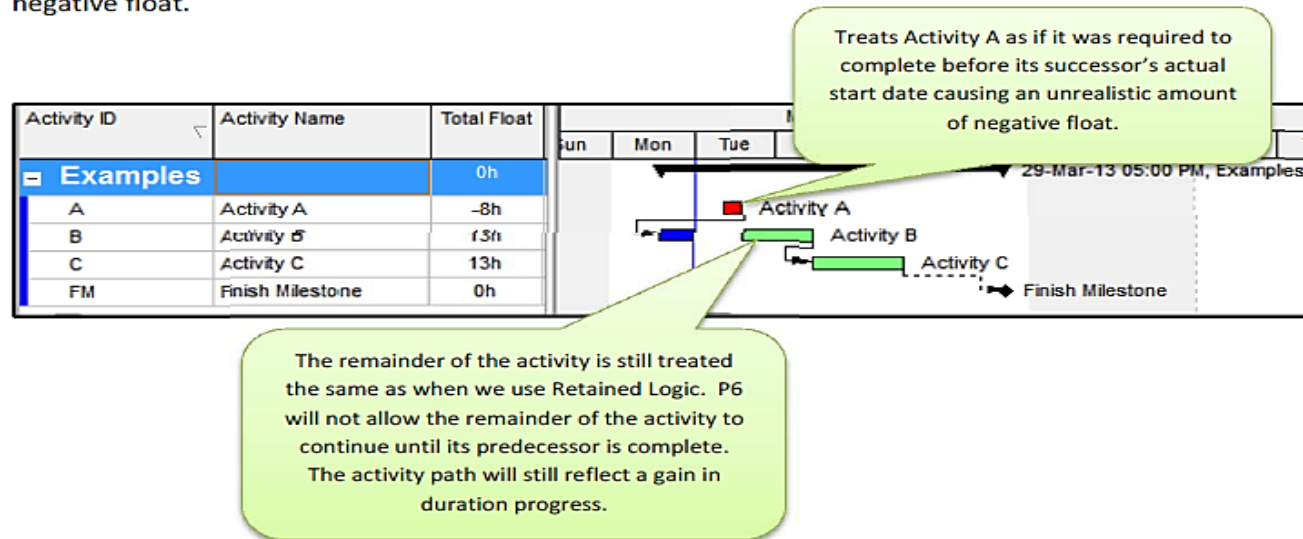


This type of scheduling does not prevent “front end-loading” which could lead to an increased staffing plan or improper staffing of the work.

As you can see, Activity B is now running in parallel with Activity A. Activity C was originally scheduled to Finish on March 28<sup>th</sup>, but is now scheduled to Finish on March 27<sup>th</sup>; doing so has pulled all scheduled work back and increased the staffing.

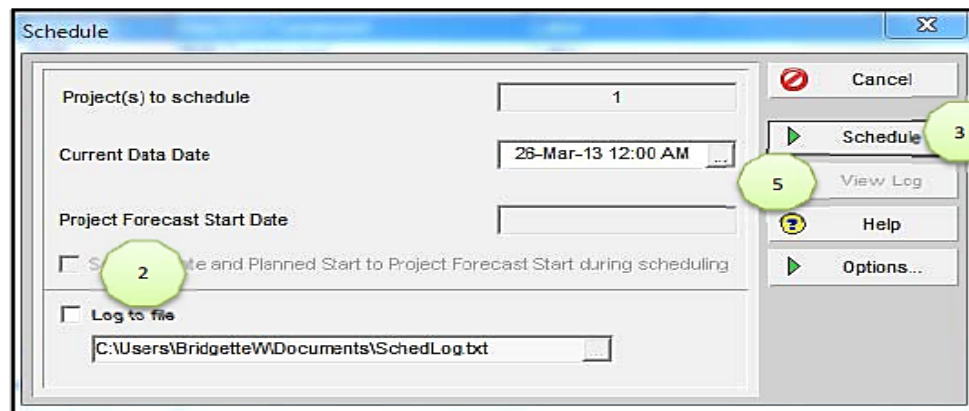


**Actual Dates:** Similar to Retained Logic, but the actual dates are used to calculate the forward and backward pass and treats the actual dates similar to constraints. The result can be an unrealistic amount of negative float.



Viewing the Schedule Log will provide details about your project and its settings. Out-of-sequence activities are one of these items that can be viewed by running the log.

To view the Schedule Log for your project follow the steps below:



1. Click F9 on your Keyboard
2. Check the Log to file box
3. Click Schedule
4. Click F9 on your Keyboard again
5. Now that Log to file location has been selected you can select View Log

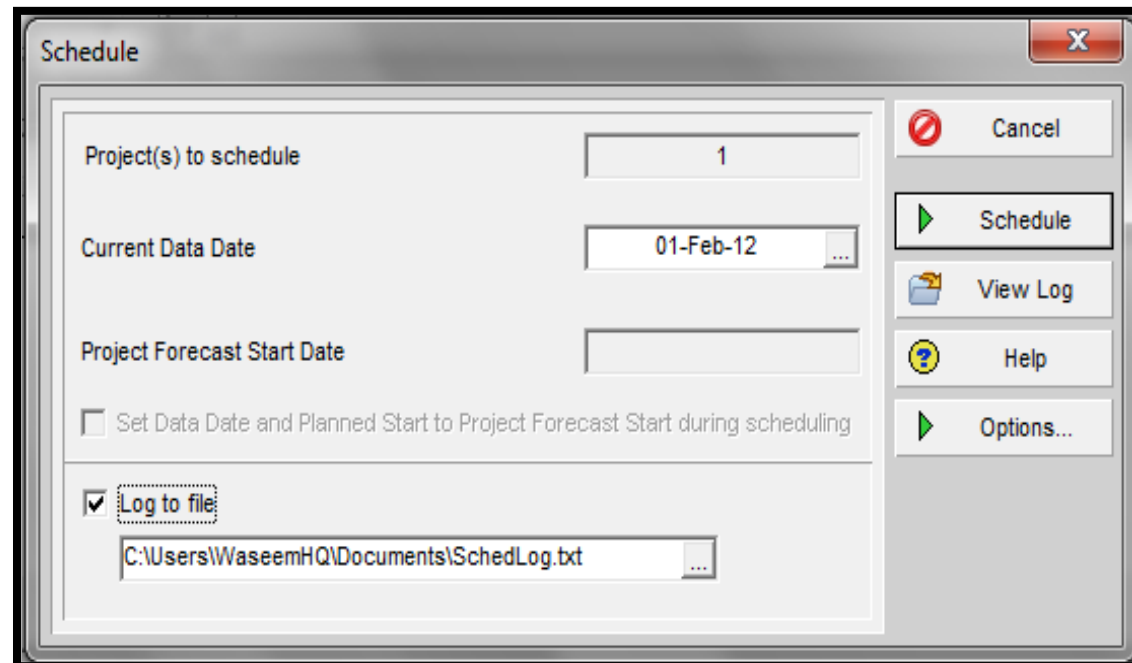
# Scheduling the Project

- When you schedule a project, activity dates are calculated according to durations and logic.
- Mark the Log to file checkbox to record scheduling results in a log file (.txt).
- After you schedule the project, note the change in the position of activities on the Gantt Chart. Activities are displayed according to their calculated start and finish dates. Critical activities are displayed in red.

## • Exercise

### • Steps

- Confirm you are in Activities Window.
- In the Tool menu, click Schedule
- Verify the date in the Current Data Date
- Check Log to File
- Click Schedule

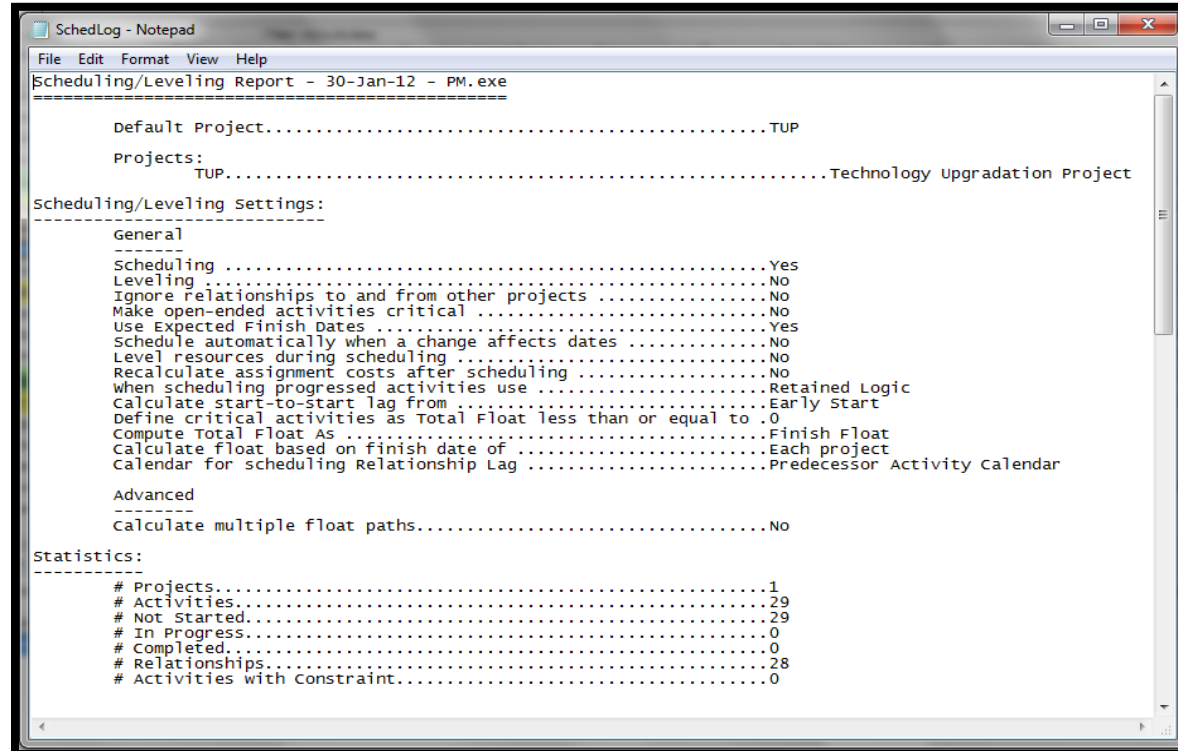


# Schedule Log

- The *Schedule Log* records scheduling results, including:
  - Scheduling/ Leveling Settings
  - Statistics
  - Errors
  - Warnings
  - Schedule/ Leveling Results
  - Exceptions

- Exercise

- Steps
  - In the Tool menu, click Schedule
  - Click View Log



```

SchedLog - Notepad
File Edit Format View Help
Scheduling/Leveling Report - 30-Jan-12 - PM.exe
-----
Default Project.....TUP
Projects:
  TUP.....Technology Upgradation Project
Scheduling/Leveling Settings:
-----
General
-----
Scheduling .....Yes
Leveling .....No
Ignore relationships to and from other projects .....No
Make open-ended activities critical .....No
Use Expected Finish Dates .....Yes
Schedule automatically when a change affects dates .....No
Level resources during scheduling .....No
Recalculate assignment costs after scheduling .....No
When scheduling progressed activities use .....Retained Logic
Calculate start-to-start lag from .....Early Start
Define critical activities as Total Float less than or equal to .0
Compute Total Float As .....Finish Float
Calculate float based on finish date of .....Each project
Calendar for scheduling Relationship Lag .....Predecessor Activity calendar
Advanced
-----
Calculate multiple float paths.....No
Statistics:
-----
# Projects.....1
# Activities.....29
# Not Started.....29
# In Progress.....0
# Completed.....0
# Relationships.....28
# Activities with Constraint.....0
  
```

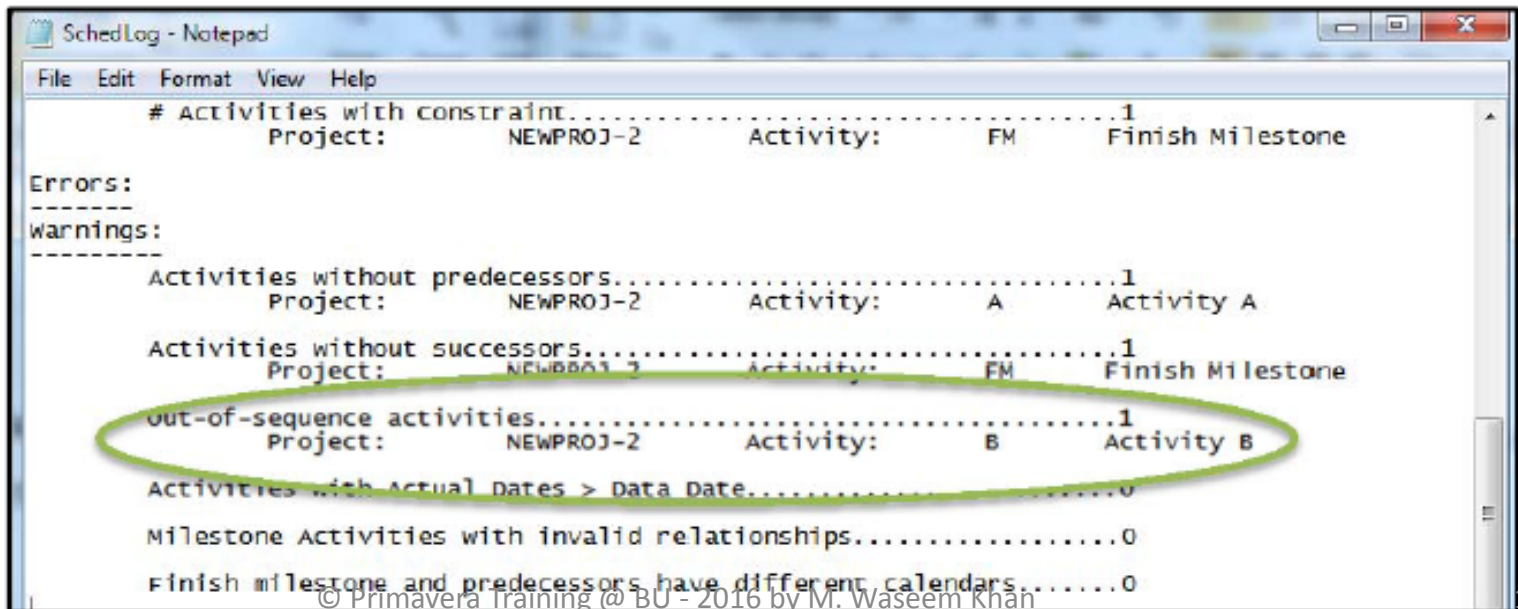
# Schedule Log (*Out-of-Sequence Activities*)



## Viewing the Schedule Log

The Schedule Log records scheduling results, including:

- Scheduling / leveling settings
- Statistics
- Critical activities
- Errors, warnings (Out-of-sequence activities)
- Scheduling / leveling results
- Exceptions



# Schedule Log

- Find-out the problems in the Schedule Log
- We have relationship problems
- Now fixing these problems



# Driving Relationships

- *An activity may have a relationship from a predecessor that determines its Early Start. This logic-tie is called a driving relationship.*

- A solid relationship line indicates a driving relationship

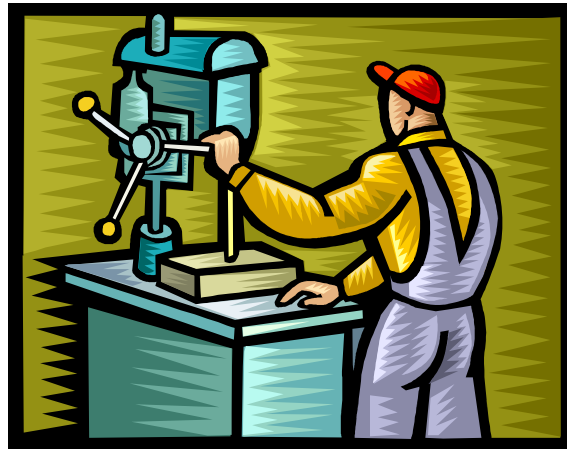
\_\_\_\_\_

- A dashed relationship line indicates a non-driving relationship

-----

# WORKSHOP

## Calculating Schedule



# Lesson Review

- After relationship logic has been defined, schedule the project to determine when the activities will take place.
- Schedule dates can be calculated based on the critical path, a series of activities that determine a project's completion date.
- When scheduling using Critical Path Method (CPM), activity Early Start and Finish dates are calculated during a Forward Pass, and Late Start and Finish dates are calculated during Backward Pass.
- The Data Date is used as a starting point when scheduling all remaining work for the project.
- After scheduling activities will have a total float that represents the amount of time an activity can be delayed without delaying the project.
- After scheduling results are recorded in a Schedule Log. Problems can be seen and rectified using this log.

# Assigning Constraints

## Lesson 10

# Assigning Constraints

- Objectives
  - Apply an overall deadline to a project
  - Apply a constraint to an individual activity
  - Add Notebook topics to constrained activities
  - Describe the available types

# Constraints

- *Constraints* are the imposed restrictions used to reflect project requirements that cannot be built into the logic.
- Use constraints to build a schedule that more accurately reflects the real-world aspects of the project, provide added control to the project, and impose a restriction on the entire project or an individual activity.
- Constraints are user-imposed.
- Two constraints can be assigned to an activity.
- After applying a constraint, the project must be re-scheduled to calculate the new dates.

# Constraints

- **Project Constraints**
  - Project Finish Constraints (Must Finish By)
  - Project Start Constraints (Must Start By)
- **Activity Constraints**
  - Start On or After
  - Start On or Before
  - Start On
  - Mandatory Start
  - Finish On or After
  - Finish On or Before
  - Finish On
  - Mandatory Finish
  - As Late As Possible
  - As Soon As Possible



# Constraints – Must Finish By

- Used when an overall project deadline must be met.
- Forces all activities in the project to finish by the date (and time) specified.
  - By default, the time associated to the Must Finish By date is set to 12:00 am.
  - This means that if the project must finish by the end of day on 1-Nov, assign a Must Finish By of 2-Nov.
- Must be applied in the Dates tab in Project Details.
- Exercise
  - Steps
    - Open Project, EC00515 - City Center Office Building Addition
    - In the Directory bar, click Projects
    - In the Project Table, select a project EC00515 - City Center Office Building Addition
    - Click the Dates tab in Project Details
    - Click Must Finish By field (browse button)
    - Select a date, 27-Dec-13



# Constraints – Must Finish By



Primavera P6 Professional R8.2 : EC00515-1 (City Center Office Building Addition)

File Edit View Project Enterprise Tools Admin Help

**Projects**

Layout: Projects

Project ID	Project Name	Total Activities	2011		November 2011				December 2011				January 2012				February 2012				March 2012				April 2012				May 2012			
			16	23	30	06	13	20	27	04	11	18	25	01	08	15	22	29	05	12	19	26	02	09	16	23	30	06	13	20	27	
<b>Enterprise</b>	<b>All Initiatives</b>	2325																														
<b>E&amp;C</b>	<b>Engineering &amp; Construction</b>	679																														
EC00515	City Center Office Building Addition	71																														
EC00530	Nesbid Building Expansion	71																														
EC00501	Haitang Corporate Park	71																														
EC00515-1	City Center Office Building Addition	71																														
EC00610	Harbour Pointe Assisted Living Center	131																														
EC00620	Juniper Nursing Home	132																														
EC00630	Saratoga Senior Community	132																														
<b>Energy</b>	<b>Energy Services</b>	689																														
NRG00870	Baytown, TX - Offline Maintenance Work	132																														
NRG00950	Red River - Refuel Outage	98																														
NRG00800	Sunset Gorge - Routine Maintenance Work	132																														
NRG00940	Sillersville - Refuel Outage	98																														
NRG00820	Johnstown - Routine Maintenance Work	131																														
NRG00910	Drittwood - Refuel Outage	98																														
<b>Manufacturing</b>	<b>Manufacturing</b>	537																														

General Notebook Budget Log Spending Plan Budget Summary Dates Funding Codes Defaults Resources Settings Calculations

**Schedule Dates**

Project Planned Start: 01-Nov-10

Data Date: 01-May-11

Actual Start: 01-Nov-10

**Must Finish By**: 27-Jun-13

**Finish**: 03-Jul-13

**Anticipated Dates**

Anticipated Start: [ ]

Anticipated Finish: [ ]

Portfolio: All Projects Access Mode: Shared Data Date: 01-May-11 Baseline: City Center Office Building Addition - B1 User: admin DB: PMDB (Professional)

# Constraints – Must Finish By

- Exercise
  - Steps
    - In the Directory bar, click Activities
    - In the Layout option bar, click Layout, Open, Classical Schedule Layout.
    - In the Tools menu, click Schedule
    - Now see Total Float column (both in Activity Table and Project Table)

# Constraints – Must Start By

- Used only during the forward pass
- Required start date specifies when the project must start regardless of the network's duration and logic
- $\text{Early Start (ES)} + \text{Duration} - 1 = \text{Early Finish (EF)}$

# Constraints – Start On or After

- Used to set the earliest date an activity can begin
- Forces the activity to start no earlier than the constraint date
- Pushes the Early Start to the constraint date
- Affects the early dates of its successors

# Constraints – Start On or After

- Exercise

- Steps

- Select an activity, EC1640-Install Wiring and Cable
    - Verify the Status tab is selected in Activity Details (bottom)
    - In the Primary drop-down list, select a constraint, Start On or After
    - In the Date field, click browse button
    - Select a date, 2-Jul-12
    - In the Tool menu, click Schedule

# Constraints – Start On or After



Primavera P6 Professional R8.2 : EC00515-1 (City Center Office Building Addition)

File Edit View Project Enterprise Tools Admin Help

Activities

Projects Activities

Layout: Classic Schedule Layout Filter: All Activities

Activity ID	Activity Name	Original Duration	Remaining Duration	Schedule % Complete	Start	Finish	Total Float
<b>EC00515-1.Mechanicals.HVAC HVAC</b>							
EC1190	Prepare and Solicit Bids for Heat Pump	15	2	100%	14-Apr-11 A	04-May-11	-17
EC1240	Review Bids for Heat Pump	10	10	79.17%	04-May-11	17-May-11	-17
EC1270	Award Contract for Heat Pump	6	6	0%	17-May-11	25-May-11	-17
EC1290	Fabricate and Deliver Heat Pump and Controls	423	423	0%	25-May-11	23-Jan-13	-17
EC1500	Install HVAC Ducts	24	24	0%	21-Mar-12	24-Apr-12	168
EC1630	Insulate Ducts	5	5	0%	28-Jun-12	06-Jul-12	122
EC1650	Set Heat Pump	12	12	0%	23-Jan-13	08-Feb-13	-17
EC1670	Relocate HVAC Chiller	7	7	0%	08-Feb-13	19-Feb-13	-17
EC1680	Startup and Test HVAC	2	2	0%	19-Feb-13	21-Feb-13	-17
EC1770	Install AC Grills and Registers	5	5	0%	24-Apr-13	01-May-13	6
EC1830	Test and Balance HVAC Equipment	2	2	0%	12-Jul-13	16-Jul-13	-17
<b>EC00515-1.Mechanicals.Systems Plumbing and Ele</b>							
EC1440	Set Mechanical and Electrical Equipment	36	36	0%	31-Jan-12	21-Mar-12	168
EC1510	Rough-In Plumbing/Piping	3	3	0%	27-Mar-12	29-Mar-12	170
EC1640	Install Wiring and Cable	36	36	0%	28-Jun-12*	20-Aug-12	109
EC1660	Connect Equipment	1	1	0%	08-Feb-13	11-Feb-13	-11
<b>EC00515-1.Ex-Finish Exterior Finishes</b>							
		343	296	43.02%	17-Feb-11 A	28-Jun-12	254

Qtr 4, 2010: Oct, Nov, Dec  
Qtr 1, 2011: Jan, Feb, Mar, Apr

General Status Resources Predecessors Successors

Activity: EC1640 Install Wiring and Cable Project: EC00515-1

Duration	Status	Exp Finish	Constraints
Original: 36	<input type="checkbox"/> Started 28-Jun-12 Physical % 0%		Primary: Start On or After
Actual: 0	<input type="checkbox"/> Finished 20-Aug-12 Suspend		Secondary: < None >
Remaining: 36	Exp Finish		Date: 02-Jul-12
At Complete: 36			
Total Float: 109			
Free Float: 120			

▼ Labor Units

Budgeted	576
Actual	0
Remaining	576
At Complete	576

Portfolio: All Projects Access Mode: Shared Data Date: 01-May-11 Baseline: City Center Office Building Addition - B1 User: admin DB: PMDB (Professional)

# Adding Notebook Topic

- When a constraint is assigned to an activity, it is recommended that you add a note to document why the constraint was assigned. You can use the Notebook tab in the Activity Details window to document these reasons.
- Exercise
  - Steps
    - Verify activity selection, EC1640-Install Wiring and Cable
    - Click the Notebook tab (bottom)
    - Click Add
    - Assign a Notebook Topic, Constraints
    - Close the Assign Notebook Topic dialog box
    - Type a description <Cables are not available until 2-Jul-12>

# Adding Notebook Topic



Primavera P6 Professional R8.2 : EC00515-1 (City Center Office Building Addition)

File Edit View Project Enterprise Tools Admin Help

Activities

Projects Activities

Layout: Classic Schedule Layout Filter: All Activities

Activity ID	Activity Name	Original Duration	Remaining Duration	Schedule % Complete	Start	Finish	Total Float
EC00515-1.Mechanicals.HVAC HVAC		575	563	3.85%	14-Apr-11 A	16-Jul-13	-17
EC1190	Prepare and Solicit Bids for Heat Pump	15	2	100%	14-Apr-11 A	04-May-11	-17
EC1240	Review Bids for Heat Pump	10	10	79.17%	04-May-11	17-May-11	-17
EC1270	Award Contract for Heat Pump	6	6	0%	17-May-11	25-May-11	-17
EC1290	Fabricate and Deliver Heat Pump and Controls	423	423	0%	25-May-11	23-Jan-13	-17
EC1500	Install HVAC Ducts	24	24	0%	21-Mar-12	24-Apr-12	168
EC1630	Insulate Ducts	5	5	0%	28-Jun-12	06-Jul-12	122
EC1650	Set Heat Pump	12	12	0%	23-Jan-13	08-Feb-13	-17
EC1670	Relocate HVAC Chiller	7	7	0%	08-Feb-13	19-Feb-13	-17
EC1680	Startup and Test HVAC	2	2	0%	19-Feb-13	21-Feb-13	-17
EC1770	Install AC Grills and Registers	5	5	0%	24-Apr-13	01-May-13	6
EC1830	Test and Balance HVAC Equipment	2	2	0%	12-Jul-13	16-Jul-13	-17
EC00515-1.Mechanicals.Systems Plumbing and Ele		263	263	0%	31-Jan-12	11-Feb-13	-11
EC1440	Set Mechanical and Electrical Equipment	36	36	0%	31-Jan-12	21-Mar-12	168
EC1510	Rough-In Plumbing/Piping	3	3	0%	27-Mar-12	29-Mar-12	170
EC1640	Install Wiring and Cable	36	36	0%	02-Jul-12*	22-Aug-12	107
EC1660	Connect Equipment	1	1	0%	08-Feb-13	11-Feb-13	-11
EC00515-1.Ex-Finish Exterior Finishes		343	296	43.02%	17-Feb-11 A	28-Jun-12	254

General Status Resources Predecessors Successors Codes Expenses Feedback Notebook Relationships Risks Steps Summary WPs & Docs

Activity EC1640 Install Wiring and Cable

Notebook Topic

- Constraints

Constraints

*Cables are not available until 2-Jul-12*

Assign Notebook Topic

Display: Notebook Topics

Search

Notebook Topic

- Constraints
- Change Management
- Resource Brokering
- Sponsor Feedback
- Recent Accomplishments
- Lessons Learned
- Rationale
- Objectives
- Changes
- Corrective Actions

Portfolio: All Projects Access Mode: Shared Data Date: 01-May-11 Baseline: City Center Office Building Addition - B1 User: admin DB: PMDB (Professional)



# Constraints – Finish On or Before

- Used to set intermediate completion points
- Forces the activity to finish no later than the constraint date
- Pulls the late finish date to the constraint date
- Affects the late dates of its predecessors
- Exercise
  - Steps
    - Select an activity, EC1740-Install Ceiling Grid
    - Click the Status tab
    - In the Primary drop-down list, select a constraint type, Finish On or Before
    - Click browse in the Date field
    - Select a date, 3-Jun-13
    - In the Tools menu, click Schedule

# Constraints – Finish On or Before



Primavera P6 Professional R8.2 : EC00515-1 (City Center Office Building Addition)

File Edit View Project Enterprise Tools Admin Help

Activities

Projects Activities

Layout: Classic Schedule Layout Filter: All Activities

Activity ID	Activity Name	Original Duration	Remaining Duration	Schedule % Complete	Start	Finish	Total Float
EC1850	Punch List	5	5	0%	16-Jul-13	23-Jul-13	-17
EC1860	Building Addition Complete	0	0	0%		23-Jul-13	-17
EC00515-1.Int-Finish.Fixtures Plumbing and Lighting		45	45	0%	24-Apr-13	27-Jun-13	-10
EC1760	Install Lighting Fixtures	7	7	0%	24-Apr-13	06-May-13	3
EC1810	Install Plumbing Fixtures	5	5	0%	20-Jun-13	27-Jun-13	-10
EC00515-1.Int-Finish.Coverings Floor and Carpeting		593	546	20.72%	25-Feb-11 A	20-Jun-13	-17
EC1060	Assemble and Submit Flooring Samples	0	0	100%	25-Feb-11 A		
EC1080	Review and Approve Flooring	28	0	100%	25-Feb-11 A	11-Apr-11 A	
EC1170	Prepare and Solicit Bids for Flooring	24	5	100%	04-Apr-11 A	06-May-11	213
EC1250	Review Bids for Flooring	15	15	36.11%	06-May-11	27-May-11	213
EC1300	Award Contract for Flooring	5	5	0%	27-May-11	06-Jun-11	213
EC1310	Fabricate and Deliver Flooring	279	279	0%	06-Jun-11	09-Jul-12	213
EC1790	Install Floor and Carpeting	12	12	0%	04-Jun-13	20-Jun-13	-17
EC00515-1.Int-Finish.Carp Carpentry		60	60	0%	12-Apr-13	09-Jul-13	-17
EC1740	Install Ceiling Grid	36	36	0%	12-Apr-13	04-Jun-13*	-17
EC1800	Finish Carpentry and Millwork	12	12	0%	20-Jun-13	09-Jul-13	-17
EC00515-1.Int-Finish.Paint Paint		12	12	0%	04-Mar-13	20-Mar-13	60
EC1720	Paint Building Interior	12	12	0%	04-Mar-13	20-Mar-13	60

General Status Resources Predecessors Successors Codes Expenses Feedback Notebook Relationships Risks Steps Summary WPs & Docs

Activity: EC1740 Install Ceiling Grid Project: EC00515-1

Duration	Original: 36	Actual: 0	Remaining: 36	At Complete: 36	Total Float: -17	Free Float: 0
----------	--------------	-----------	---------------	-----------------	------------------	---------------

Status

Started 12-Apr-13 Physical % 0%

Finished 04-Jun-13 Suspend

Exp Finish Resume

Constraints

Primary: Finish On or Before Secondary: < None >

Date: 03-Jun-13 Date:

Labor Units

Budgeted	288
Actual	0
Remaining	288
At Complete	288

Portfolio: All Projects Access Mode: Shared Data Date: 01-May-11 Baseline: City Center Office Building Addition - B1 User: admin DB: PMDB (Professional)

# Constraints – Start On

- Forces the activity to start on the constraint date
- Shifts both Early and Late Start dates
- Delays an Early Start or accelerates a Late Start
- Used to specify dates submitted by contractors or vendors

# Constraints – Start On or Before

- Used to set intermediate start points
- Forces the activity to start no later than the constraint date
- Pulls the late start date to the constraint date
- Affects the late dates of its predecessors

# Constraints – Mandatory Start

- Forces the activity to start on the constraint date
- Forces early and late dates to be equal to the constraint date
- Affects late dates of predecessors and early dates of successors
- May violate network logic

# Constraints – Finish On or After

- Forces the activity to finish no earlier than the constraint date
- Shifts the Early Finish to the constraint date
- Affects the early dates of its successors
- Used to prevent an activity from finishing too early

# Constraints – Finish On

- Forces the activity to finish on the constraint date
- Shifts both Early and Late Finish dates
- Delays an Early Finish or accelerates a Late Finish
- Used to satisfy intermediate project deadlines

# Constraints – Mandatory Finish

- Forces the activity to finish on the constraint date
- Forces early and late dates to be equal to the constraint date
- Affects late dates of predecessors and early dates of successors
- May violate network logic



# Constraints – As Late as Possible

- Delays an activity as late as possible without delaying its successors
- Shifts the early dates as late as possible
- Also called a zero free float constraint

# Lesson Review

- Assign constraints to activities and projects to reflect real-world restrictions.
- A maximum of two constraints can be assigned to an activity (Primary and Secondary).
- The Must Finish By constraint is used when overall project deadline must be met.
- Use the Start On or After constraint to set the earliest date an activity can begin.

# Maintaining the Project Document Library

## Lesson 11

# Maintaining the Project Document Library



- Objectives

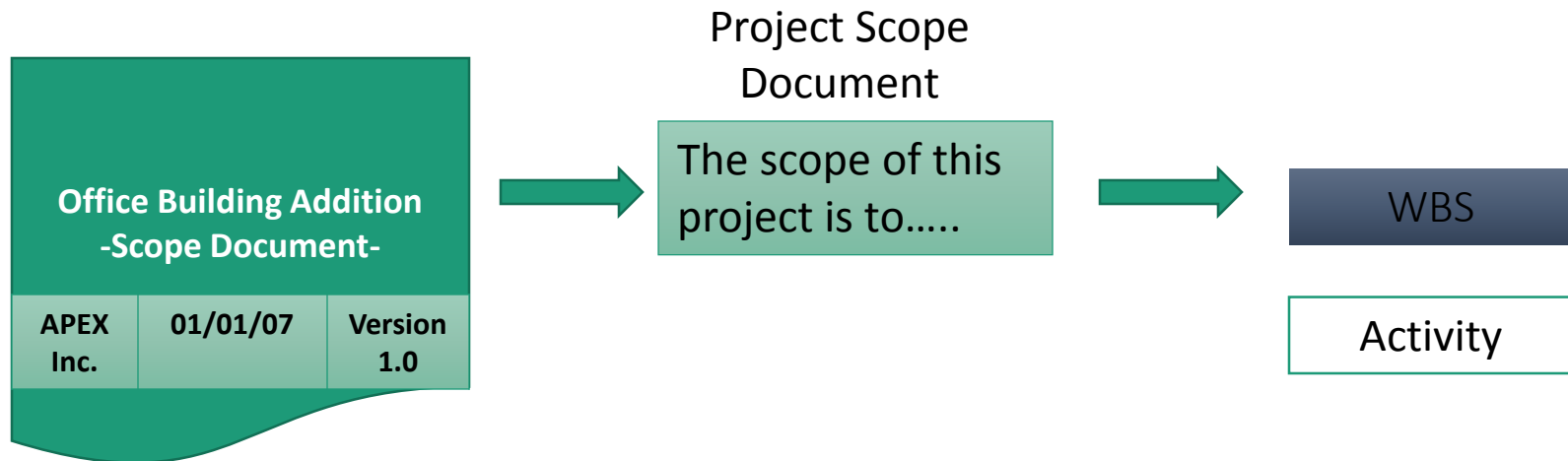
- Describe the difference between a work-product and a reference document
- Create a document record
- Link the document record to a project document or work-product
- Assign the project document to an activity or WBS

# Project Documents

- The *Work Products and Documents (WPs & Docs) window* enables you to maintain general information about the project documents including links to the actual document files. Documents are organized hierarchically to enhance categorization.
- You can catalog and track project-related documents and deliverables and provide standards and guidelines for performing work on an activity.
  - Store documents on a network file server or website
  - Maintain general information about project documents such as version, revision date, and author.
  - Create a link to the actual document file (path of file).
- Documents can be designated as a work product or reference document:
  - *Work Products* – Includes project or activity deliverables that will be turned-over to the end-user or customer. E.g. CAD files, testing plans, maps etc.
  - *Reference Documents* – Includes documents that can be referenced by a project participant to provide standards and guidelines for performing work. E.g. guidelines, policies, procedures, design templates, checklists, and worksheets.

# Creating a Document Record

- Documents do not reside in the Primavera Database. To access documents via Primavera, a document record must be created in the Work Products and Documents window.



1) Create Document Record

2) Establish Link to Actual Document File

3) Assign Document Record to WBS element and/or to an Activity

# Creating a Document Record

- Exercise

- Steps

- Open a Project, City Center Office Building Addition
    - In the Directory bar, click WPs & Docs
    - In the Command bar, click Add
    - In the Title field in General tab, type a title <Construction Safety Regulations>, and then press Enter
    - In the Reference No. field, type <1918.14>
    - In the Document Category field, click browse
    - Select a document category, Regulatory/Compliance
    - In the Revision Date field, select a date, 11-Jan-07

# Creating a Document Record



Primavera P6 Professional R8.2 : EC00515-1 (City Center Office Building Addition)

File Edit View Project Enterprise Tools Admin Help

WPs & Docs

Projects Activities WPs & Docs

Display: All WPs & Docs

Title	Reference No.	Status	Document Category	Version	Revision Date
OSHA Regulations			Regulatory/Compliance	1.0	28-Feb-03
Construction Safety Regulations	1918.14		Regulatory/Compliance	1.0	11-Jan-07
Design			Detailed Design Specifications	1.0	28-Feb-03
Detailed Design Specification			Detailed Design Specifications	1.0	28-Feb-03
Steel Fram			General Documents	1.0	28-Feb-03
Machinery			General Documents	1.0	28-Feb-03

General Description Files Assignments

Title: Construction Safety Regulations Reference No.: 1918.14

Version: 1.0 Document Category: Regulatory/Compliance Status: <None>

Revision Date: 11-Jan-07 Author:   Deliverable

Portfolio: All Projects Access Mode: Shared Data Date: 01-May-11 Baseline: City Center Office Building Addition - B1 User: admin DB: PMDB (Professional)



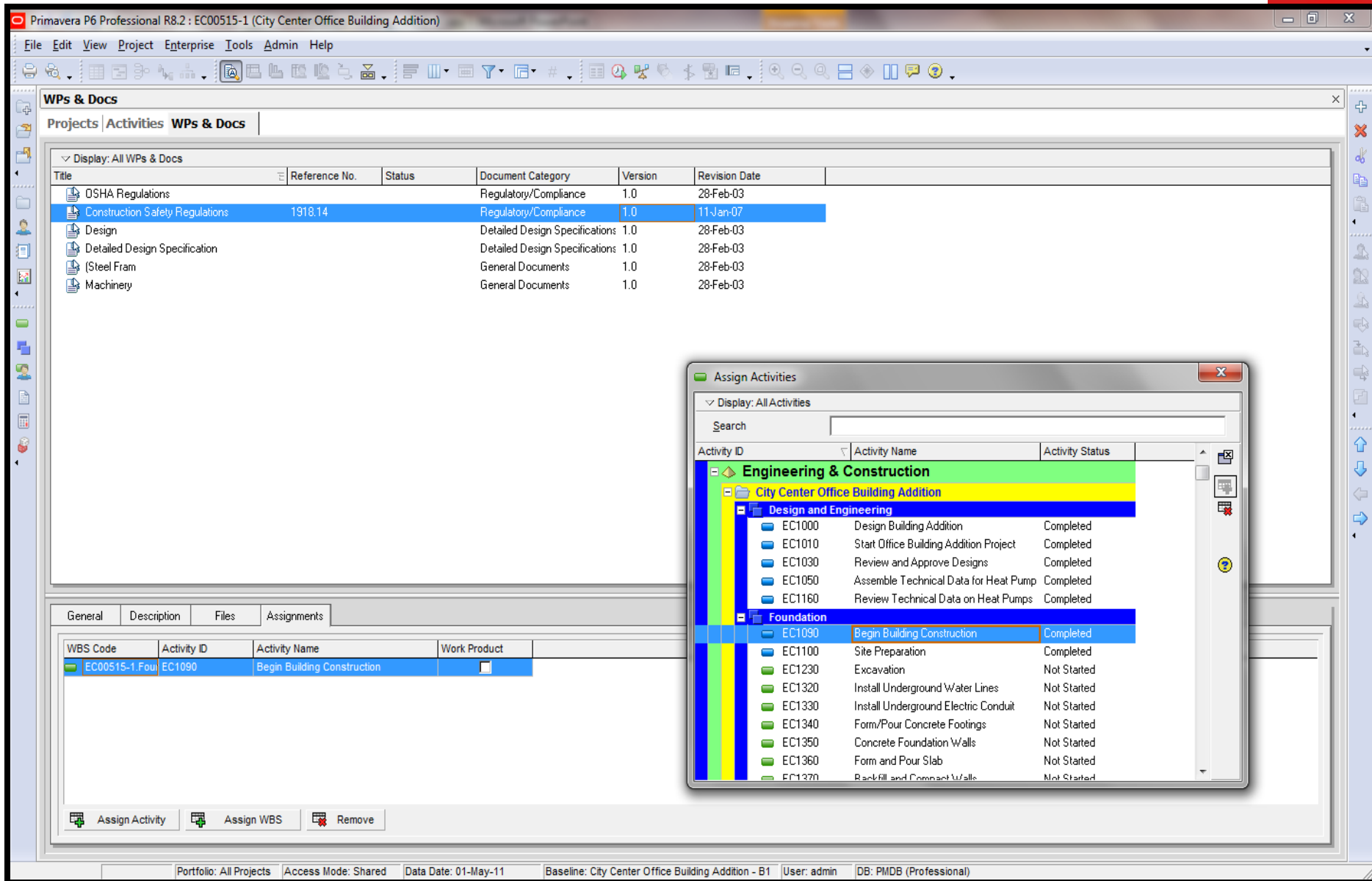
# Files Tab

- After you add a document record, you must establish a link to the document by specifying a file path.
- There are two kinds of document location references:
  - *Private Location* – References can be viewed only by Primavera client/server application users. E.g. Invoices, Purchase Orders, or Contracts.
  - *Public Location* – References can be viewed by all project participants including timesheet users. E.g. Procedure Guidelines or Project Checklists.
- Exercise
  - Steps
    - Click the Files tab
    - In the Public Location field, click browse button
    - Browse to file location (any document file)
    - In the Select File Name dialog box, click Open
    - Click Launch to view the document
    - In the File menu in Notepad, click Exit

# Assigning a Project Document

- Project Documents can be assigned to both WBS elements and activities.
  
- Exercise
  - Steps
    - Click Assignments tab (bottom)
    - Click Assign Activity
    - Select an activity, EC1090-Begin Building Construction
    - Click Assign button to assign the document to the activity
    - Close the Assign Activities dialog box

# Assigning a Project Document



The screenshot displays the Primavera P6 Professional R8.2 interface for project 'EC00515-1 (City Center Office Building Addition)'. The 'WPs & Docs' window is open, showing a list of documents. The 'Assign Activities' dialog box is also open, showing a tree view of activities under 'Engineering & Construction'.

**WPs & Docs Table:**

Title	Reference No.	Status	Document Category	Version	Revision Date
OSHA Regulations			Regulatory/Compliance	1.0	28-Feb-03
Construction Safety Regulations	1918.14		Regulatory/Compliance	1.0	11-Jan-07
Design			Detailed Design Specifications	1.0	28-Feb-03
Detailed Design Specification			Detailed Design Specifications	1.0	28-Feb-03
(Steel Fram			General Documents	1.0	28-Feb-03
Machinery			General Documents	1.0	28-Feb-03

**Assign Activities Dialog Table:**

Activity ID	Activity Name	Activity Status
<b>Engineering &amp; Construction</b>		
<b>City Center Office Building Addition</b>		
<b>Design and Engineering</b>		
EC1000	Design Building Addition	Completed
EC1010	Start Office Building Addition Project	Completed
EC1030	Review and Approve Designs	Completed
EC1050	Assemble Technical Data for Heat Pump	Completed
EC1160	Review Technical Data on Heat Pumps	Completed
<b>Foundation</b>		
EC1090	Begin Building Construction	Completed
EC1100	Site Preparation	Completed
EC1230	Excavation	Not Started
EC1320	Install Underground Water Lines	Not Started
EC1330	Install Underground Electric Conduit	Not Started
EC1340	Form/Pour Concrete Footings	Not Started
EC1350	Concrete Foundation Walls	Not Started
EC1360	Form and Pour Slab	Not Started
EC1370	Backfill and Compact Walls	Not Started

**Assignments Table:**

WBS Code	Activity ID	Activity Name	Work Product
EC00515-1.Fou	EC1090	Begin Building Construction	

# Assigning a Project Document

- Exercise

- Steps

- In the Directory bar, click Activities
    - Select an activity, EC1090-Begin Building Construction
    - In the Layout Option bar, click Layout, Open
    - Select a Layout, Classic WBS Layout, and then click Open
    - Click the WPS & Docs tab
    - Verify that the Construction Safety Regulations document has been assigned to activity EC1090-Begin Building Construction

# Viewing Document Details

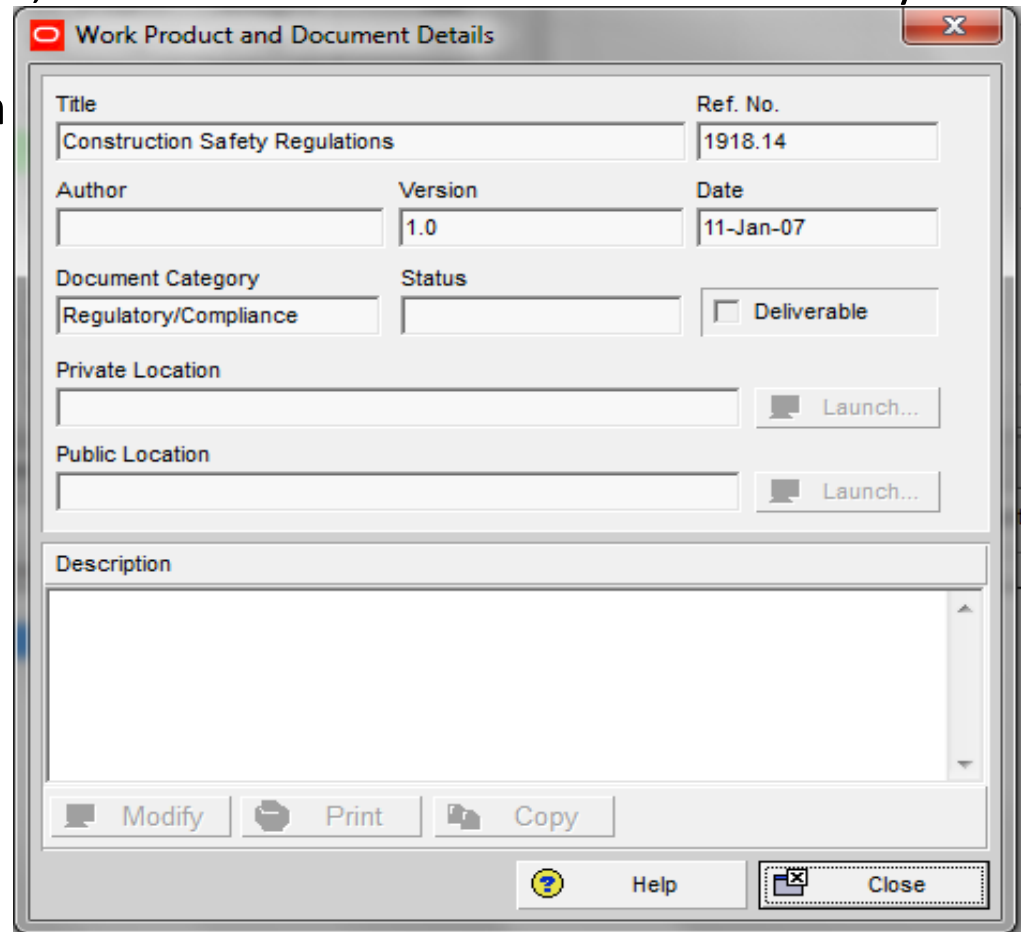
- Use the *Work Product and Document Details* dialog box to view details about and/or open the selected work product or document. Fields in the dialog box are summarized below:
  - *Title* – The name of the selected work product or document
  - *Author* – The name of the person who created the selected the work product or document
  - *Version* – The selected work product or document’s version number
  - *Date* – The entered Revision Date
  - *Private/ Public Location* – The work product or document’s file name with complete path
  - *Launch* – Opens the work product or document in its native application
  - *Description* – A narration of the selected work product or document

# Viewing Document Details

- Exercise

- Steps

- In the WPs & Docs tab, select a document <Construction Safety Regulations>
    - Click Details... button
    - Click Launch button
    - Click File, Exit
    - Click Close button



**Work Product and Document Details**

Title		Ref. No.
Construction Safety Regulations		1918.14
Author	Version	Date
	1.0	11-Jan-07
Document Category	Status	<input type="checkbox"/> Deliverable
Regulatory/Compliance		
Private Location		Launch...
Public Location		Launch...
Description		
Modify	Print	Copy
Help		Close

# Lesson Review

- Documents do not reside in the Primavera database. To access documents via Primavera, a document record must be created in the WPs & Docs window.
- After adding a document record, specify its private and/or private location. Specifying a public location enables all project participants to view the document.
- You can designate a document as a work product or reference document and assign it to an activity or WBS element.
- Maintain general information of each project document such as version, revision date, and author.

# Formatting the Schedule Data

## Lesson 12



# Formatting Schedule Data

- Objectives
  - Group activities according to a specific criteria
  - Sort activities
  - Apply a filter
  - Create a filter

# Grouping Data

- *Grouping* is a flexible way to organize data into categories that share common attributes.
- You can group data to create customized layouts. You can also use grouping to quickly view subtotal data in the group title bands, view summary bars in the Gantt Chart, and summarize data for reporting purposes.
- Grouping is available in all windows and most dialog boxes
  - Each window or dialog box has its own grouping options
  - Some windows have customized/ pre-defined groups
- Activities can be grouped by hierarchical fields such as WBS, activity codes, and project codes.
- Activities can be grouped by data fields such as dates, costs, total float, and other numeric data.

# Group & Sort Dialog Box

- The *Group & Sort dialog box* is used to set up the organization of activities on screen:
  - Show Group Totals – Choose to display or hide the total values for grouping bands. If you mark the Show Group Totals checkbox, you have the additional options to Show Grand Totals and Show Summaries Only.
    - *Show Grand Totals* – Mark to display a grand total row at the top of the layout
    - *Show Summaries Only* – Mark to hide the activities within each group title band
  - Shrink Vertical Grouping Bands – Minimize the width of the vertical grouping bands displayed in the Activity Table. This setting is available in windows that have the Group and Sort By, Customize Layout option

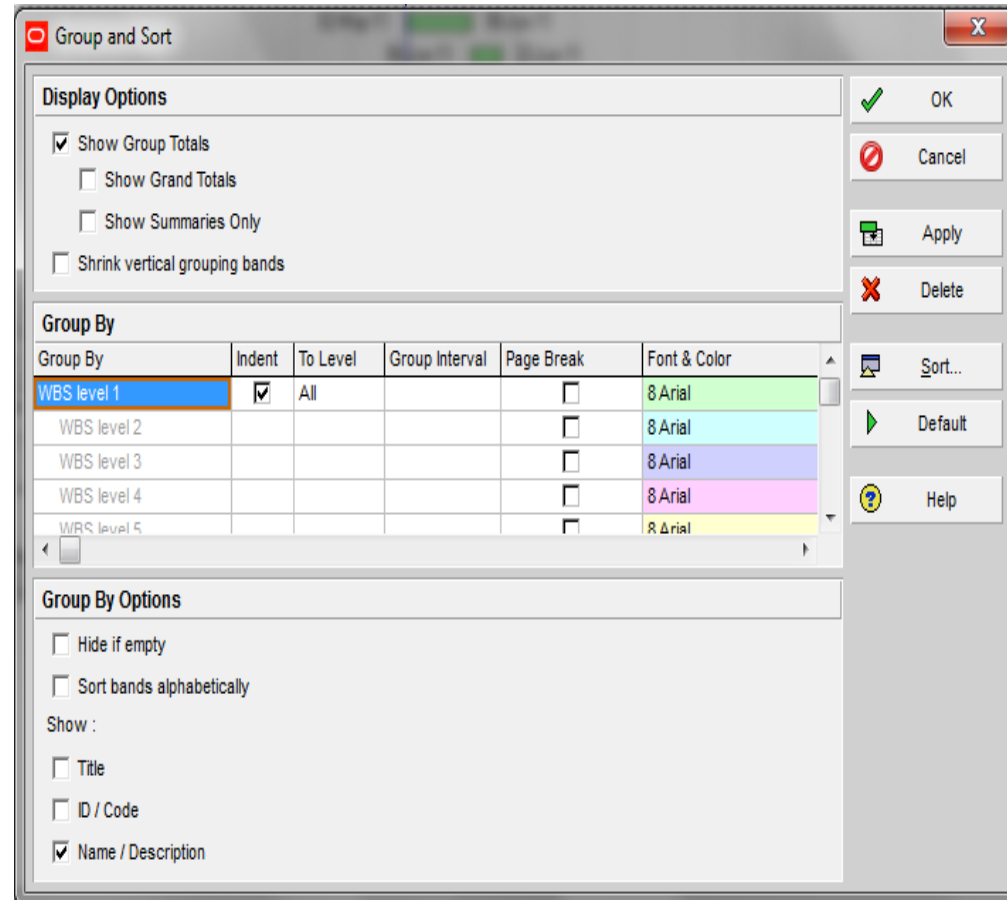
# Group & Sort Dialog Box



- **Group By** – Lists data items used to group the current display
  - *Indent* – Available if the selected data item is hierarchical
  - *To Level* – Indicates the no. of levels to display when grouping by a hierarchical data item
  - *Group Interval* – Indicates the interval by which you want to group the selected data item
  - *Font & Color* – Displays the font/color for each group title band
  - *Hide if empty* – Mark to hide the group title bands that do not contain activities
  - *Sort Bands Alphabetically* – Mark the checkbox to sort the grouping bands alphabetically rather than their order in their respective hierarchy. This checkbox is disabled for any grouping that is not hierarchical
  - *Show Title* – Mark to display the name of the field that the layout is grouped by; the value is also displayed
  - *Show ID/Code* – Mark the checkbox to display the ID or code value on the grouping band
  - *Show Name/Description* – Mark the checkbox to display the name or description on the grouping band

# Group & Sort Dialog Box

- Exercise
  - Steps
    - Open a project, EC00515
    - Confirm you are in Activities window
    - In the Layout option bar, click Layout, Open
    - Select a layout, Classic WBS Layout, and click Open
    - In the Layout option bar, click Group & Sort...



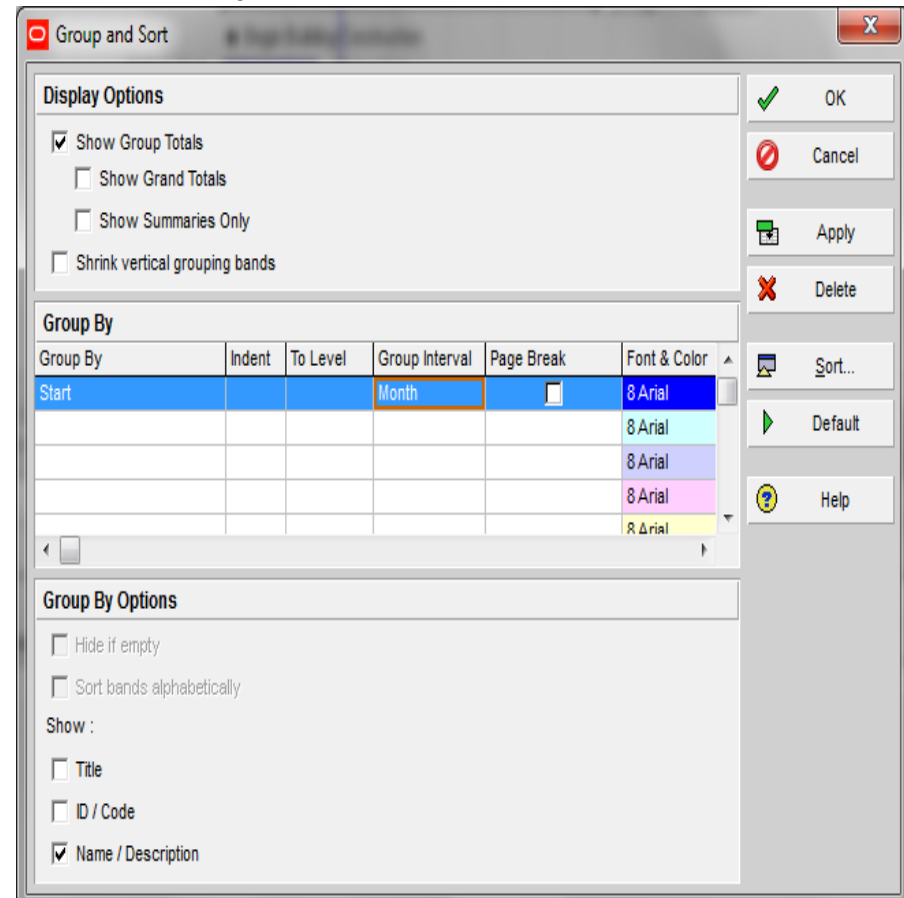
# Grouping By Date

- Grouping a layout by date allows you to identify activities that are scheduled to occur within a particular time period.

- Exercise

- Steps

- In the Group By column, select Start
    - In the Group Interval column, select Month
    - Click Ok
    - In the Layout option bar, click Layout, Save As
    - Type a Layout name <Monthly Schedule>, and then click Save





# Collapsing/Expanding Grouped Data

- Collapse group bands are used to control the level of detail you are viewing. This functionality is especially useful if you want to focus on a specific portion of the layout.
- In the Activity Table, view summary information for the displayed columns.
- In the Gantt Chart, summary bars are displayed to represent the Start/Finish dates in each group band.
- Exercise
  - Steps
    - In the Layout option bar, click Collapse All
    - Click + (sign) to expand a group band

# Sorting Activities

- **Sorting** determines the sequence in which activities are listed within each grouping band. Based on the data item you choose, you can sort alphabetically, numerically, or chronologically.
- **Sorting by Single Criteria** – To sort by a single criteria, click the data item's column title

-  indicates sort in ascending order
-  indicates sort in descending order

Layout: Classis WBS Layout				Filter
Activity ID	Activity Name	Start	Finish	
Nov 2010				
EC1000	Design Building Addition	01-Nov-10 A	19-Jan-11 A	
EC1010	Start Office Building Addition Project	01-Nov-10 A		
Jan 2011				
EC1030	Review and Approve Designs	17-Jan-11 A	17-Feb-11 A	
Feb 2011				
EC1040	Assemble Brick Samples	17-Feb-11 A		
EC1050	Assemble Technical Data for Heat F	16-Feb-11 A	25-Feb-11 A	
EC1060	Assemble and Submit Flooring Samp	25-Feb-11 A		
EC1070	Review and Approve Brick Samples	28-Feb-11 A	13-Apr-11 A	
EC1080	Review and Approve Flooring	25-Feb-11 A	11-Apr-11 A	
EC1090	Begin Building Construction	28-Feb-11 A		
EC1100	Site Preparation	23-Feb-11 A	18-Apr-11 A	
EC1160	Review Technical Data on Heat Pu	24-Feb-11 A	06-Apr-11 A	
Mar 2011				
EC1180	Prepare and Solicit Bids for Brick Ext	18-Mar-11 A	13-Apr-11 A	
Apr 2011				
EC1170	Prepare and Solicit Bids for Flooring	04-Apr-11 A	06-May-11	
EC1190	Prepare and Solicit Bids for Heat Pu	14-Apr-11 A	04-May-11	

- **Exercise**
  - **Steps**
    - Click on column title, Original Duration



# Filtering Activities

- A *filter* is a set of instructions that determines which activities should display on screen.
- Filters enable you to create customized layouts by limiting the no. of activities displayed; helping you to focus on critical activities.
- A set of pre-defined filters is provided, however user-defined filters can also be created.
- Filters are divided into the following groupings:
  - Default
    - Available to all users
    - 15 pre-defined filters
    - Cannot be deleted or modified
  - Global
    - Available to all users
  - User-defined
    - Available to current user for all accessible projects

# Filtering Activities

- One or more filters may be applied to a layout at a time
- Multiple criteria for selection may be used within a single filter
- Filter specifications can be saved and re-applied
- Filters can be saved as a part of a layout

# Filter Dialog Box

- *All Activities* – Mark to show all activities in the current layout
- Show activities that match – When more than one filter is marked, you must select one of the following options:
  - *All selected filters* – Mark to include the activities that meet the criteria of each selected filter
  - *Any selected filter* – Mark to include the activities that meet the criteria of at least one of the selected filters
- Replace activities shown in current layout – Displays only the activities that meet the criteria of each selected filter
- Highlight activities in current layout which match criteria – Highlights only the activities in the current layout that meet the criteria of each selected filter

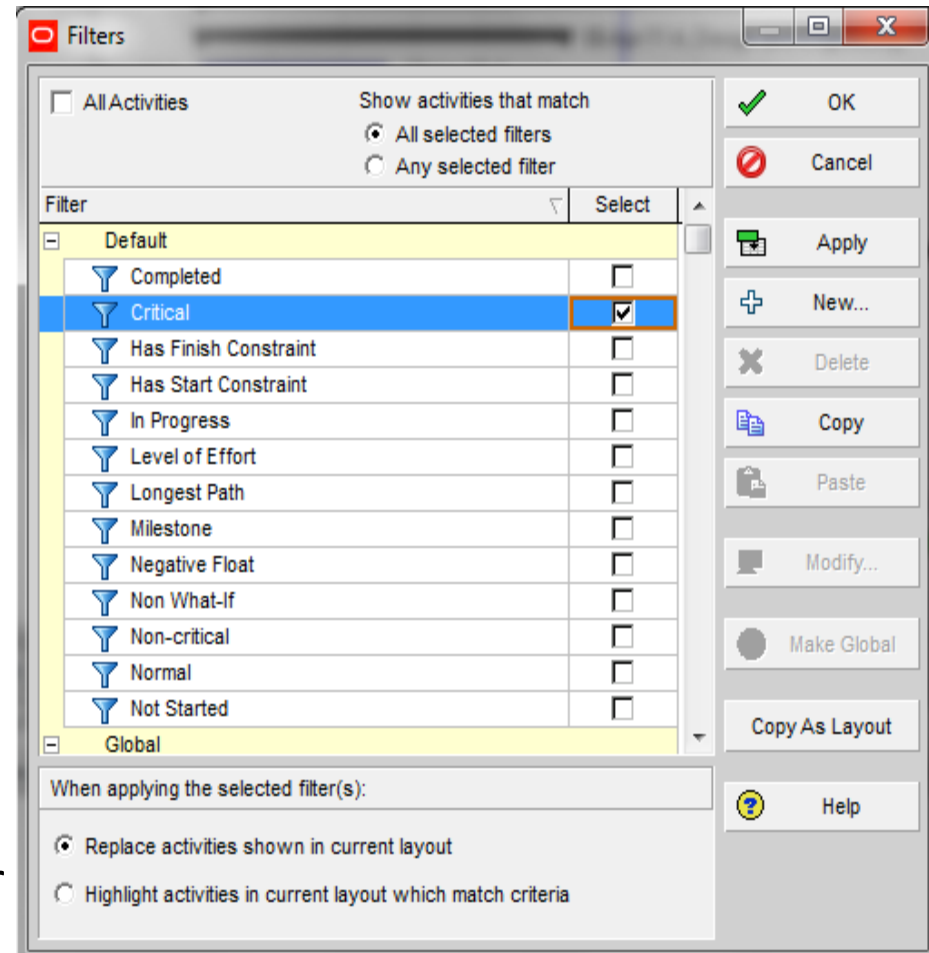
# Applying a Default Filter

- To view critical activities, you can run the Critical default filter Sorting By descending order.

- Exercise

- Steps

- In the Layout option bar, click Filters
    - In the Select column, mark the checkbox Critical
    - In the When applying the selected filter(s) section, Select Highlight activities in the current layout with match criteria
    - Click Ok to execute the filter



# Create a Filter

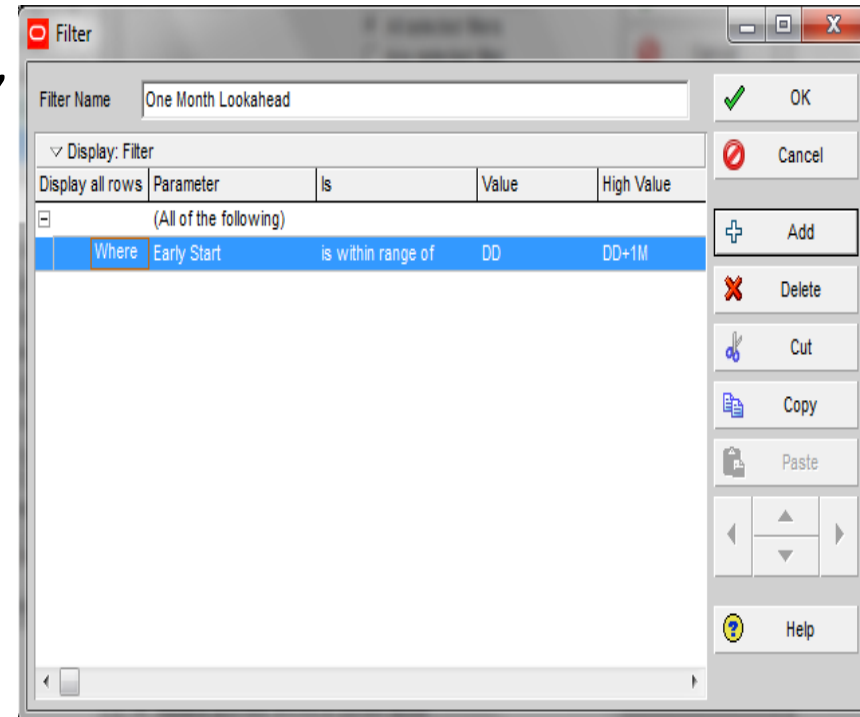
- You can create filters based on single line of criteria or multiple criteria.
- A convenient single-criteria filter to use throughout the lifecycle of a project is a lookahead filter. It displays the activities that are scheduled to occur within a given amount of time. E.g. the next month.
- You will execute the new filter to display all activities scheduled to occur within the next month, and then save the layout as One Month Lookahead
- Exercise
  - Steps
    - In the Filters dialog box, click New
    - In the Filter Name field, type <One month lookahead>
    - Click in the Parameter cell and select a data item, Early Start
    - Double-click in the Is cell and select a filter criteria, is within range of
    - Double-click in the Value cell and select a date, DD (data date)
    - Double-click in the High value cell and type <DD+1M>
    - Click Ok to close the Filter Specification dialog box

# Create a Filter

- Exercise

- Steps

- Verify the new filter is selected, **One Month Lookahead**
    - Verify Replace activities shown in the current layout is selected
    - Click Ok to execute the filter
    - In the Layout option bar, click **Group & Sort**
    - Mark the checkbox, **Hide if empty**
    - Click Ok
    - In the Layout option bar, click **Layout, Save As**, type a layout name **<One Month Lookahead>**
    - Click Save



# Using Multiple Filters

- If you are unable to achieve your goal with single filter, then you can also run two filters simultaneously.
- Exercise
  - Steps
    - In the Layout option bar, click Filters
    - In the Select column, mark the checkbox next to filter, Critical
    - Scroll-down and confirm that the One Month Lookahead filter is also selected
    - Click Ok to execute filters
    - In the Layout option bar, click Save As
    - Type a layout name, One Month Lookahead – Critical Activities
    - Click Save

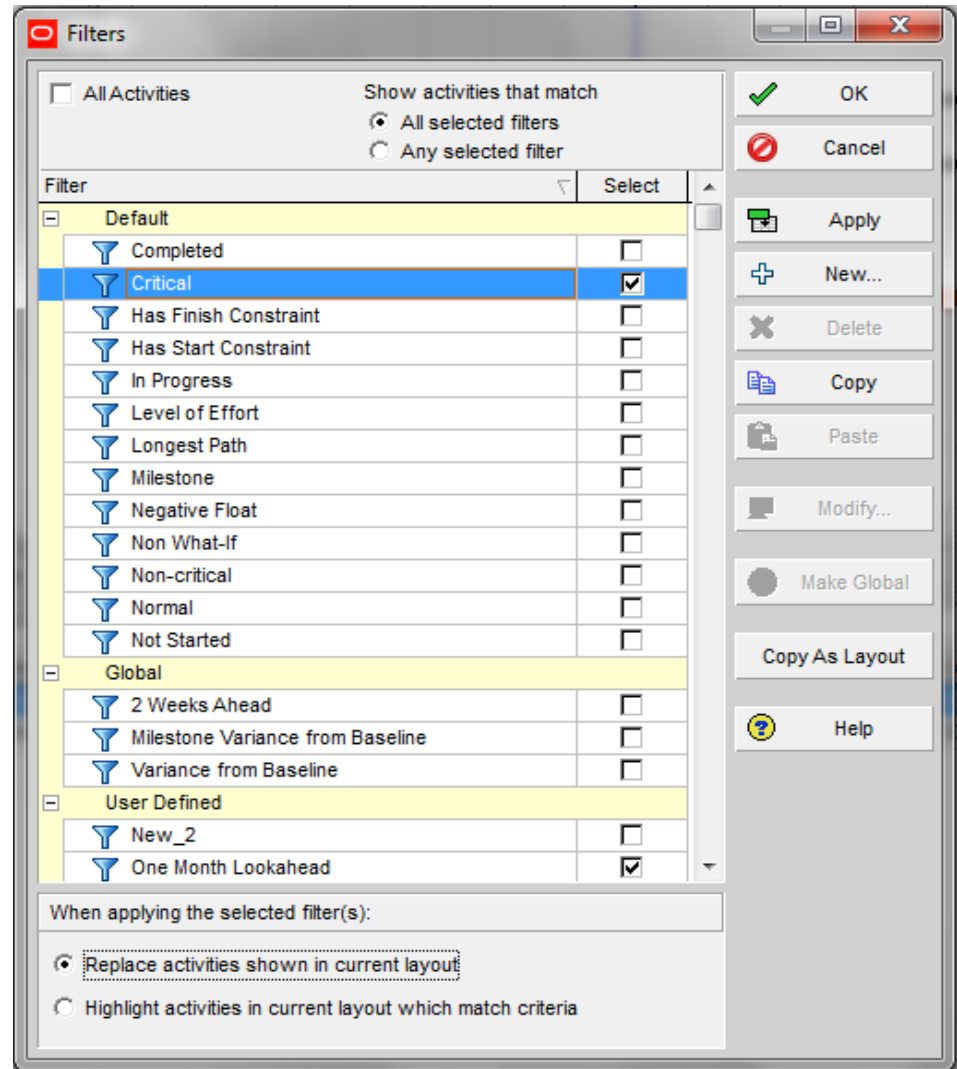
# Applying All Activities Filter

- To refresh your screen with all activities , you can run the all Activities filter.

## • Exercise

### • Steps

- In the Layout option bar, click Filters
- Mark the All Activities checkbox
- Click Ok to execute the filter





# Lesson Review

- Use grouping and sorting to organize activities in a layout
- Grouping is available in all windows and most dialog boxes
- The Group & Sort dialog box provides options to show grand totals and summaries and modify the font and color for each grouping selected. You can also sort the groups alphabetically, numerically, or chronologically
- Use filters to customize the layout or only show activities that satisfy the filter criteria. You can apply multiple filters to a layout

# Assigning Resources & Cost

## Lesson 13

# Assigning Resources & Cost



- Objectives

- Assign labor, non-labor, and material resources to activities
- Adjust budgeted units/time for a resource
- Assign expenses to activities

# Steps for Resource Management

- Following are the basic steps for resource management:
  - Defining resources in the Resource window
    - Define resource availability
    - Set up the resource name, description, cost, roles, and attributes that control the resource's effect on the schedule
  - Assigning resources in the Activity window
    - Enter the resource name and amount of work planned
    - The cost is calculated based on the resource quantity and price/unit as defined in the Resource window
  - Analyze resources and costs in the Activity window
    - Use the Resource Usage Profile to view resource quantity/cost information graphically. The profile helps you analyze when, and to what extent, a resource is allocated
    - Use the Resource Usage Spreadsheet to view resource quantity/cost information in a tabular format. The spreadsheet also helps you analyze resource allocation
    - Use columns to view total costs

# Defining Resources

- A resource is anything used to complete an activity.
- The *Resources window* contains information about all resources within the organization, enabling centralized resource management.
- Resources are divided into three categories:
  - *Labor (People)* – Measured in units of time
    - Generally re-used between activities/ projects
    - Recorded in terms of price/unit – E.g. Rs. 300/hour
  - *Non-labor (Equipment)* – Measured in units of time
    - Recorded in terms of price/unit
  - *Material* – Measured in units other than time – E.g. Rs. 15/sq.ft

# Defining Resources

- Exercise
  - Steps
    - In the File menu, click Close All
    - In the Directory bar, click Resources
    - In the Display option bar, click Filter By, All Resources

# Defining Resources



Primavera P6 Professional R8.2 : TUP (Technology Upgradation Project)

File Edit View Project Enterprise Tools Admin Help

**Resources**

Projects Activities Resources

Display: All Resources

Resource ID	Resource Name	Resource Type	Unit of Measure	Primary Role	Default Units / Time
E&C Resources	E&C Resources	Labor			8/d
Trades	Trades	Labor			8/d
INSP	Inspections	Labor			22/d
Cretefinisher	Concrete Finisher	Labor		Trades	0/d
Hydro	Hydroblaster	Labor			22/d
Operator	Operator	Labor		Trades	0/d
OPTGP	Operations Test Group	Labor			8/d
Elec	Electrician	Labor		Trades	8/d
Paint	Painter	Labor		Trades	8/d
Exc	Excavator	Labor		Trades	8/d
Floor	Floor and Carpet Layer	Labor		Trades	8/d
ImWk	Ironworker	Labor		Trades	8/d
GenLabor	Laborer-Construction	Labor		Trades	8/d
Plumb	Plumber	Labor		Trades	8/d
RCarp	Rough Carpenter	Labor		Trades	8/d
FCarp	Finish Carpenter	Labor		Trades	8/d
Elev Inst	Elevator Installer	Labor		Trades	8/d

General Codes Details Units & Prices Roles Notes

Resource ID: E&C Resources    Resource Name: E&C Resources

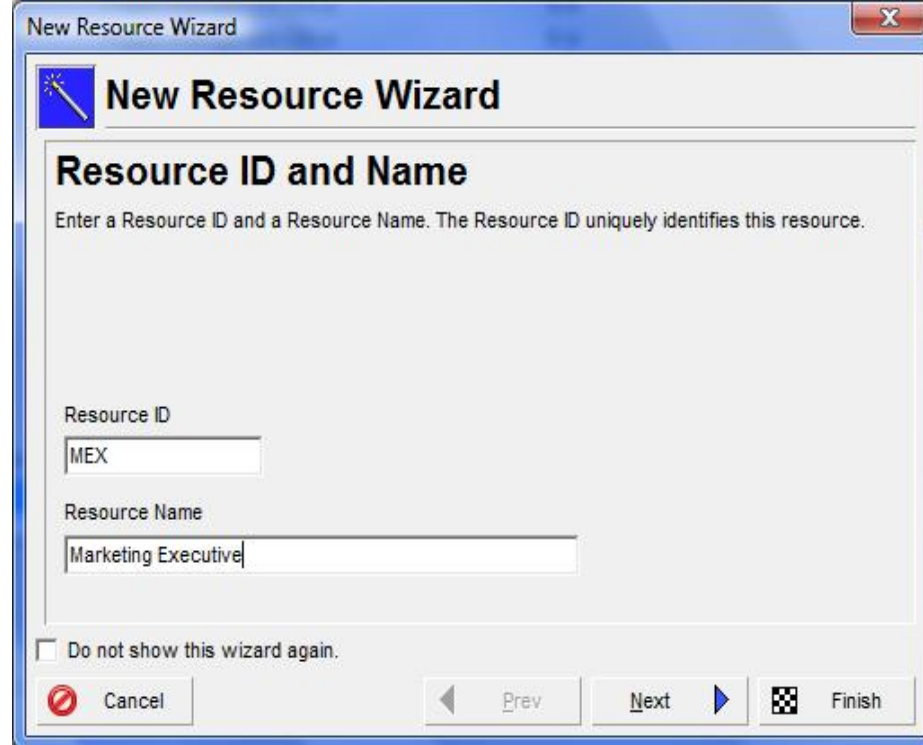
Employee ID:    Title:

E-Mail Address:    Office Phone:     Active

Portfolio: All Projects    Access Mode: Shared    Data Date: 01-Feb-12    Baseline: Current Project    User: admin    DB: PMDB (Professional)

# Defining Resources

- Exercise
  - Steps
    - Click Add on the Command bar
    - Write ID: MEX
    - Name: Marketing Executive
    - Click Next
    - Select Resource Type: Labor
    - Click Next
    - Write Cost: 100
    - Click Next
    - Click Finish



**New Resource Wizard**

**Resource ID and Name**


Enter a Resource ID and a Resource Name. The Resource ID uniquely identifies this resource.

Resource ID  
MEX

Resource Name  
Marketing Executive

Do not show this wizard again.

Cancel Prev Next Finish



**New Resource Wizard**

**Resource Type**

Specify whether this resource is Labor, Nonlabor or Material.

The units of work performed by this resource will be classified as Labor, Nonlabor or Material according to this setting. Choose Labor or Nonlabor to measure work in units of time. To measure work in units other than time, choose Material and select a Unit of Measure.

Resource Type

Labor ( People )

Nonlabor ( Machinery, Equipment, etc. )

Material ( Supplies )

Unit of Measure

Do not show this wizard again.

Cancel Prev Next Finish



# Defining Resources



**New Resource Wizard**

## Select Existing Calendar

Select an existing calendar for this resource.

Click on the View/Edit button to view and edit the calendar.

Calendar Name  
Corporate - Standard Full Tim ... View/Edit

Do not show this wizard again.

Cancel Prev Next Finish



**New Resource Wizard**

## Units / Time & Prices

Edit the resource's price, default and maximum units per time period (per hour, day, week, etc.).

Default units/time is the value applied by default for new resource assignments. They are displayed either as a percentage or as units per duration. Maximum units per time is the maximum amount of work that this resource can perform per time on assigned activities, for example 8 hours per day.

Price/Unit  
\$100.00/h

Default Units/Time  
8/d

Max Units/Time  
8/d

Do not show this wizard again.

Cancel Prev Next Finish



**New Resource Wizard**

## Auto-Compute Actuals

Primavera P6 Professional R8.2 will automatically update the actual units for this resource if you select this option.

When auto-compute is selected, the actual units are updated assuming that work is proceeding according to plan. The actual units are based on the percent complete of the activity. This can be a significant time-saver in gathering actuals for your project.

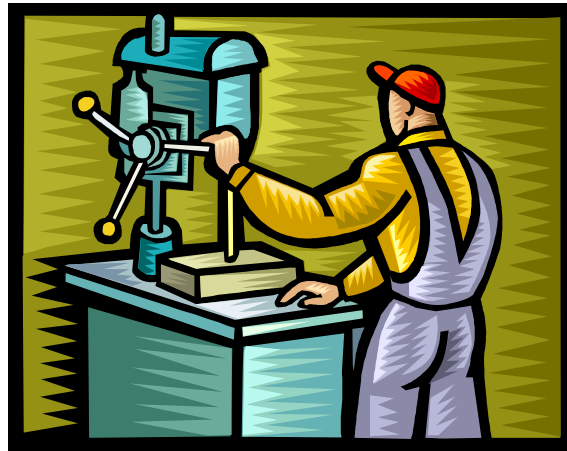
Auto-compute the actuals for this resource.  
 Do not auto-compute actuals.

Do not show this wizard again.

Cancel Prev Next Finish

# WORKSHOP

## Defining Resources



# Resource Dictionary



ID	Name	Units	Price	Type
MEX	Marketing Executive	Hour	100	Labor
PM	Project Manager	Hour	500	Labor
ITO	IT Officer	Hour	200	Labor
TM	Training Material	Number	100	Material
DAR	Design Architect	Hour	300	Labor

# Assigning Resources

- Depending on numerous factors; including the type of activity or type of resource, you may need to adjust Budgeted Units or Units/Time when assigning a resource
  - *Budgeted Units* – The number of units (e.g. hours) that a resource is assigned to work on activity
  - *Units/time* – The no. of units (hours) a resource is scheduled to work in a specific time period (e.g. 8 hrs/day)

# Assigning a Labor Resource

- Assign a resource directly from the Resource Dictionary. Resources in the dictionary can be used on any activity. An unlimited no. of resources can be assigned.
- The Search feature can help you quickly search the resource item in the dictionary.
- Exercise
  - Steps
    - Select an Activity, A1020- Prepare Inventory List
    - In the Resources tab (bottom), click Add Resource
    - Select MEX-Marketing Executive, click Assign button
    - Close the Assign Resource Dialog

# Assigning a Labor Resource



Primavera P6 Professional R8.2 : TUP (Technology Upgradation Project)

File Edit View Project Enterprise Tools Admin Help

**Activities**

Projects Activities Resources

Layout: Classic Schedule Layout Filter: All Activities

Activity ID	Activity Name	Original Duration	Remaining Duration	Schedule % Complete	Start
<b>TUP.1 Market Research</b>					
A1010	Review Literature Search	10	10	0%	01-Feb-12
A1020	Prepare Inventory List	2	2	0%	15-Feb-12
A1030	Prepare Vendor List	2	2	0%	16-Feb-12
A1040	Perform Market Survey	10	10	0%	20-Feb-12
A1050	Formulate Survey Findings	5	5	0%	05-Mar-12
A1060	Perform SWOT Analysis	3	3	0%	12-Mar-12
A1070	Document Results and Hanc	2	2	0%	15-Mar-12
<b>TUP.2 Construction Design</b>					
<b>TUP.2.1 Building Design</b>					
A1080	Prepare Concept Design	10	10	0%	16-Mar-12
A1090	Prepare Tender Documents	10	10	0%	26-Mar-12
A1100	Develop 100% Design Docu	10	10	0%	04-Apr-12
<b>TUP.2.2 Network Infrastructure Desi</b>					
A1110	Prepare LAN Layout	10	10	0%	12-Apr-12
A1120	Prepare Domain/Hardware L	10	10	0%	26-Apr-12

**Assign Resources**

Display: All Resources

Search

Resource ID	Resource Name
CharlesM	Mandy Charles, \
LaffertyW	Vanessa Lafferty
PaxsonD	Dan Paxson
ITCon	IT Consultant
MEX	Marketing Execu
PM	Project Manager
ITO	IT Officer
TM	Training Material
DAR	Design Architect

Assign

General Status Resources Predecessors Successors Feedback

Activity: A1020 Prepare Inventory List Project: TUP

Resource ID Name	Primary Resource	Resource Type	Remaining Units / Time	Original Lag	Start	Finish	Budgeted Units	Actual Regular Units	Remaining Early Units	Role
MEX.Marketing E	<input checked="" type="checkbox"/>	Labor	8/d	0	15-Feb-12	16-Feb-12	16	0	16	

Add Resource Add Role Assign by Role Remove

Portfolio: All Projects Access Mode: Shared Data Date: 01-Feb-12 Baseline: Current Project User: admin DB: PMDB (Professional)

# Adjusting Resource's Budgeted Units/Time



- You can adjust Budgeted Units/time after making a resource assignment. You can manually type Budgeted Units/Time value for a resource in Resources tab to adjust two laborers to perform an activity.
- Exercise
  - Steps
    - In Resources tab, enter 16/d in Budgeted Units/Time column

# Assigning a Material Resource

- Material resources are not measured in units of time.
- You can add units of measurement in Admin → Admin Categories.
- After the units of measure is created, it is assigned to the material resource in the Resource Dictionary.
- Exercise
  - Select an Activity, A1240-Print Training Material
  - Add a Resource TM-Training Material from Resources tab
  - Enter 40 in Budgeted Units column



# Assigning a Material Resource



Primavera P6 Professional R8.2 : TUP (Technology Upgradation Project)

File Edit View Project Enterprise Tools Admin Help

Activities

Projects Activities Resources

Layout: Classic Schedule Layout Filter: All Activities

Activity ID	Activity Name	Original Duration	Remaining Duration	Schedule % Complete	Start
A1140	Prepare and Review RFP	2	2	0%	27-Mar-12
A1150	Advertise in Newspaper	2	2	0%	29-Mar-12
A1160	Open Technical Bids	0	0	0%	
A1170	Review and Score Technica	10	10	0%	02-Apr-12
A1180	Open Financial Bids	0	0	0%	
A1190	Negotiate with Bidders	5	5	0%	16-Apr-12
A1200	Award Contract	0	0	0%	
<b>TUP.3.2 Training Material</b>		<b>22</b>	<b>22</b>	<b>0%</b>	<b>23-Apr-12</b>
A1210	Prepare and Review Draft M	8	8	0%	23-Apr-12
A1220	Review Training Material by I	5	5	0%	03-May-12
A1230	Finalize Training Material	5	5	0%	10-May-12
A1240	Print Training Material	4	4	0%	17-May-12
<b>TUP.3.3 Training Delivery</b>		<b>13</b>	<b>13</b>	<b>0%</b>	<b>17-May-12</b>
A1250	Deliver Training Course	5	5	0%	17-May-12
A1260	Prepare & Submit Assessmer	8	8	0%	24-May-12

Assign Resources

Display: All Resources

Search

Resource ID	Resource Name	Resource Ty
Material	Material Resources	Material
MEX	Marketing Executive	Labor
PM	Project Manager	Labor
ITD	IT Officer	Labor
TM	Training Material	Material
DAR	Design Architect	Labor

Assign

General Status Resources Predecessors Successors Feedback

Activity A1240 Print Training Material Project TUP

Resource ID Name	Primary Resource	Remaining Units / Time	Original Lag	Start	Finish	Budgeted Units	Budgeted Units / Time	Actual Regular Units	Remaining Units	Role
TM.Training Mat	<input type="checkbox"/>	10/d	0	17-May-12	22-May-12	40	10/d	0	40	

Add Resource Add Role Assign by Role Remove

Portfolio: All Projects Access Mode: Shared Data Date: 01-Feb-12 Baseline: Current Project User: admin DB: PMDB (Professional)

# Planning Costs

- Costs are planned and managed at the activity level.
- There are two types of costs:
  - Resource – Calculated based on resource assignments
  - Expense – Lump sum costs that are manually entered

# Planning Costs - Resources

- The cost of a resource can be calculated based on the Price/Unit defined in the Resource Dictionary and the Budgeted Units assigned to the activity
- Budgeted Cost = Budgeted Units x Price/Unit

# Planning Costs - Expenses

- *Expenses* are non-resource costs associated with a project. They are typically one-time expenditures for non-usable items. E.g. Facilities, Travel, Overhead, and Training.
- Expenses are manually assigned at activity level. You can enter a single lump sum expense or you can enter the number of units and the Price/Unit.
- Expense categories can be assigned to classify the expense.
- Expenses can be accrued at the start, end, or uniformly over the duration of an activity.
- A unit of measure can be used to label the quantity. E.g. each, pounds, square feet.

# Planning Costs - Expenses

- Exercise

- Steps

- Select an Activity, A1030- Perform Market Survey
    - Click the Expense tab (bottom)
    - Click Add
    - Type a Expense Item <Market Travel>
    - Double-click in the Expense Category field
    - Select an Expense Category <Travel>
    - In the Accrual Type field, verify Uniform over Activity
    - In the Budgeted Units field, type <10.00>, press Enter
    - In the Unit of Measure field, type <visit> and press Enter
    - In the Price/Unit field, type <500> and press Enter.

# Planning Costs - Expenses



Primavera P6 Professional R8.2 : TUP (Technology Upgradation Project)

File Edit View Project Enterprise Tools Admin Help

Activities

Projects Activities Resources

Layout: Classic Schedule Layout Filter: All Activities

Activity ID	Activity Name	Original Duration	Remaining Duration	Schedule % Complete	Start	2010		Qtr 1, 2011			Qtr 2, 2011			
						Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul
<b>TUP Technology Upgradation</b>														
A1000	Project Kickoff	0	0	0%	01-Feb-12									
A1280	Handover Design (Project Cc	5	5	0%	20-Jun-12									
<b>TUP.1 Market Research</b>														
A1010	Review Literature Search	10	10	0%	01-Feb-12									
A1020	Prepare Inventory List	2	2	0%	15-Feb-12									
A1030	Prepare Vendor List	2	2	0%	16-Feb-12									
A1040	Perform Market Survey	10	10	0%	20-Feb-12									
A1050	Formulate Survey Findings	5	5	0%	05-Mar-12									
A1060	Perform SWOT Analysis	3	3	0%	12-Mar-12									

General Status Resources Predecessors Successors Codes Expenses Feedback Notebook Relationships Risks Steps Summary WPs & Docs

Activity: A1040 Perform Market Survey Project: TUP

Expense Item	Expense Category	Accrual Type	Budgeted Units	Price / Unit	Budgeted Cost	Actual Cost	Remaining Cost	Unit of Measure	Vendor	Auto Compute Actuals
Market Travel	Travel	Uniform over Activity	10.000	\$500.00	\$5,000.00	\$0.00	\$5,000.00	Visit		<input type="checkbox"/>

+ Add - Delete

Portfolio: All Projects Access Mode: Shared Data Date: 01-Feb-12 Baseline: Current Project User: admin DB: PMDB (Professional)

# Summary Tab

- Use the *Summary tab* to display unit, cost, or date information for the selected activity
- Select Display Cost at the bottom of the page to display the itemized and total cost of the selected activity. The activity's costs are broken into
  - Labor Cost
  - No-Labor Cost
  - Material Cost
  - Expenses
  - Total Cost
- Exercise
  - Steps
    - Verify an Activity, A1020-Prepare Inventory & Vendor List
    - Click the Summary tab (bottom)
    - Select Display Cost (option)

# Summary Tab



Primavera P6 Professional R8.2 : TUP (Technology Upgradation Project)

File Edit View Project Enterprise Tools Admin Help

Activities

Projects Activities Resources

Layout: Classic Schedule Layout Filter: All Activities

Activity ID	Activity Name	Original Duration	Remaining Duration	Schedule % Complete	Start	2010	Qtr 1, 2011			Qtr 2, 2011				
						Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul
<b>TUP Technology Upgradation</b>		104	104	0%	01-Feb-12									
A1000	Project Kickoff	0	0	0%	01-Feb-12									
A1280	Handover Design (Project Cc	5	5	0%	20-Jun-12									
<b>TUP.1 Market Research</b>		33	33	0%	01-Feb-12									
A1010	Review Literature Search	10	10	0%	01-Feb-12									
A1020	Prepare Inventory List	2	2	0%	15-Feb-12									
A1030	Prepare Vendor List	2	2	0%	16-Feb-12									
A1040	Perform Market Survey	10	10	0%	20-Feb-12									
A1050	Formulate Survey Findings	5	5	0%	05-Mar-12									
A1060	Perform SWOT Analysis	3	3	0%	12-Mar-12									

General Status Resources Predecessors Successors Codes Expenses Feedback Notebook Relationships Risks Steps Summary WPs & Docs

Activity: A1020 Prepare Inventory List Project: TUP

	Budgeted	Actual	Remaining	% Complete	At Completion	Complete Variance
Labor Cost	\$3,200.00	\$0.00	\$3,200.00	0%	\$3,200.00	\$0.00
Nonlabor Cost	\$0.00	\$0.00	\$0.00	0%	\$0.00	\$0.00
Material Cost	\$0.00	\$0.00	\$0.00	0%	\$0.00	\$0.00
Expenses	\$0.00	\$0.00	\$0.00	0%	\$0.00	\$0.00
Total Cost	\$3,200.00	\$0.00	\$3,200.00	0%	\$3,200.00	\$0.00

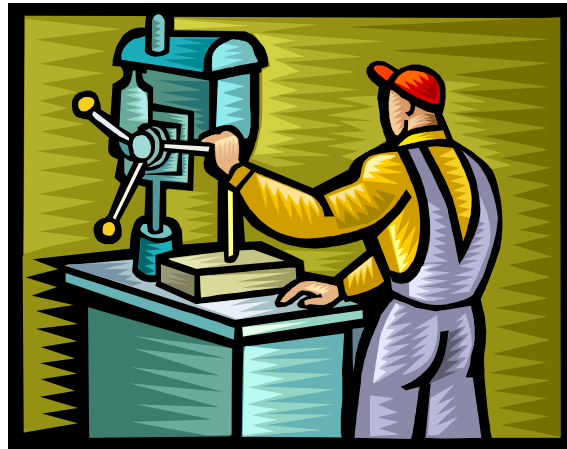
Display units
  Display cost
  Display dates

Portfolio: All Projects Access Mode: Shared Data Date: 01-Feb-12 Baseline: Current Project User: admin DB: PMDB (Professional)



# WORKSHOP

## Assigning Resources & Costs



# Lesson Review

- Three steps in resource management are defining resource; assigning resources; and analyzing resources
- Assign a resource directly from the Resource dictionary
- When you assign a resource to an activity, the calculation is performed:  $\text{Duration} \times \text{Units/Time} = \text{Units}$
- When you assign a resource, you can adjust Units/Time or Budgeted Units
- You can also designate a primary resource

# Analyzing Resources

## Lesson 14

# Analyzing Resources



- Objectives
  - Display the Resource Usage Profile
  - Format a Profile
  - Format the Timescale

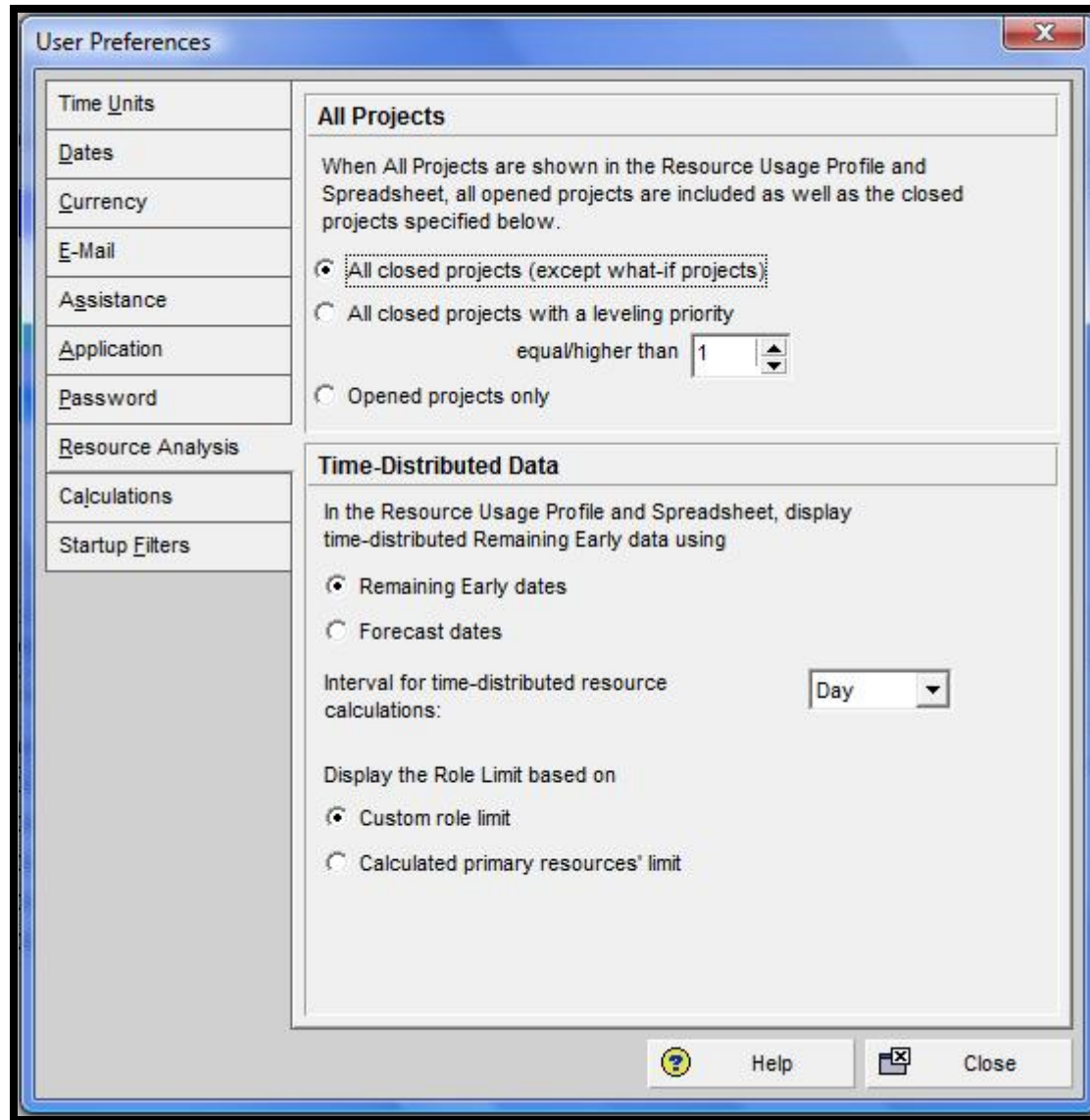
# Resource Analysis Settings

- The *Resource Usage Profile* which can be displayed in the Activities Window, enables you to view resources/ role unit and cost distribution over the period of time. You can specify how data is played in the profile via the Resource Analysis tab in User Preferences:
- All Projects
  - *All closed projects (except what-if projects)* – Displays resource/ cost usage data for
    - All projects that are open, and
    - All projects that are closed (except what-if projects)
  - *All closed projects with a leveling priority* – When electing to show remaining values for open vs. closed projects, choose this option to include data for all closed projects with the specific leveling priority
  - *Opened projects only* – Focus on resource/ cost usage in the projects currently opened
- Time-Distributed Data
  - Display data based on Remaining Early or Forecast dates
  - Select the time interval for displaying live resource allocation: hour, day, week, or month

# Resource Analysis Settings

- Exercise:
  - Steps
    - In the Edit menu, click User Preferences
    - Click the Resource Analysis tab
    - Verify All closed projects (except what-if-projects)
    - is selected
    - In the Interval for time-distributed resource calculations dropdown, select Day
    - Close the User Preferences dialog box

# Resource Analysis Settings



# Resource Usage Profile

- The *Resource Usage Profile* provides a graphical view of unit/ cost distributions over the period of time. It displays the amount of effort needed from each resource/ role on the project during each time period.
- Use the profile to determine how many hours each resource is scheduled to work; identify over-allocated resources; track expenditures per time period; and display a “banana-curve” to compare early and late dates.
- View unit/cost distributions from a specific project or all projects to which you have access.
- Display separate bars for one of the following:
  - Budgeted units/costs
  - Actual units/costs
  - Remaining Early units/costs
  - Remaining Late units/costs



# Resource Usage Profile

- The Resource Usage Profile timescale matches the timescale for the Gantt Chart
  - Formats columns, group, sort, and filter resources/ roles in the profile
  - It can be saved as a part of a layout
- You can use Resource Usage Profile information to determine which resources/ roles are over-allocated and which of them are underutilized.

# Displaying Resource Usage Profile

- Exercise

- Steps

- Open a project, EC00515 City Center Office Building Addition
    - Confirm you are in Activities Window
    - In the Layout Option bar, click Layout, Open
    - Select a layout, Resource Overallocation Profile, and then click Open
    - In the Layout Option bar, click Show on Bottom, Resource Usage Profile
    - In the Left Pane of Display Option bar of Resource Usage Profile, click Filter by, Current Project's Resources
    - Select a Resource, Operator
    - Right-Click in Histogram area, select Resource Usage Profile Options... ;
    - In Data tab → Additional Data Options, mark Show Overallocation

# Displaying Resource Usage Profile

Primavera P6 Professional R8.2 : EC00515-1 (City Center Office Building Addition)

File Edit View Project Enterprise Tools Admin Help

Activities

Layout: Resource Overallcation Profile Filter: All Activities

Activity ID	Activity Name	Start	Finish	Budgeted Labor Units	Actual Labor Units
EC105	Assemble Technical Data for	16-Feb-11 A	25-Feb-11 A	58	65
EC107	Review and Approve Brick S	28-Feb-11 A	13-Apr-11 A	240	265
EC108	Review and Approve Floorin	25-Feb-11 A	11-Apr-11 A	224	246
EC116	Review Technical Data on P	24-Feb-11 A	06-Apr-11 A	216	205
<b>Primary Resource: Elev</b>					
EC152	Install Elevator Rails and Eq	04-Apr-12	06-Apr-12	38	0
EC171	Install Elevator Cab and Finis	05-Feb-13	12-Feb-13	38	0
<b>No Primary Resource</b>					
EC101	Start Office Building Addition	01-Nov-10 A		0	0
EC104	Assemble Brick Samples	17-Feb-11 A		0	0
EC106	Assemble and Submit Floorin	25-Feb-11 A		0	0
EC109	Begin Building Construction	28-Feb-11 A		0	0
EC127	Award Contract for Heat Pur	17-May-11	25-May-11	0	0
EC128	Deliver Brick	05-May-11	06-May-11	0	0
EC133	Foundation Phase Complete		19-Sep-11	0	0

April 2011: 03, 10, 17, 24; May 2011: 01, 08, 15, 22, 29; June 2011: 05, 12, 19, 26; July 2011: 03, 10, 17, 24; August 2011: 31, 07, 14, 21, 28; September 2011: 04

17-May-11 6  
05-May-11 1

Display: Current Project's Resources

Resource ID	Resource Name	Primary Role	Default Units / Time
Floor	Floor and Carpet Lay	Trades	8/d
GenLabor	Laborer-Constructor	Trades	8/d
HWAC	HWAC	Trades	8/d
IronWkr	Ironworker	Trades	8/d
KimP	Paul Kim	Management	8/d
Operator	Operator	Trades	8/d
Paint	Painter	Trades	8/d
Plumb	Plumber	Trades	8/d
Project Contr	Project Controls	Management	8/d

Display Activities for selected...

Time Period  Resource

Display: Open Projects Only

Legend: Budgeted Units (Yellow), Actual Units (Blue), Remaining Early Units (Green), Overallocated Early Units (Red), Remaining Late Units (Light Green), Overallocated Late Units (Light Red), Limit (Black)

100h, 80h, 60h, 40h, 20h

03, 10, 17, 24; 01, 08, 15, 22, 29; 05, 12, 19, 26; 03, 10, 17, 24; 31, 07, 14, 21, 28; 04

April 2011, May 2011, June 2011, July 2011, August 2011, September

Portfolio: All Projects Access Mode: Shared Data Date: 01-May-11 Baseline: City Center Office Building Addition - B1 User: admin DB: PMDB (Professional)

6

5

4

1

2

3

# Displaying Resource Usage Profile



Item	Functionality
1. Right Pane Display Option bar	Displays a menu of the following options available for the Resource/ Role profile
2. Legend	Displays a legend for the profile's bar and/or lines. This will change depending on the data/formatting options selected.
3. Timescale	Displays the date intervals: major increment displayed on the bottom and minor increment displayed on the top.
4. Display Activities for Selected	When viewing Open Projects Only, you can mark Time Period or Resource to filter the activities in the top layout.
5. Resource/ Role Hierarchy	Lists the names of the resources/ roles. Can be filtered to show a shorter list of hierarchy. E.g. the Current Project's Resources.
6. Left Pane Display Option bar	Displays a menu of the formatting options available for the Resource/Role Hierarchy.

# Viewing All Projects or Open Projects Only



- When you select the User Preferences setting to All closed projects (except what-if-projects), you can toggle the Resource Usage Profile to display either:
  - All open projects
  - All closed projects except what-if-projects
- This option is available on the Right Pane Display Options bar
- Once you have only the open projects displayed, you can filter the top layout by either Time Period or Resource
- Exercise
  - Steps
    - In the right-pane Display Option bar, clear Show All Projects
    - In the Display Activities for Selected section, mark Time Period
    - In the right-pane, click a Time Period, 19-June-2011
    - Select a Resource, Operator



# Formatting the Profile

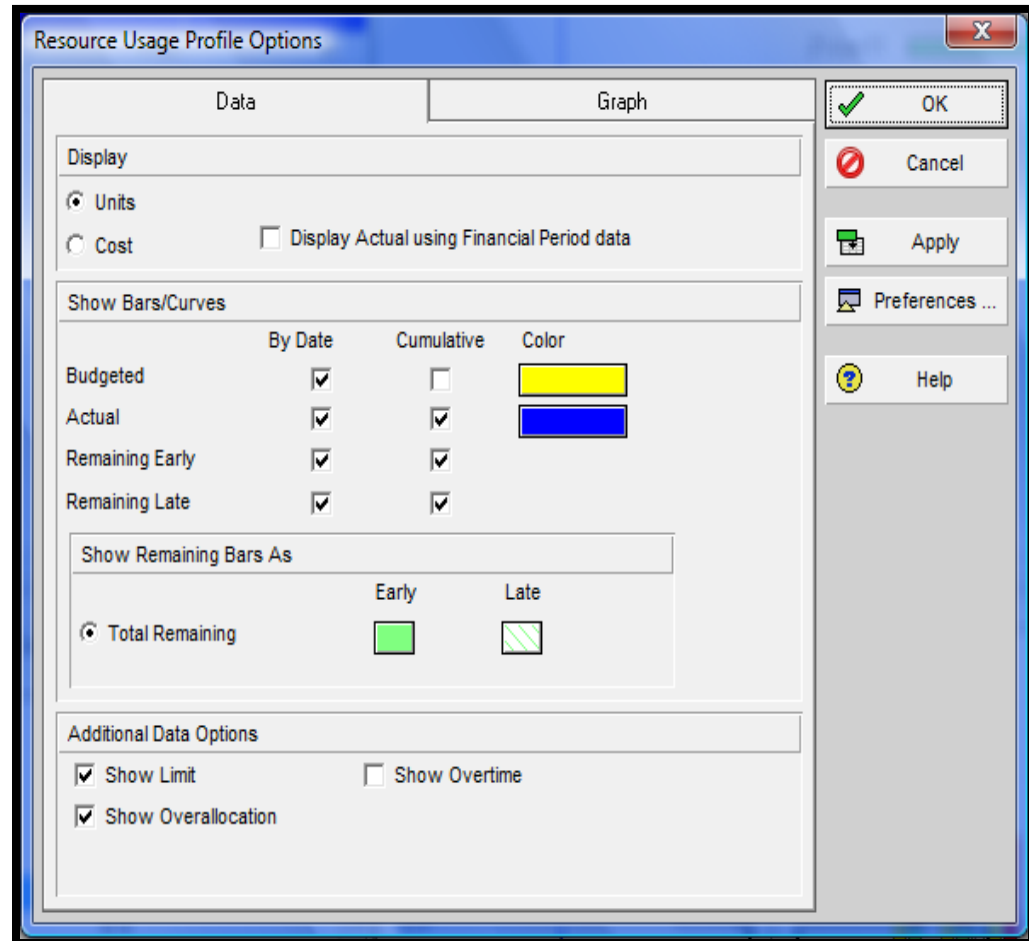
- The Resource Usage Profile can be modified by adjusting Data and Graph settings in the Resource Usage Profile Options dialog box
- Data Settings (Data Tab)
  - *Display* – Select to display units or costs
  - *Show Bars/Curves* – Mark to display By Date (periodic) bars and/or Cumulative curves and format their colors.
  - *Show Remaining Bars As* – Select a solid color to display early bars and a hatched color to display late bars.
  - *Additional Data Options* – Mark to display a line indicating resource limits; resource/role over-allocation; resource availability; or resource overtime units.

# Formatting the Profile

- Exercise

- Steps

- In the right-pane Display Option bar, click Resource Usage Profile Options
    - In the Remaining Early row, mark Cumulative



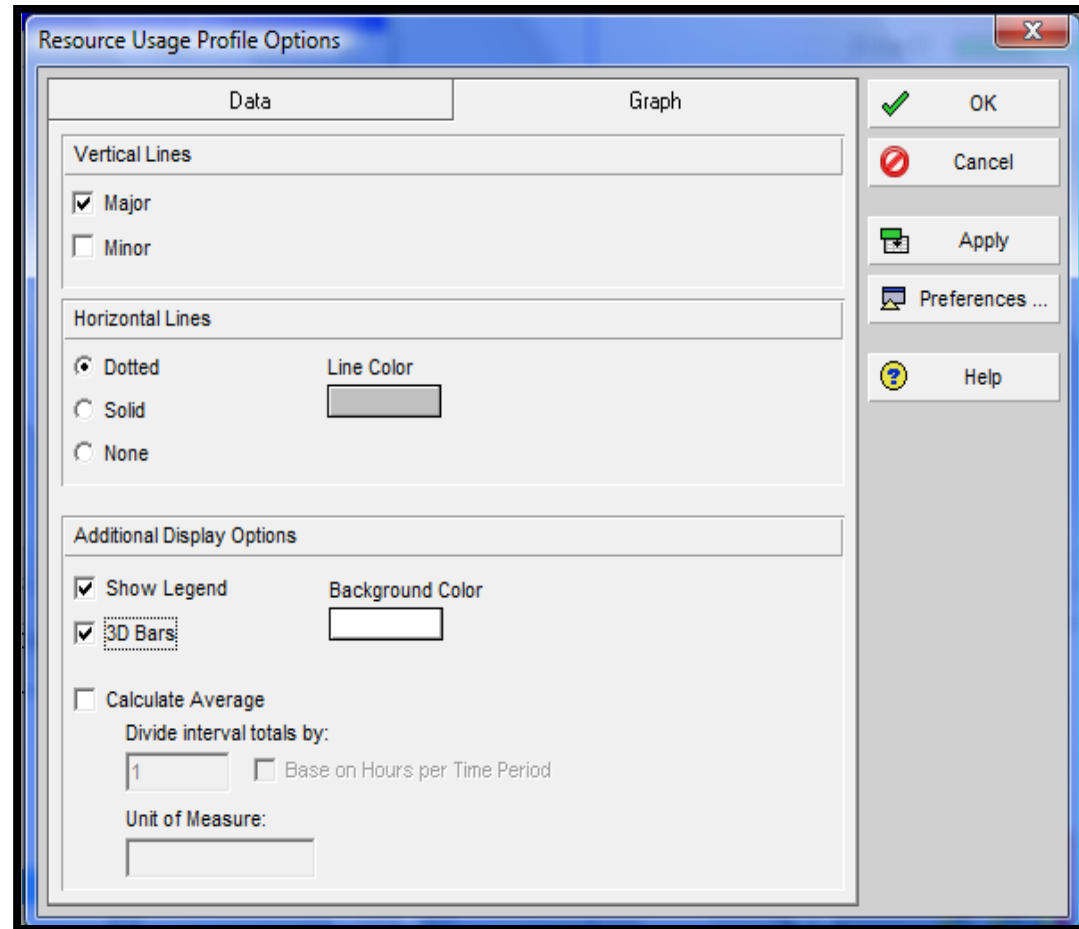


# Formatting the Profile

- Graph Settings (Graph Tab)
  - *Vertical Lines* – Choose to display major/minor sight lines based on the timescale interval.
  - *Horizontal Lines* – Choose the line style and color.
  - Additional display options
    - *Show Legend* – Display the data item; each color represents units
    - *3D Bars* – Add a third dimension to the bars
    - *Background Color* – Specify the color displayed in the background of the Resource Usage Profile
    - *Calculate Average* – Specify the values you want to use to divide the timescale interval to

# Formatting the Profile

- Exercise
  - Steps
    - Click the Graph tab
    - Clear the checkbox, Show Legend
    - Check 3D Bars
    - Click Ok



# Formatting the Profile

- Exercise
  - Steps
    - In the Display Activities for selected section, clear Time Period
    - Double-click the bar for the week of 19-June-2011, and review data
    - Close the window

# Formatting the Profile



Primavera P6 Professional R8.2 : EC00515-1 (City Center Office Building Addition)

File Edit View Project Enterprise Tools Admin Help

Activities

Layout: Resource Overallallocation Profile Filter: All Activities

Activity ID	Activity Name	Start	Finish	Budgeted Labor Units	Actual Labor Units
<b>Primary Resource: Oper</b>					
EC144	Set Mechanical and Electric	20-Jan-12	12-Mar-12	288	0
EC165	Set Heat Pump	04-Jan-13	22-Jan-13	96	0
EC167	Relocate HVAC Chiller	22-Jan-13	01-Feb-13	134	0
EC168	Startup and Test HVAC	01-Feb-13	05-Feb-13	19	0
EC183	Test and Balance HVAC Eq.	21-Jun-13	26-Jun-13	38	0
<b>Primary Resource: Proje</b>					
EC117	Prepare and Solicit Bids for F	04-Apr-11 A	06-May-11	192	225
EC118	Prepare and Solicit Bids for B	18-Mar-11 A	13-Apr-11 A	115	207
EC119	Prepare and Solicit Bids for H	14-Apr-11 A	04-May-11	115	150
EC122	Review Bids for Brick	08-Apr-11 A	28-Apr-11 A	115	192
EC124	Review Bids for Heat Pump	04-May-11	17-May-11	77	0
EC125	Review Bids for Flooring	06-May-11	27-May-11	115	0
EC126	Award Contract for Brick	21-Apr-11 A	05-May-11	38	6
EC129	Fabricate and Deliver Heat F	25-May-11	23-Jan-13	3379	0

Week of Jun 19

Bar	Total	Cumulative
Budgeted Units	63h	63h
Actual Regular Units	0h	0h
Actual Overtime Units	0h	0h
Remaining Early Units	63h	63h
Overallocated Early Units	23h	31h
Remaining Late Units	32h	32h
Overallocated Late Units	0h	0h
Limit	40h	0h

Display: Current Project's Resources

Resource ID	Resource Name	Primary Role	Default Units / Time
Floor	Floor and Carpet Lay	Trades	8/d
GenLabor	Laborer-Constructor	Trades	8/d
HVAC	HVAC	Trades	8/d
IronWrk	Ironworker	Trades	8/d
KimP	Paul Kim	Management	8/d
Operator	Operator	Trades	8/d
Paint	Painter	Trades	8/d
Plumb	Plumber	Trades	8/d
Project Contr	Project Controls	Management	8/d

Display: Open Projects Only

Portfolio: All Projects Access Mode: Shared Data Date: 01-May-11 Baseline: City Center Office Building Addition - B1 User: admin DB: PMDB (Professional)

# Formatting the Timescale

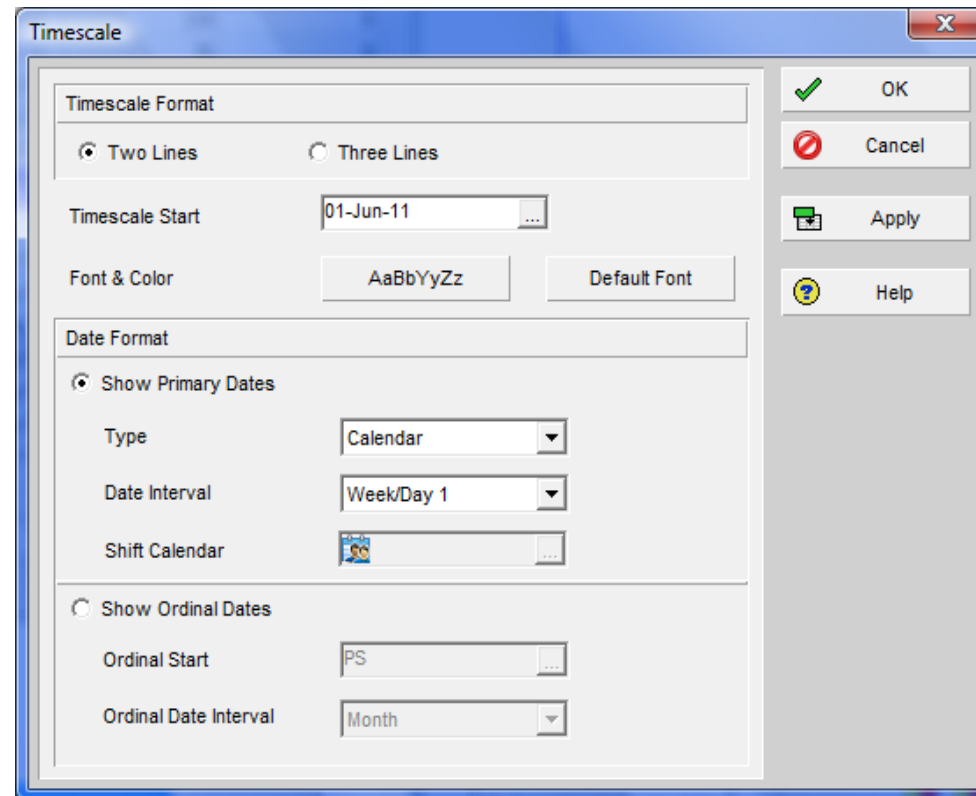
- You can specify the timescale you want to display in the Resource Usage Profile and the Gantt Chart
  - *Timescale Start* – Specify the date from which the timescale should start for the profile or Gantt Chart
  - *Date Interval* – Choose the units of the timescale in years, quarters, months, weeks, days, hours, and shifts

# Formatting the Timescale

- Exercise

- Steps

- In the right pane Display Option bar, click Timescale
    - In the Timescale Start field, click Browse button to select the date
    - Click Custom date, and then select, 01-June-2011
    - In the Type field, verify Calendar
    - In the Date Interval drop-down list, select Week/Day 1
    - Click Ok



# Formatting the Timescale

- You can also format the timescale by clicking and dragging
- Place your mouse on the minor date interval on the timescale. Click and drag to expand or contract the timescale.
- Place your mouse on the major date interval on the timescale. Click and drag to move the entire timescale
- Exercise
  - Steps
    - In the minor date interval, compress the timescale
    - In the major date interval, adjust the time frame to show the week of 1-June-2011

# Lesson Review

- The Resource Usage Profile provides a graphical view of unit/cost distributions over the period of time. It displays the amount of effort needed from each resource/role on the project during each time period.
- Use the profile to determine how many hours each resource is scheduled to work; identify over-allocated resources; track expenditures per time period; and display a “banana-curve” to compare early and late dates.
- You can specify settings for resource analysis in the Resource Analysis tab in User Preferences.
- You can further customize the profile by using the two Display Option bars (left pane and right pane).



# Optimizing the Project Plan

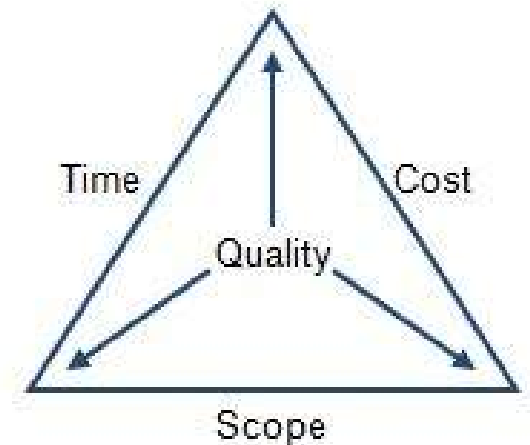
## Lesson 15

# Optimizing the Project Plan

- Objectives
  - Analyze schedule dates
  - Shorten a project schedule
  - Analyze resource availability
  - Remove resource over-allocation
  - Analyze project costs

# Analyzing the Project

- Once you have created the project plan, verify that it meets the project stakeholders' date, resource, and cost requirements. If any inconsistency exists between the project information in the project plan and the project requirements, you will be able to identify the source of the problem and define a solution
  - *Analyze schedule dates* - Evaluate the schedule to ensure that milestone dates and project dates are achieved
  - *Analyze resource allocation* - Evaluate the resources to ensure that the resources are not over-allocated
  - *Analyze cost budget* - Evaluate project costs



# Analyzing the Schedule Dates

- The most important date in the schedule is the calculated project Finish Date. If the calculated Finish Date of the project is beyond the Must Finish By date, the project must be shortened. In addition, each deliverable in the project should be scheduled to finish by the dates imposed by the project stakeholders
- Steps for analysis
  - Compare the calculated Finish with the Must Finish By date
  - Back up your project plan
  - Focus on critical activities
  - Shorten the project

# Comparing Finish Date with Must Finish By Date

- You can quickly determine whether the project will finish on time by viewing the Dates tab in the Projects Window.
- The project EC00515 must be finished by 28-Jun-13, however, the schedule indicates that the project will not finish until 23-Jul-13. (Note that the project actually must finish by the close of the business on 27-Jun-13 as the Must Finish By constraint is at 12:01 am on 28-Jun.)
- Exercise
  - Steps
    - Open a project, EC00515 City Center Office Building Addition
    - In the Directory bar, click Projects
    - Select a project EC00515
    - In the Project Details, click the Dates tab and compare the Must Finish By Date with the calculated Finish date



# Focusing on Critical Activities

- To shorten the project, focus on critical activities.
- These represent the longest continuous path of activities through a project that determines the project Finish Date.
- If you adjust a critical activity, the finish is likely affected.
  
- Exercise
  - Steps
    - Click the Settings tab (bottom)
    - In the Defined Critical Activities section, select Longest Path

# Focusing on Critical Activities



Primavera P6 Professional R8.2 : EC00515-1 (City Center Office Building Addition)

File Edit View Project Enterprise Tools Admin Help

Projects | Activities

Layout: Projects

Project ID	Project Name	Total Activities	Stra	November 2010				December 2010				January 2011				February 2011				March 2011				April 2011							
				31	07	14	21	28	05	12	19	26	02	09	16	23	30	06	13	20	27	06	13	20	27	03	10	17			
<b>Enterprise All Initiatives</b>				2325																											
<b>E&amp;C Engineering &amp; Construction</b>				679																											
EC00515	City Center Office Building Addition	71																													
EC00530	Nesbid Building Expansion	71																													
EC00501	Haitang Corporate Park	71																													
EC00515-1	City Center Office Building Addition	71																													
EC00610	Harbour Pointe Assisted Living Center	131																													
EC00620	Juniper Nursing Home	132																													
EC00630	Saratoga Senior Community	132																													
<b>Energy Energy Services</b>				689																											
NRG00870	Baytown, TX - Offline Maintenance Work	132																													

General | Notebook | Budget Log | Spending Plan | Budget Summary | Dates | Funding | Codes | Defaults | Resources | Settings | Calculations

**Summarized Data**

Last Summarized On: 07-Oct-10

Summarize to WBS Level: 0

**Project Settings**

Character for separating code fields for the WBS tree: .

Fiscal year begins on the 1st day of: January

Baseline for earned value calculations:

Project baseline  User's primary baseline

**Define Critical Activities**

Total Float less than or equal to: 0h

Longest Path



# Focusing on Critical Activities

- Exercise
  - Steps
    - In the Directory bar, click Activities
    - In the Layout Option bar, click Layout, Open
    - Select a layout, Classic WBS Layout
    - In the Layout Option bar, click Filters
    - Select a filter, Critical, and then click Ok

# Shortening the Project (*Methods*)

- If the schedule analysis leads you to conclude that the Must Finish By date cannot be met, concentrate your efforts on shortening the schedule. Several methods can help you accomplish this goal:
  1. Refine duration estimates (Crashing)
    - a. Break-down long activities
    - b. Assign additional resources to reduce duration
  2. Use relationships to overlap activities (Fast-Tracking)
  3. Apply/ modify constraints
  4. Change calendar assignments
    - a. Put critical activities on a longer workweek
    - b. Add exceptions to non-work time

# Refining Duration Estimates

- Begin the analysis by reviewing the activities with the longest duration. In general, these activities offer the greatest flexibility in altering durations.
  
- Exercise
  - Steps
    - Select an activity, EC1790 – Install Floor and Carpeting
    - Click the Status tab (bottom)
    - In the Original Duration field, type <10>, and press Enter
    - Press F9, and then click Schedule
    - See Changes in Total Float column

# Refining Duration Estimates



Primavera P6 Professional R8.2 : EC00515-1 (City Center Office Building Addition)

File Edit View Project Enterprise Tools Admin Help

**Activities**

Projects Activities

Layout: Classis WBS Layout Filter All: Critical

Activity ID	Activity Name	Start	Finish	Total Float
Doors and Windows				
Interior Finishes				
EC1700	Drywall in Offices	21-Feb-13	12-Apr-13	-15
EC1820	Touch-up and Clean-up	05-Jul-13	10-Jul-13	-15
EC1840	Finishes Complete		12-Jul-13	-15
EC1850	Punch List	12-Jul-13	19-Jul-13	-15
EC1860	Building Addition Complete		19-Jul-13	-15
Plumbing and Lighting Fixtures				
Floor and Carpeting				
EC1790	Install Floor and Carpeting	04-Jun-13	18-Jun-13	-15
Carpentry				
EC1740	Install Ceiling Grid	12-Apr-13	04-Jun-13*	-15
EC1800	Finish Carpentry and Millwork	18-Jun-13	05-Jul-13	-15
Paint				

General Status Resources Predecessors Successors Codes Notebook Steps Feedback WPs & Docs Expenses Summary

Activity: EC1790 Install Floor and Carpeting Project: EC00515-1

Duration	Status	Start	Physical %
Original: 10	<input type="checkbox"/> Started	04-Jun-13	0%
Actual: 0	<input type="checkbox"/> Finished	18-Jun-13	
Remaining: 10	Exp Finish:		Resume:
At Complete: 10			

Labor Units	
Budgeted	80
Actual	0
Remaining	80
At Complete	80

Total Float: -15  
Free Float: 0

Primary: < None > Secondary: < None >  
Date: Date

Portfolio: All Projects Access Mode: Shared Data Date: 01-May-11 Baseline: City Center Office Building Addition - B1 User: admin DB: PMDB (Professional)

# Modifying Relationships

- If you need to further compress the schedule, review relationships between activities on the critical path.
- Currently there is a Finish-to-Start (FS) relationship between activities EC1740-Install Ceiling Grid and EC1790-Install Floor and Carpeting. You determine that these activities can be performed at the same time. Therefore, change the relationship to Start-to-Start (SS) with 5 days of lag.
- Exercise
  - Steps
    - Verify an activity, EC1740-Install Ceiling Grid is selected
    - Click the Relationships tab (bottom)
    - Double-click in the Relations for EC1790 (Successors Pane)
    - In the Lag field, type <5> and press Enter
    - Press F9 and then press Schedule
    - Now observe Total Float column

# Modifying Relationships



Primavera P6 Professional R8.2 : EC00515-1 (City Center Office Building Addition)

File Edit View Project Enterprise Tools Admin Help

Activities

Projects Activities

Layout: Classis WBS Layout Filter All: Critical

Activity ID	Activity Name	Start	Finish	Total Float
Doors and Windows				
Interior Finishes				
EC1700	Drywall in Offices	21-Feb-13	19-Jun-13	5
EC1820	Touch-up and Clean-up	06-Jun-13	10-Jun-13	5
EC1840	Finishes Complete		12-Jun-13	5
EC1850	Punch List	12-Jun-13	19-Jun-13	5
EC1860	Building Addition Complete		19-Jun-13	5
Plumbing and Lighting Fixtures				
Floor and Carpeting				
EC1790	Install Floor and Carpeting	06-May-13	20-May-13	5
Carpentry				
EC1740	Install Ceiling Grid	12-Apr-13	04-Jun-13*	-1
EC1800	Finish Carpentry and Millwork	20-May-13	06-Jun-13	5
Paint				

Qtr 1, 2013 Qtr 2, 2013 Qtr 3, 2013 Qtr 4, 2013 Qtr 1, 2014

Dec Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jan Feb Mar

21-Feb-13 12-Apr-13 19-Jun-13, Interior Finishes

06-Jun-13 10-Jun-13

12-Jun-13 19-Jun-13

20-May-13, Floor and Carpeting

06-May-13 20-May-13

12-Apr-13 06-Jun-13, Carpentry

20-May-13 06-Jun-13

General Status Resources Predecessors Successors Codes Notebook Steps Feedback WPs & Docs Expenses Summary Relationships Risks

Activity EC1740 Install Ceiling Grid Project EC00515-1

Predecessors					
Project ID	WBS	Activity ID	Activity Name	Relations	Lag
EC00515-1	EC00515-1.Int-I	EC1700	Drywall in Offices	FS	0

Successors						
Project ID	WBS	Activity ID	Activity Name	Relations	Lag	Activity Stat
EC00515-1	EC00515-1.Int-I	EC1760	Install Lighting Fixtures	SS	8	Not Started
EC00515-1	EC00515-1.Mer	EC1770	Install AC Grills and Registers	SS	8	Not Started
EC00515-1	EC00515-1.Int-I	EC1790	Install Floor and Carpeting	SS	5	Not Started

Assign Remove GoTo

Portfolio: All Projects Access Mode: Shared Data Date: 01-May-11 Baseline: City Center Office Building Addition - B1 User: admin DB: PMDB (Professional)

# Modifying Constraints

- Constraints assigned earlier in the project lifecycle may need to be modified based on the latest information from the project team. If you modify a constraint, be sure to also modify the Notebook topic that was created to document the constraint.
- A resource is available to work on the activity EC1740-Install Ceiling Grid. You can now remove the Finish On or Before constraint from the activity.
- Exercise
  - Steps
    - Select an Activity, EC1740-Install Ceiling Grid
    - Click the Status tab (bottom)
    - In the Primary drop-down list in the Constraint section, select a Constraint Type, None
    - Click the Notebook topic, Constraints and Assumptions, and click Delete
    - Press F9 and then press Schedule
    - Now observe Total Float column

# Modifying Constraints



Primavera P6 Professional R8.2 : EC00515-1 (City Center Office Building Addition)

File Edit View Project Enterprise Tools Admin Help

Activities

Projects Activities

Layout: Classis WBS Layout Filter All: Critical

Activity ID	Activity Name	Start	Finish	Total Float
Doors and Windows				
Interior Finishes				
EC1700	Drywall in Offices	21-Feb-13	19-Jun-13	5
EC1820	Touch-up and Clean-up	06-Jun-13	10-Jun-13	5
EC1840	Finishes Complete		12-Jun-13	5
EC1850	Punch List	12-Jun-13	19-Jun-13	5
EC1860	Building Addition Complete		19-Jun-13	5
Plumbing and Lighting Fixtures				
Floor and Carpeting				
EC1790	Install Floor and Carpeting	06-May-13	20-May-13	5
Carpentry				
EC1740	Install Ceiling Grid	12-Apr-13	04-Jun-13	5
EC1800	Finish Carpentry and Millwork	20-May-13	06-Jun-13	5
Paint				

General Status Resources Predecessors Successors Codes Notebook Steps Feedback WPs & Docs Expenses Summary Relationships Risks

Activity EC1740 Install Ceiling Grid Project EC00515-1

Field	Value
Duration Original	36
Duration Actual	0
Duration Remaining	36
Duration At Complete	36
Total Float	5
Free Float	0
Status Started	12-Apr-13
Status Finished	04-Jun-13
Exp Finish	
Physical %	0%
Suspend	
Resume	
Constraints Primary	< None >
Constraints Secondary	< None >
Constraints Date	
Labor Units Budgeted	288
Labor Units Actual	0
Labor Units Remaining	288
Labor Units At Complete	288

Portfolio: All Projects Access Mode: Shared Data Date: 01-May-11 Baseline: City Center Office Building Addition - B1 User: admin DB: PMDB (Professional)



# Verifying Project Dates

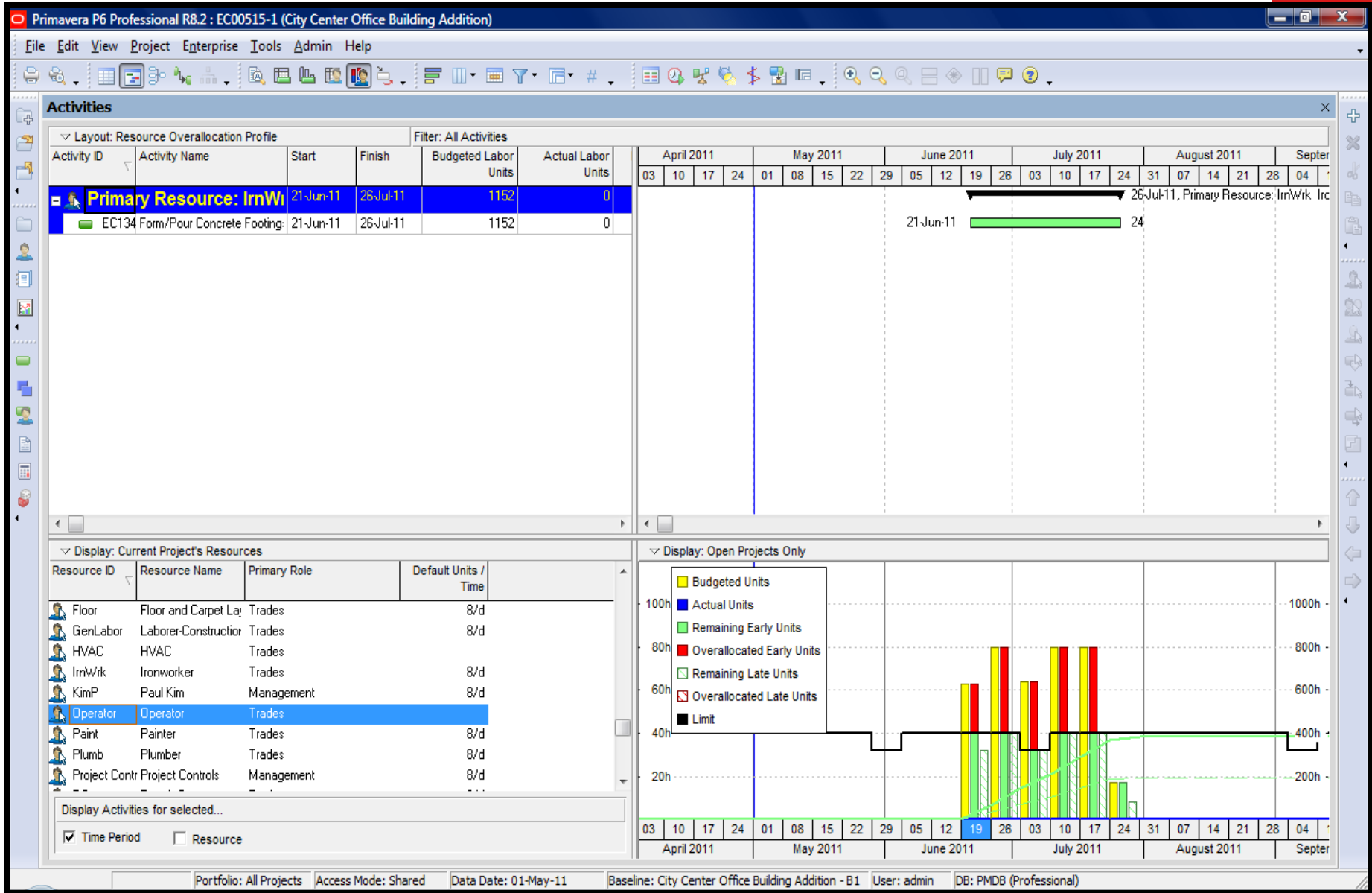
- To see if the project will now finish on time, verify that no negative Total Float exists on any of the activities in the project.
- The Total Float for the project equals 5 days and the calculated Finish Date is 19-Jun-13. Therefore, the project is scheduled to finish before the Must Finish By date of 28-Jun-13.
- Exercise
  - Steps
    - In the Directory bar, click Projects
    - Select a project, EC00515
    - Click the Dates tab (bottom) and view Finish date and Must Finish By date
    - View Total Float column in Project Table



# Analyzing Resource Allocation

- The project plan is now scheduled to be completed by the deadline. Before proceeding, verify that the resources are appropriately allocated.
- You can use the Resource Usage Profile to determine which resources are over-allocated/underutilized. You can then re-assign resources to help even the workload.
- Exercise
  - Steps
    - Open a project, EC00515-City Center Office Building Addition
    - In the Directory bar, click Activities
    - In the Layout Option bar, click Layout, Open
    - Select a layout, Resource Overallocation Profile
    - Select a Resource, Operator
    - View Over-allocation marked by Red

# Analyzing Resource Allocation



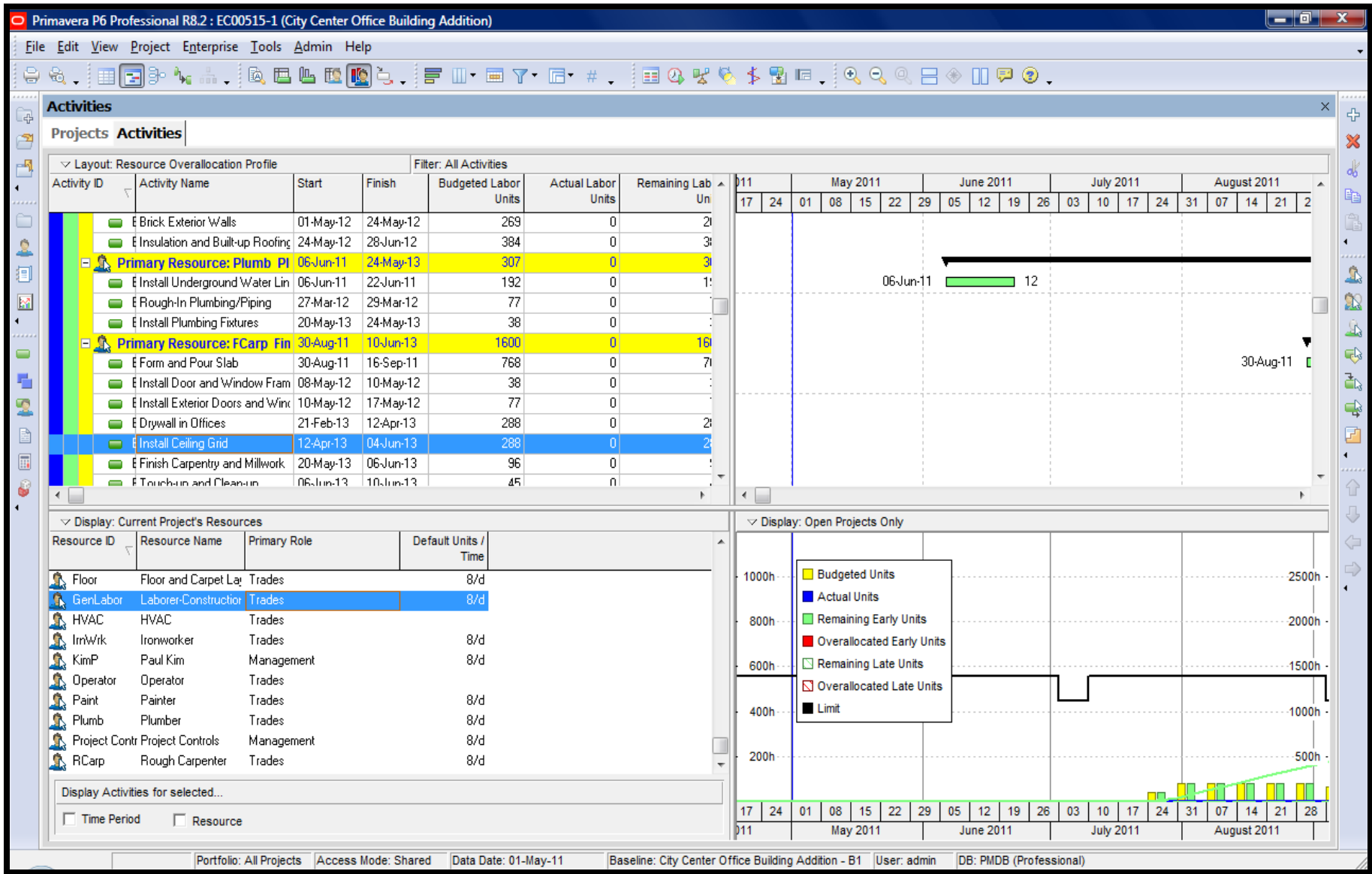
# Analyzing Resource Allocation

- The Resource Usage Profile allows you to run a filter to focus on the activities that are contributing to a resource's over-allocation.
- Using a filter in the Resource Usage Profile, identify the activities contributing in Operator's over-allocation in Jun-Jul 2011.
- Exercise
  - Steps
    - In the Display Activities for Selected section at the bottom, mark Time Period
    - In the histogram timescale, select a week, 19-Jun-11, and view activities causing over-allocation
    - In the histogram timescale, select a week 26-Jun-11, and view activities causing over-allocation

# Correcting Over-Allocation

- If over-allocation is identified, choose a method to remove over-allocation from the specific resource.
  - Replace the over-allocated resource with an available resource
  - Increase the resource's workweek
  - Increase the hours/day of the resource
  - Assign additional resources to the activity
- Exercise
  - Steps
    - Select a resource, Operator
    - In the Display Activities for Selected section at the bottom, clear Time Period
    - Verify that GenLabor – Labor Construction is available to work on the activity during the week of 26-Jun-11

# Correcting Over-Allocation



# Correcting Over-Allocation

- If the selected activities have an associated role assignment, you can quickly change the resources in the multiple activities by first selecting the activities and then clicking Assign Resource button in the Command bar
- Exercise
  - Steps
    - Select a resource, Operator
    - In the Activity Table, select Activities EC1340-Form Pour Concrete Footings
    - In the Command bar, click Assign Resources button
    - Click Replace button
    - Select GenLabor and press Assign button.





# Reviewing Allocation

- Use the Resource Usage Profile to check allocation for Pete Lopez, who was replaced from the activities with Katy Dunn.
  
- Exercise
  - Steps
    - In the File menu, click Refresh Data or Press F5
    - Now observe Resource Usage Profile

# Analyzing Budget

- There are many options for analyzing budget. By displaying cost columns in the Activity Table, you can analyze the budget cost of the entire project as well as each individual activity.
- \$830,000 has been allocated for the project EC00515. You will display a layout that shows budgeted cost information so you can determine whether the project is within the budget or not.
- Exercise
  - Steps
    - Open project, EC00515 - City Center Office Building Addition
    - In Project Table, Add column Original Budget
    - In Activities Window, Open Layout Project Cost
    - Add column Budget At Completion and observe budget (CPI)

# Analyzing Budget



Primavera P6 Professional R8.2 : EC00515-1 (City Center Office Building Addition)

File Edit View Project Enterprise Tools Admin Help

Projects | Activities

Layout: Project Cost

Project ID	Project Name	Cost Performance Index	Schedule Performance Index	Last Summarized Date	Total Activities	Original Budget	Budget At Completion	At Completion Total Cost	2001						
									Q3	Q4	Q1	Q2	Q3	Q4	
Enterprise	All Initiatives	0.93	0.97		2325	175,000.00	\$44,063,088.04	\$45,266,692.18							
E&C	Engineering & Construction	0.89	0.98		679		\$14,907,537.10	\$15,450,553.65							
EC00501	Haitang Corporate Park	1.03	1.00	07-Oct-10	71	830,000.00	\$636,980.80	\$632,455.80							
EC00515	City Center Office Building Addition	0.91	0.93	07-Oct-10	71	830,000.00	\$734,195.20	\$745,785.91							
EC00515-1	City Center Office Building Addition	0.47	0.93	07-Oct-10	71	830,000.00	\$734,195.20	\$1,227,213.92							
EC00530	Nesbid Building Expansion	0.00	0.00	07-Oct-10	71	830,000.00	\$550,470.40	\$550,470.40							
EC00610	Harbour Pointe Assisted Living Center	0.97	0.98	06-Oct-10	131	700,000.00	\$4,550,500.56	\$4,568,202.00							
EC00620	Juniper Nursing Home	0.95	0.99	06-Oct-10	132	500,000.00	\$3,605,744.44	\$3,630,975.12							
EC00630	Saratoga Senior Community	0.00	0.00	06-Oct-10	132	000,000.00	\$4,095,450.50	\$4,095,450.50							
Energy	Energy Services	0.91	0.99		689		\$3,638,923.54	\$3,711,665.60							
NRG00800	Sunset Gorge - Routine Maintenance Work	0.95	1.00	13-Aug-10	132	\$87,000.00	\$92,259.86	\$97,259.19							
NRG00820	Johnstown - Routine Maintenance Work	0.00	0.00	13-Aug-10	131	\$87,000.00	\$75,960.00	\$75,960.00							

General | Dates | Notebook | Budget Log | Spending Plan | Budget Summary | Funding | Codes | Defaults | Resources | Settings | Calculations

Project ID: EC00515-1 | Project Name: City Center Office Building Addition

Status: Active | Responsible Manager: E&C | Project Leveling Priority: 10

Check Out Status: Checked In | Checked Out By: | Date Checked Out: | Launch...

Project Web Site URL: | Launch...

Portfolio: All Projects | Access Mode: Shared | Data Date: 01-May-11 | Baseline: City Center Office Building Addition - B1 | User: admin | DB: PMDB (Professional)

# Lesson Review

- Optimizing the project plan is the last step in planning your project. Ensure that the project plan meets its date, and cost requirements.
- If the calculated Finish date of the project is beyond the Must Finish By date, the project must be shortened.
- Compare the dates in the Dates tab in Project Details
- You can use various methods to shorten the project, such as refining durations, modifying relationships, applying constraints, and focusing on critical activities.
- Use the Resource Usage Profile to ensure resources are not over-allocated.
- Evaluate costs to ensure that the project can be completed within budget.

# Baselining the Project Plan

## Lesson 16

# Baselining the Project Plan

- Objectives
  - Create a baseline plan
  - Display baseline bars on the Gantt Chart
  - Modify the bars on the Gantt Chart

# Baseline

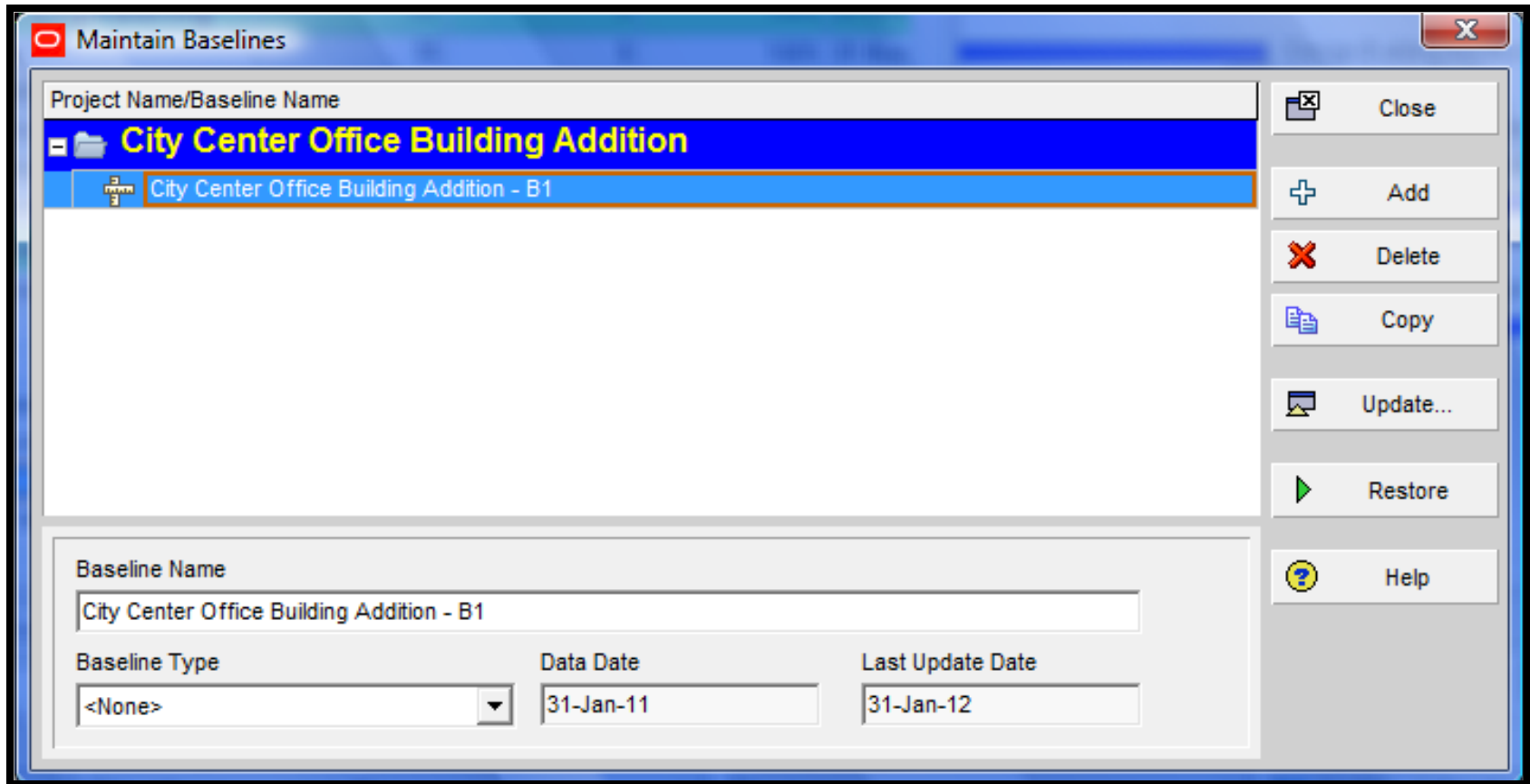
- A *baseline* is a copy of a project that you can compare to the current project to evaluate progress. Create a baseline plan before updating a schedule for the first time.
- Baseline provides a target against which you can track a project's cost, schedule, and resource performance.
- Baseline functionality in Primavera enables you to:
  - Save an unlimited no. of baselines per project
  - Designate one project baseline and up to three user baselines at a time for comparison to the current project
  - Assign a baseline type to categorize a baseline. Examples include initial planning, what-if, or mid-project baselines
  - Baseline types can help you benchmark performance across multiple projects



# Creating a Baseline

- You can create a baseline either by:
  - Copying the currently opened project, or
  - Converting another project into a baseline
- When you create a baseline, you must select the project to which it is associated. Baselines can be assigned only to opened projects. All opened projects are displayed in the *Maintain Baselines dialog box*
- Exercise
  - Steps
    - Select a project, EC00515-City Center Office Building Addition
    - Confirm you are in Activities Window
    - In the Layout Option bar, click Layout, Open
    - Select a layout, Classic Schedule Layout
    - In the Project menu, click Maintain Baselines
    - Verify that the project to which you are associating the baseline, City Center Office Building Addition-B1, is selected

# Creating a Baseline

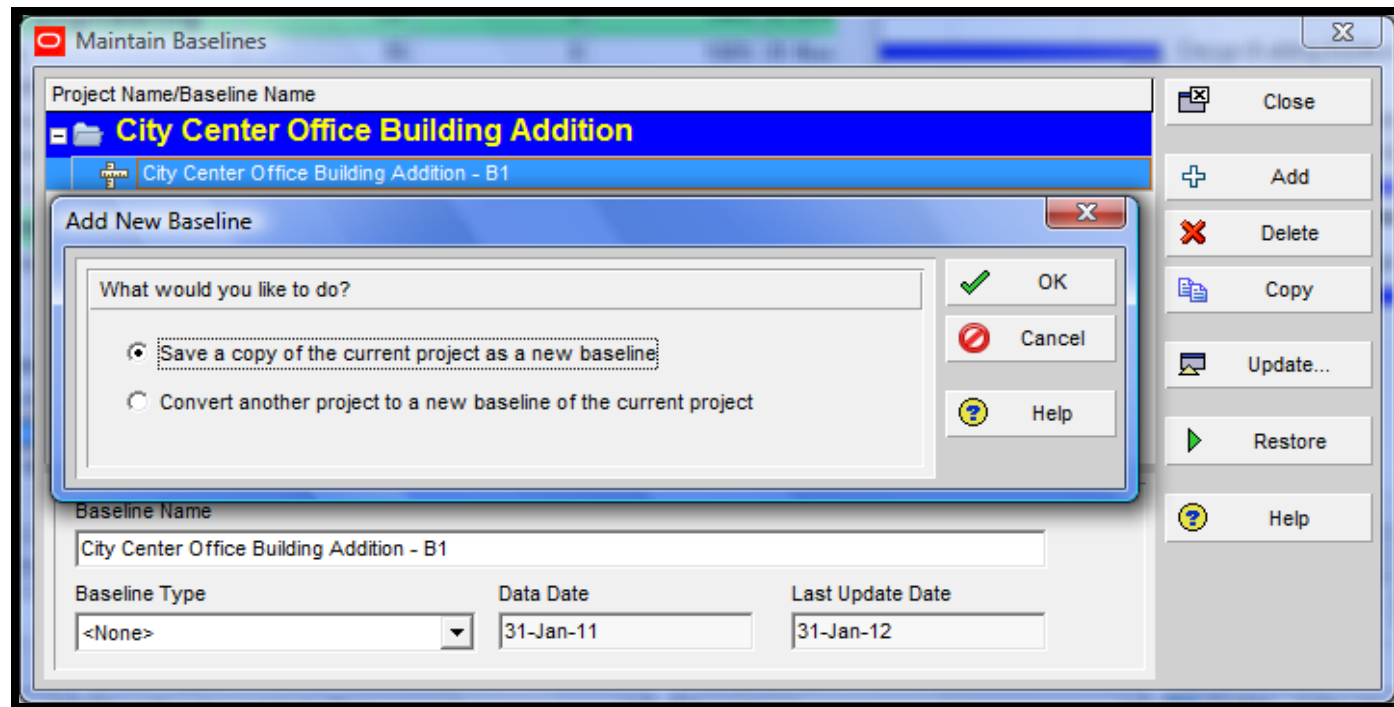


# Creating a Baseline

- Exercise

- Steps

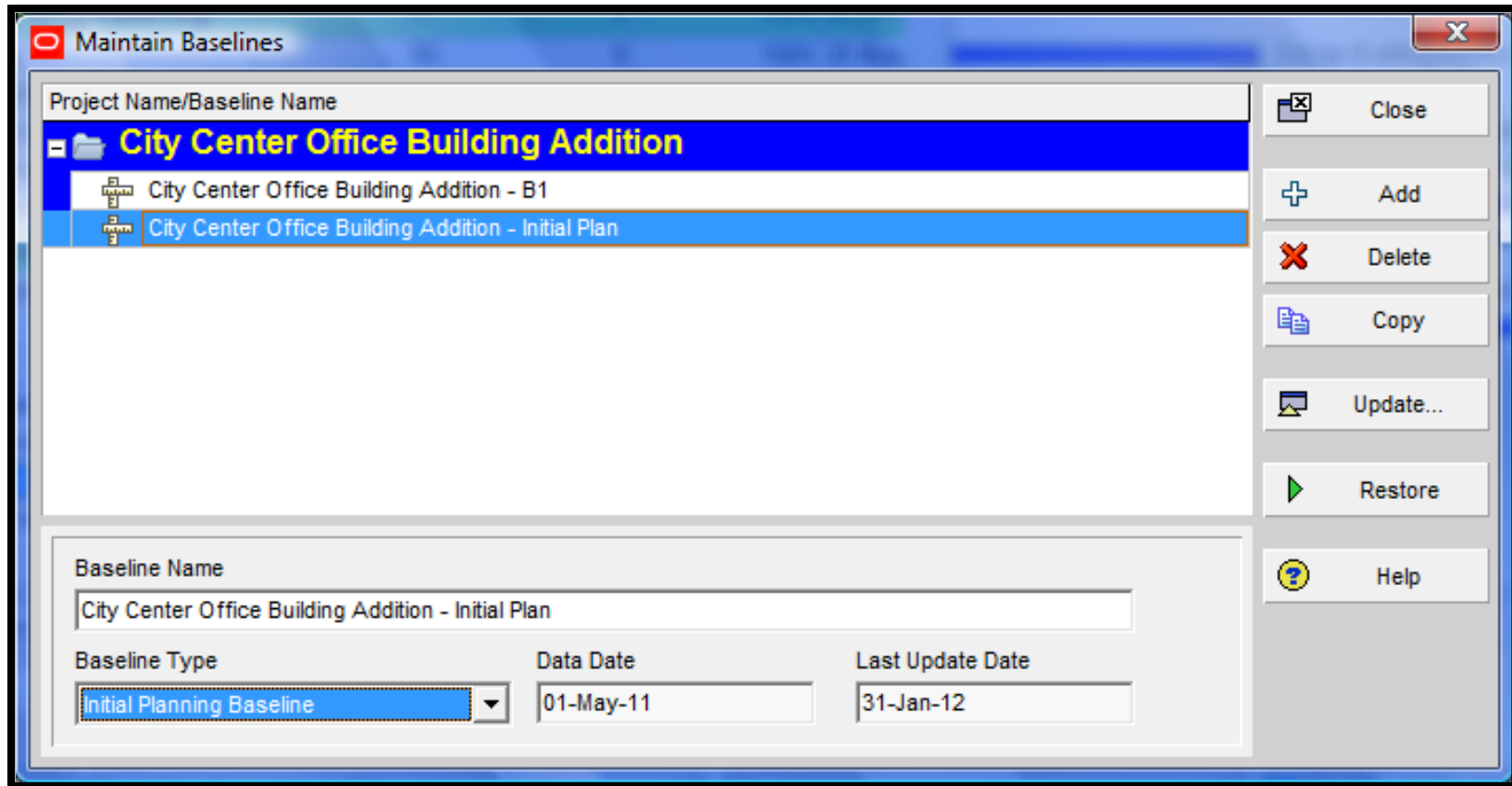
- Click Add
    - Verify that Save a copy of the current project as a new baseline is selected
    - Click Ok



# Categorizing the Baseline

- Assign a *Baseline Type* to categorize the baseline based on how you intend to use it. For example, the Initial Plan baseline type can be used for your initial project plan. Another baseline type, Mid Project Status, can be used after the project is underway. Baseline types are also useful in organizing multiple baselines in the project.
- Exercise
  - Steps
    - Select a baseline, City Center Office Building Addition-B2
    - In the Baseline Name field, type <City Center Office Building Addition– Initial Plan>
    - In the Baseline Type drop-down list, select Initial Planning Baseline
    - Click Close

# Categorizing the Baseline



Project Name/Baseline Name

- City Center Office Building Addition
  - City Center Office Building Addition - B1
  - City Center Office Building Addition - Initial Plan

Close

Add

Delete

Copy

Update...

Restore

Help

Baseline Name

City Center Office Building Addition - Initial Plan

Baseline Type

Initial Planning Baseline

Data Date

01-May-11

Last Update Date

31-Jan-12

# Assigning a Baseline

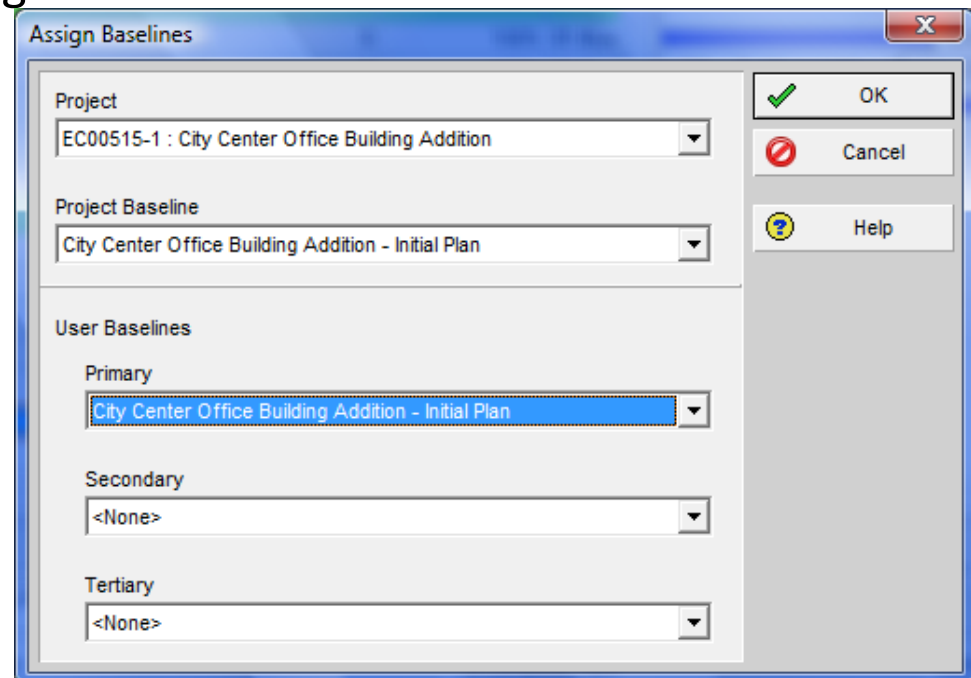
- Use the *Assign Baselines dialog box* to choose a project baseline and/or user baseline for the project. If no baseline is designated as Active, the current project plan is used as the baseline.
- Project Baseline selected by the Project Manager for the project
  - Used for schedule, resource, and cost comparison
  - Controlled by the security privilege, Maintain Project Baselines
- User Baseline assignments are user-specific
  - Used for schedule comparison only
  - Each user can choose a different baseline for comparison to the current project

# Assigning a Baseline

- Exercise

- Steps

- In the Project menu, click Assign Baselines
    - In the Project Baseline drop-down list, select City Center Office Building Addition – Initial Plan
    - In the Primary drop-down list in User Baselines section, select City Center Office Building Addition-Initial Plan
    - Click Ok



# Viewing Baseline Bars

- The *Bars dialog box* allows you to modify the type, size, color, row position, and shape of the bars displayed in the Gantt Chart
  - *Timescale* – Bar is drawn on the timescale selected, e.g. Actual Bar drawn from Actual Start date to Actual Finish date
  - *Filter* – Bar is drawn for all activities that match the criteria listed in the filter displayed



# Bar Style Tab

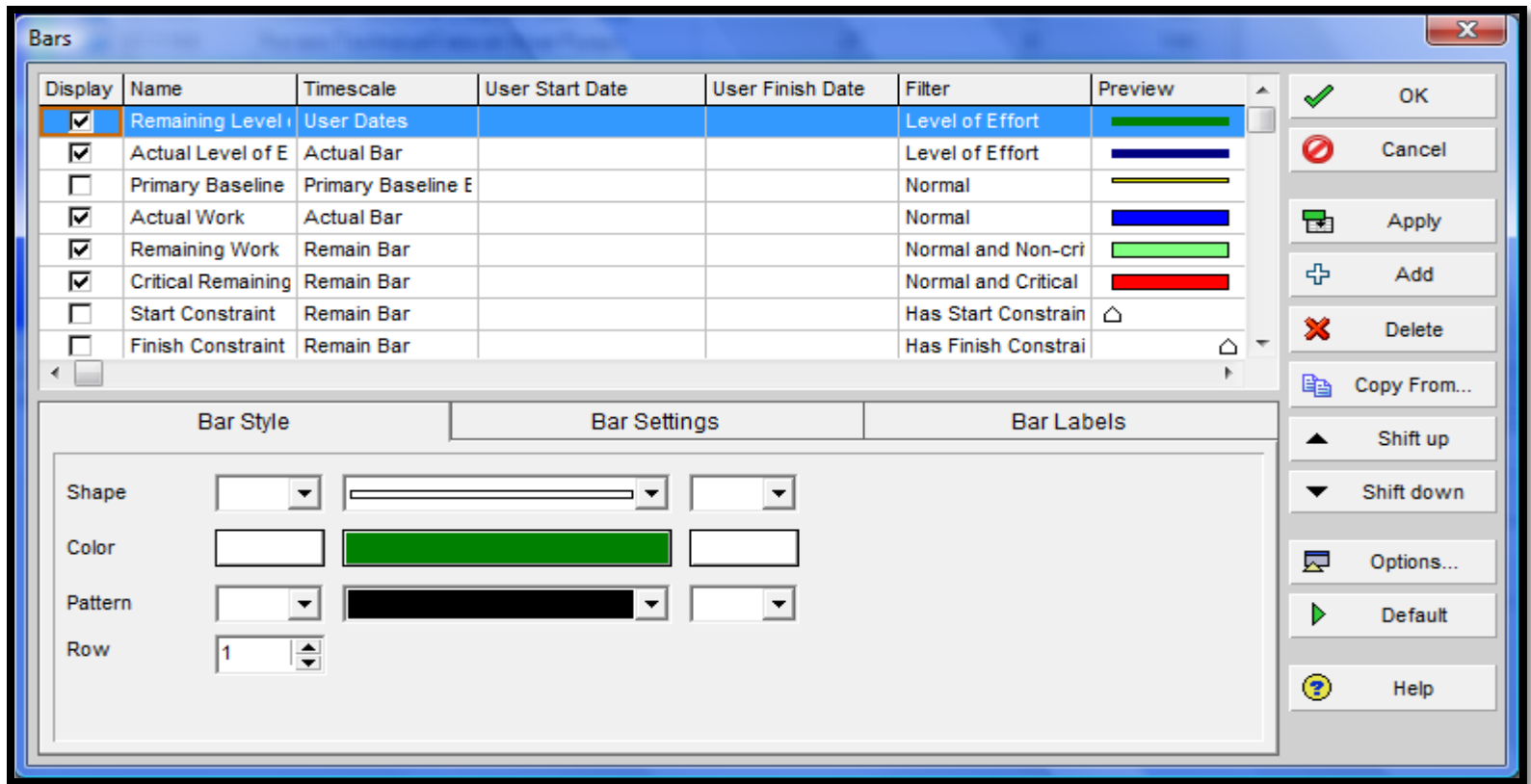
- The *Bar Style tab* in Bars dialog box enables you to specify the shape, color, and pattern of the bars and endpoints
  - *Shape* – Shape of the selected bar's start endpoint, the bar itself, and the finish endpoint
  - *Color* – Choose the selected bar's start endpoint color, the color of the bar itself, and the color of the finish endpoint
  - *Pattern* – The fill pattern of the selected bar
  - *Row* – Displays the position of the bar on the Gantt Chart

# Bar Style Tab

- Exercise

- Steps

- In the Layout Option bar, click Bars
    - Or Right-click the Gantt Chart area, click Bars



# Displaying Baseline Bar

- By displaying baseline bars in the Gantt Chart, you can visually compare the baseline plan's schedule dates to the current project plan's schedule dates
- In addition to bars displayed by default, you can create additional bars based on date fields and filters
- Select a value in the Row field to determine placement of a bar in the Gantt Chart
- Exercise
  - Steps
    - In the Display column, mark a check box Primary baseline
    - In the Row field in the Bar Style tab, verify 2
    - In the Display column, mark a checkbox, Baseline Milestone
    - In the Row field, verify 2
    - Click Ok to close the Bars dialog box

# Displaying Baseline Bar



Bars

Display	Name	Timescale	User Start Date	User Finish Date	Filter	Preview
<input checked="" type="checkbox"/>	Remaining Level	User Dates			Level of Effort	
<input checked="" type="checkbox"/>	Actual Level of E	Actual Bar			Level of Effort	
<input checked="" type="checkbox"/>	Primary Baseline	Primary Baseline Bar			Normal	
<input checked="" type="checkbox"/>	Actual Work	Actual Bar			Normal	
<input checked="" type="checkbox"/>	Remaining Work	Remain Bar			Normal and Non-cri	
<input checked="" type="checkbox"/>	Critical Remaining	Remain Bar			Normal and Critical	
<input type="checkbox"/>	Start Constraint	Remain Bar			Has Start Constrai	
<input type="checkbox"/>	Finish Constraint	Remain Bar			Has Finish Constrai	
<input type="checkbox"/>	Baseline Mileston	Primary Baseline Bar			Milestone	

**Bar Style**

Shape:

Color:

Pattern:

Row:

**Bar Settings**

**Bar Labels**

OK

Cancel

Apply

Add

Delete

Copy From...

Shift up

Shift down

Options...

Default

Help

# Displaying Baseline Bar



Primavera P6 Professional R8.2 : EC00515-1 (City Center Office Building Addition)

File Edit View Project Enterprise Tools Admin Help

Activities

Projects Activities

Layout: Classic Schedule Layout Filter: All Activities

Activity ID	Activity Name	Original Duration	Remaining Duration
<b>EC00515-1 City Center Office Building Ad</b>			
<b>EC00515-1.D&amp;E Design and Engineering</b>			
EC1000	Design Building Addition	55	0
EC1010	Start Office Building Addition Project	0	0
EC1030	Review and Approve Designs	22	0
EC1050	Assemble Technical Data for Heat Pump	7	0
EC1160	Review Technical Data on Heat Pumps	27	0
<b>EC00515-1. Found Foundation</b>			
EC1090	Begin Building Construction	0	0
EC1100	Site Preparation	43	0
EC1230	Excavation	24	24
EC1320	Install Underground Water Lines	12	12
EC1330	Install Underground Electric Conduit	12	12
EC1340	Form/Pour Concrete Footings	24	24
EC1350	Concrete Foundation Walls	24	24

General Status Resources Predecessors Successors

Activity Project

Activity Type Duration Type % Complete Type Activity Calendar

WBS Responsible Manager Primary Resource

Portfolio: All Projects Access Mode: Shared Data Date: 01-May-11 Baseline: City Center Office Building Addition - Initial Plan User: admin DB: PMDB (Professional)

# Customizing the Activity Table

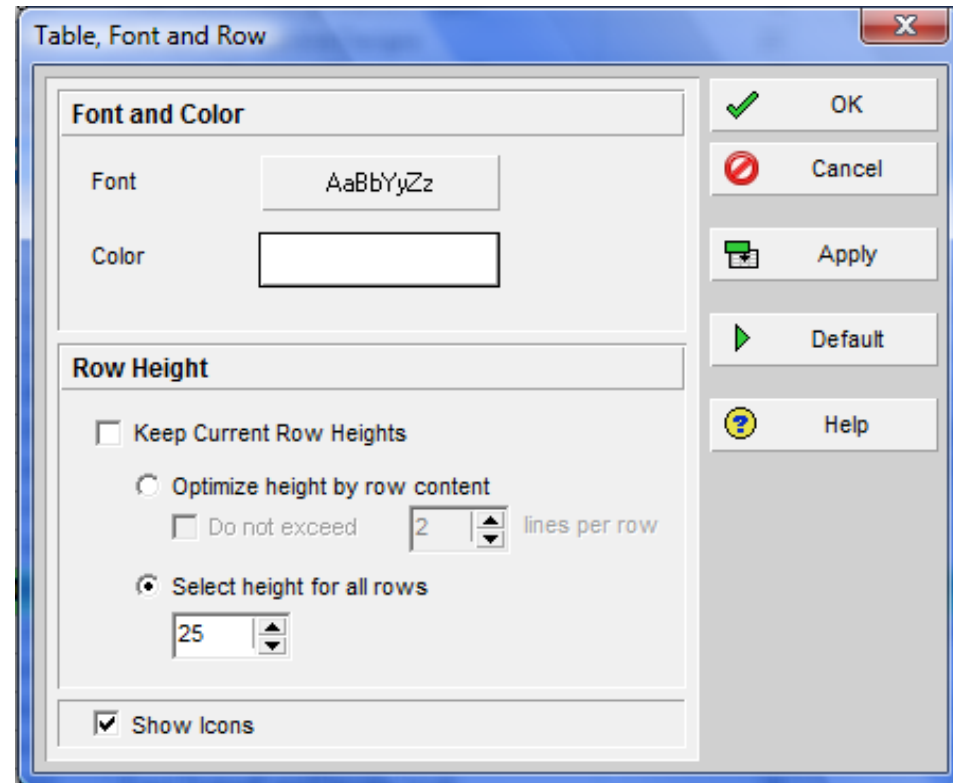
- You can further customize the layout by choosing display options for the Activity Table.
- These include the font of the text and the height of the rows, which can be specified in the *Table, Font, and Row dialog box*

# Customizing the Activity Table

- Exercise

- Steps

- In the Layout Option bar, click Show on bottom, No Bottom Layout
    - In the Layout Option bar, click Table, Font and Row
    - In the Row Height section, clear a checkbox, Keep Current Row Height
    - Select an option, Select height for all rows
    - Use arrows to increase row height to 25
    - Click Ok



# Bar Labels Tab

- *Labels* can be placed on any of the bars listed in the dialog box. By adding dates to the bars, you can quickly determine the Start and Finish dates of activities in the Gantt Chart
- Exercise
  - Steps
    - In the Layout Option bar, click Bars
    - Select a bar, Current Bar Labels
    - Click the Bar Labels tab
    - Click Add
    - In the Position column drop-down list, select Right
    - In the Label column drop-down list, select Activity % Complete
    - Click Ok to close the Bars dialog box



# Bar Labels Tab



Bars

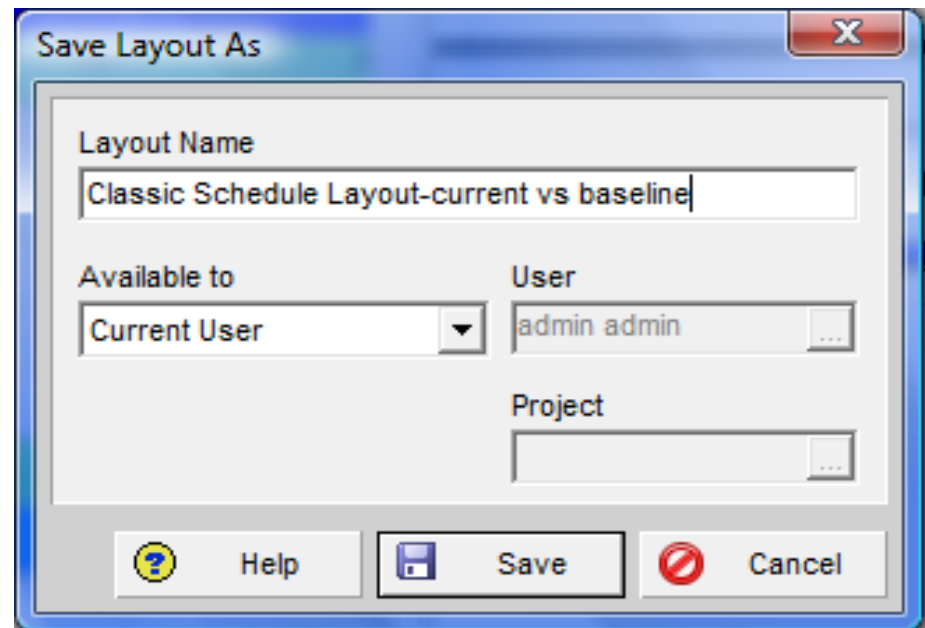
Display	Name	Timescale	User Start Date	User Finish Date	Filter	Preview
<input checked="" type="checkbox"/>	Remaining Work	Remain Bar			Normal and Non-cri	
<input checked="" type="checkbox"/>	Critical Remaining	Remain Bar			Normal and Critical	
<input type="checkbox"/>	Start Constraint	Remain Bar			Has Start Constrai	
<input type="checkbox"/>	Finish Constraint	Remain Bar			Has Finish Constrai	
<input type="checkbox"/>	Baseline Mileston	Primary Baseline E			Milestone	
<input checked="" type="checkbox"/>	Current Bar Labe	Current Bar			Normal or Level of I	
<input checked="" type="checkbox"/>	Milestone	Current Bar			Milestone	
<input type="checkbox"/>	% Complete	User Dates			Normal	

Bar Style		Bar Settings	Bar Labels
Position	Label		
Right	Activity Name		
Right	Activity % Complete		

# Saving the Layout

- If you are pleased with the layout, save it with a new name
- Exercise
  - Steps
    - In the Layout Option bar, click Layout, Save As
    - Type a layout name <Classic Schedule Layout - Current vs Baseline>
    - Click Save



# Saving the Layout



Primavera P6 Professional R8.2 : EC00515-1 (City Center Office Building Addition)

File Edit View Project Enterprise Tools Admin Help

Activities

Projects Activities

Layout: Classic Schedule Layout-current vs baseline Filter: All Activities

Activity ID	Activity Name	Original Duration	Remaining Duration
<b>EC00515-1 City Center Office Building Ad</b>			
<b>EC00515-1.D&amp;E Design and Engineering</b>			
EC1000	Design Building Addition	55	0
EC1010	Start Office Building Addition Project	0	0
EC1030	Review and Approve Designs	22	0
EC1050	Assemble Technical Data for Heat Pump	7	0
EC1160	Review Technical Data on Heat Pumps	27	0
<b>EC00515-1.Found Foundation</b>			
EC1090	Begin Building Construction	0	0
EC1100	Site Preparation	43	0
EC1230	Excavation	24	24
EC1320	Install Underground Water Lines	12	12
EC1330	Install Underground Electric Conduit	12	12
EC1340	Form/Pour Concrete Footings	24	24
EC1350	Concrete Foundation Walls	24	24
EC1360	Form and Pour Slab	12	12
EC1370	Backfill and Compact Walls	5	5
EC1380	Foundation Phase Complete	0	0
<b>EC00515-1.Structure Structure</b>			
EC1390	Erect Structural Frame	48	48
EC1410	Begin Structural Phase	0	0
EC1420	Floor Decking	34	34

2010 Nov Dec Qtr 1, 2011 Jan Feb Mar Qtr 2, 2011 Apr May Jun Qtr 3, 2011 Jul Aug

06-Apr-11 A, EC00515-1.D&E Design and Engineering

Design Building Addition, 100%

Start Office Building Addition Project, 01-Nov-10 A

Review and Approve Designs, 100%

Assemble Technical Data for Heat Pump, 100%

Review Technical Data on Heat Pumps, 100%

Begin Building Construction, 28-Feb-11 A

Site Preparation, 100%

Excavation, 0%

Install Underground Water Lin

Install Underground Electric C

Form/Pour Cc

Portfolio: All Projects Access Mode: Shared Data Date: 01-May-11 Baseline: City Center Office Building Addition - Initial Plan User: admin DB: PMDB (Professional)

# Lesson Review

- A baseline is a copy of a project that you can compare to the current project to evaluate progress. Create a baseline plan before updating a schedule for the first time
- You can create a baseline either by copying the currently opened project or converting another project into a baseline
- Assign a baseline type to categorize the baseline based on how you intend to use it
- A project baseline is the baseline selected by the project manager for the project and is controlled by a security privilege. A user baseline can be designated by each user and is used for schedule comparison only

# Project Execution & Control

## Lesson 17

# Project Execution & Control



- Objectives
  - Describe several methods for updating the project schedule
  - Use Progress Spotlight
  - Status activities
  - Reschedule the project

# Updating a Project

- Once a project has started, you need to update actual schedule information and resource usage at regular intervals. Your company will establish a standard update procedure, including how data is collected and how often it is updated

# How Often

- You may need to update daily, weekly, or monthly, depending on the length of your project and how frequently you want to adjust your forecasts



# How Data is Collected

- Project Managers manually enter the actual date, resource, and cost information
  - Record actual dates and progress, actual resource usage and cost, and expense cost
- Approve and apply time
  - Team members use timesheets to update activities
  - Project managers review and approve timesheets
  - Project managers apply timesheets to the project
- Auto compute actuals
  - Progress of activities is automatically calculated according to the project plan

# The Data Date

- When updating a project, actuals are recorded for each activity relative to the data date.
- The data date is the date upto which actual performance data is reported and the date from which future work is scheduled.
- By default, the data date is set to the beginning of the day (project) considering project is not started yet.

# Updating Process

- Create a baseline plan
- Identify the new data date with the Progress Spotlight
- Enter activity progress
- Report resource use and costs to date
- Use Suspend and Resume dates as necessary
- Apply actuals to the project
- Perform target analysis
  - Compare the current plan to the target plan to analyze variances
- Calculate the schedule
  - Be sure to verify the new data date
- Monitor project progress with reports
  - Determine whether project objectives are being met
    - Will the project finish on time?
    - Is it within budget?
    - Are project resources being used effectively?


# Updating Process

- Create a baseline plan
- Use Activity Details tabs or the Activity Table
- Use Progress Spotlight to identify activities to be updated
- Use filters and grouping to create a status layout
  - Use rolling dates for a time period look-ahead
  - Select only activities to be updated
  - Organize in a useful sequence via activity codes, resources, and dates

# Defining a Status Period

- Define the status period before you begin to update activities. In general, the status period begins at the current data date and ends at a point in future. The length of the status period depends on the frequency of your updates. You could, e.g. create a status period that extends one week from the current data date. The end of the status period will become the new data date – the date upto which actual performance is measured
- There are two options to define the status period in the Gantt Chart
  - Activity Progress Spotlight
  - Drag the Data Date
- Note that even as you establish a new status period, the new data date must still be manually changed in the Schedule dialog box

# Progress Spotlight

- *Progress Spotlight* creates a visible status period between the current data date and the next status date. It also provides a highlighted list of activities that should have progress during the update period.
- Exercise
  - Steps
    - Open a project, EC00515-City Center Office Building Addition
    - Confirm you are in Activities Window
    - In the Layout Option bar, click Layout, Open
    - Select a layout, Baseline vs. Current
    - Click  icon in the Activity Toolbar to activate Progress Spotlight
    - Click this icon again to deactivate Progress Spotlight

# Progress Spotlight



Primavera P6 Professional R8.2 : EC00515-1 (City Center Office Building Addition)

File Edit View Project Enterprise Tools Admin Help

Activities Progress Spotlight

Layout: Baseline vs. Current Filter: All Activities

Activity Name	Variance - BL1 Labor	BL1 Start	Start	BL1 Finish	Finish	Variance - BL1 Finish	Resources
EC00515-1 City Center Office Building Addition	-1418	01-Nov-10	01-Nov-10 A	19-Jun-13	19-Jun-13	0	
EC00515-1.D&E Design and Engineering	-1117	01-Nov-10	01-Nov-10 A	04-Apr-11	06-Apr-11 A	-2	
Design Building Addition	-1097	01-Nov-10	01-Nov-10 A	20-Jan-11	19-Jan-11 A	1	Paul Kim, Paul Kim
Start Office Building Addition Project	0	01-Nov-10	01-Nov-10 A			0	
Review and Approve Designs	-24	17-Jan-11	17-Jan-11 A	15-Feb-11	17-Feb-11 A	-2	Paul Kim
Assemble Technical Data for Heat Pump	-7	01-Mar-11	16-Feb-11 A	10-Mar-11	25-Feb-11 A	9	Paul Kim
Review Technical Data on Heat Pumps	11	24-Feb-11	24-Feb-11 A	04-Apr-11	06-Apr-11 A	-2	Paul Kim
EC00515-1.Found Foundation	41	23-Feb-11	23-Feb-11 A	23-Sep-11	23-Sep-11	0	
Site Preparation	41	23-Feb-11	23-Feb-11 A	25-Apr-11	18-Apr-11 A	5	Excavator
Begin Building Construction	0	01-Mar-11	28-Feb-11 A			1	
Excavation	0	02-May-11	02-May-11	06-Jun-11	06-Jun-11	0	Excavator, Excavator
Install Underground Water Lines	0	06-Jun-11	06-Jun-11	22-Jun-11	22-Jun-11	0	Plumber, Plumber
Install Underground Electric Conduit	0	06-Jun-11	06-Jun-11	22-Jun-11	22-Jun-11	0	Electrician, Electrician
Form/Pour Concrete Footings	0	22-Jun-11	22-Jun-11	27-Jul-11	27-Jul-11	0	Laborer-Construction, Rough Carpenter
Concrete Foundation Walls	0	27-Jul-11	27-Jul-11	30-Aug-11	30-Aug-11	0	Ironworker, Laborer-Construction, Rough Carpenter
Form and Pour Slab	0	30-Aug-11	30-Aug-11	16-Sep-11	16-Sep-11	0	Rough Carpenter, Laborer-Construction
Backfill and Compact Walls	0	16-Sep-11	16-Sep-11	23-Sep-11	23-Sep-11	0	Excavator, Finish Carpenter, Excavator

General Status Resources Predecessors Successors

Activity EC1100 Site Preparation Project EC00515-1

Resource Name	Cost Account	Primary Resource	Resource Type	Units / Time	Original Lag	Start	Finish	Allocated Units	Actual Regular Units	Remaining Early Units	Role
Excavator	00800	<input checked="" type="checkbox"/>	Labor	6/d	0	23-Feb-11 A	18-Apr-11 A	346	305	0	Civil/Structural Crev

Add Resource Add Role Assign by Role Remove

Portfolio: All Projects Access Mode: Shared Data Date: 01-May-11 Baseline: City Center Office Building Addition - Initial Plan User: admin DB: PMDB (Professional)

# Dragging the Data Date

- Highlight the activities to be updated by dragging the status line to the desired date
  
- Exercise
  - Steps
    - Use your mouse cursor to click and drag the data date line to the morning of 15-May-11





# Entering Actuals

- Once a project is underway, you must enter actual schedule data, resource usage, and expense costs at regular intervals. You may need to update daily, weekly, or monthly, depending on the length of your project and how frequently you want to adjust your forecasts
- Actual data is different than planned data – actual data is the real-time and cost associated with an activity gives actual expenditure
- Enter schedule, resource, and cost data in the following order
  - Completed Activities
    - Actual Start and Actual Finish dates
    - Actual Regular Units/Costs
    - Actual Cost for Expenses
  - Activities in Progress
    - Actual Start date
    - Percent Complete and/or Remaining Duration
    - Actual Regular Units/Costs and Remaining Units/ Costs
    - Actual and Remaining Costs for Expenses

# Updating Milestone Status

- To update a start milestone, mark the Started checkbox and enter the Actual Start date.
- You do not need to enter data in the Finish field because the Activity Type is Start Milestone, which has zero duration.

# Updating Activities Status to Completion



- Three steps must be performed to update the status of the activity to completion
  - Enter Actual Start and Actual Finish dates
  - Enter Actual Regular Units for resources
  - Enter Actual Cost for expenses
  
- Exercise
  - Select an activity, EC1260-Award Contract for Brick
  - Click the Status tab (bottom)
  - Mark the Finished checkbox
  - Verify the Actual Finish date, 05-May-11

# Updating Activities Status to Completion



Primavera P6 Professional R8.2 : EC00515-1 (City Center Office Building Addition)

File Edit View Project Enterprise Tools Admin Help

**Activities**

Layout: Baseline vs. Current Filter: All Activities

Activity ID	Activity Name	Variance - BL1 Labor	BL1 Start	Start	BL1 Finish	Finish	Original Duration	Vari BL1
EC1660	Connect Equipment	0	08-Feb-13	08-Feb-13	11-Feb-13	11-Feb-13	1	
EC00515-1.Ex-Finish	Exterior Finishes	-161	24-Feb-11	17-Feb-11 A	28-Jun-12	28-Jun-12	343	
EC1590	Close-In Phase Begins	0	24-May-12	24-May-12			0	
EC1620	Building Enclosed	0			28-Jun-12	28-Jun-12	0	
EC00515-1.Ex-Finish.Brick	Brick	-161	24-Feb-11	17-Feb-11 A	24-May-12	24-May-12	319	
EC1040	Assemble Brick Samples	0	01-Mar-11	17-Feb-11 A			0	
EC1070	Review and Approve Brick Samples	-25	24-Feb-11	28-Feb-11 A	06-Apr-11	13-Apr-11 A	30	
EC1180	Prepare and Solicit Bids for Brick Exterior	-92	18-Mar-11	18-Mar-11 A	08-Apr-11	13-Apr-11 A	15	
EC1220	Review Bids for Brick	-77	08-Apr-11	08-Apr-11	28-Apr-11	28-Apr-11 A	15	
EC1260	Award Contract for Brick	32	28-Apr-11	21-Apr-11 A	05-May-11	05-May-11 A	5	
EC1280	Deliver Brick	0	05-May-11	05-May-11	06-May-11	06-May-11	1	
EC1550	Brick Exterior Walls	0	01-May-12	01-May-12	24-May-12	24-May-12	17	
EC00515-1.Ex-Finish.Roof	Roof	0	24-May-12	24-May-12	28-Jun-12	28-Jun-12	24	
EC1600	Insulation and Built-up Roofing	0	24-May-12	24-May-12	28-Jun-12	28-Jun-12	24	

Activity: EC1260 Award Contract for Brick Project: EC00515-1

**Status**

Started 21-Apr-11 Physical % 8%

Finished 05-May-11 Suspend

Exp Finish Resume

**Constraints**

Primary < None > Secondary < None >

Date Date

Duration: Original 5, Actual 10, Remaining 0, At Complete 10

Total Float Free Float

▼ Labor Units

Budgeted 38, Actual 6, Remaining 0, At Complete 6

Portfolio: All Projects Access Mode: Shared Data Date: 01-May-11 Baseline: City Center Office Building Addition - Initial Plan User: admin DB: PMDB (Professional)

# Updating Activities Status to Completion



- Below you will check the Actual Regular Units for the activity.
- Note that in this example, data in the Actual Regular Units field is automatically completed because Recalculate Actual Units and Cost when duration % complete changes is selected in the Calculations tab in the Projects Window for the project.
- Exercise
  - Steps
    - Click the Resources tab (bottom)
    - In the Actual Regular Units column, verify the no. of hours, 19

# Updating Activities Status to Completion



Primavera P6 Professional R8.2 : EC00515-1 (City Center Office Building Addition)

File Edit View Project Enterprise Tools Admin Help

Activities

Projects Activities

Layout: Baseline vs. Current Filter: All Activities

Activity ID	Activity Name	Variance - BL1 Labor	BL1 Start	Start	BL1 Finish	Finish	Original Duration	Vari BL1
EC1660	Connect Equipment	0	08-Feb-13	08-Feb-13	11-Feb-13	11-Feb-13	1	
EC00515-1.Ex-Finish	Exterior Finishes	-193	24-Feb-11	17-Feb-11 A	28-Jun-12	28-Jun-12	343	
EC1590	Close-In Phase Begins	0	24-May-12	24-May-12			0	
EC1620	Building Enclosed	0			28-Jun-12	28-Jun-12	0	
EC00515-1.Ex-Finish.Brick	Brick	-193	24-Feb-11	17-Feb-11 A	24-May-12	24-May-12	319	
EC1040	Assemble Brick Samples	0	01-Mar-11	17-Feb-11 A			0	
EC1070	Review and Approve Brick Samples	-25	24-Feb-11	28-Feb-11 A	06-Apr-11	13-Apr-11 A	30	
EC1180	Prepare and Solicit Bids for Brick Exterior	-92	18-Mar-11	18-Mar-11 A	08-Apr-11	13-Apr-11 A	15	
EC1220	Review Bids for Brick	-77	08-Apr-11	08-Apr-11 A	28-Apr-11	28-Apr-11 A	15	
EC1260	Award Contract for Brick	0	28-Apr-11	21-Apr-11 A	05-May-11	05-May-11 A	5	
EC1280	Deliver Brick	0	05-May-11	05-May-11	06-May-11	06-May-11	1	
EC1550	Brick Exterior Walls	0	01-May-12	01-May-12	24-May-12	24-May-12	17	
EC00515-1.Ex-Finish.Roof	Roof	0	24-May-12	24-May-12	28-Jun-12	28-Jun-12	24	
EC1600	Insulation and Built-up Roofing	0	24-May-12	24-May-12	28-Jun-12	28-Jun-12	24	

011 May 2011 June 2011

17 24 01 08 15 22 29 05 12 19 26

3-Apr-11 A  
3-Apr-11 A  
28-Apr-11 A  
05-May-11 A  
05-May-11 06-May-11

General Status Resources Predecessors Successors

Activity EC1260 Award Contract for Brick Project EC00515-1

Resource Name	Cost Account	ary Resou	Resource	g Units / Time	Original Lag	Start	Finish	Budgeted Units	Actual Regular Units	Remaining Early Units	Role
Project Controls	00800	<input checked="" type="checkbox"/>	Labor	2/d	0	21-Apr-11 A	05-May-11 A	19	19	0	Accounting
Project Controls	00800	<input checked="" type="checkbox"/>	Labor	2/d	0	21-Apr-11 A	05-May-11 A	19	19	0	Accounting

Add Resource Add Role Assign by Role Remove

Portfolio: All Projects Access Mode: Shared Data Date: 01-May-11 Baseline: City Center Office Building Addition - Initial Plan User: admin DB: PMDB (Professional)

# Updating Activities Status in Progress

- Five Steps must be performed to update an activity in progress
  - Enter Actual Start date
  - Enter Percent Complete and/or Remaining Duration
  - Enter Actual Regular Units and Remaining Units for resources
  - Enter Actual Cost and Remaining Cost for expenses
- Exercise
  - Steps
    - Select an activity, EC1230-Excavation
    - Click the Status tab (bottom)
    - Mark the Started checkbox, and verify date 02-May-11
    - In the Physical %field, type <35>
    - Press Enter



# Updating Activities Status in Progress



Primavera P6 Professional R8.2 : EC00515-1 (City Center Office Building Addition)

File Edit View Project Enterprise Tools Admin Help

**Activities**

Layout: Baseline vs. Current Filter: All Activities

Activity ID	Activity Name	Variance - BL1 Labor	BL1 Start	Start	BL1 Finish	Actual Duration	Finish	Original Dur
EC00515-1	City Center Office Building Addition	-1434	01-Nov-10	01-Nov-10 A	19-Jun-13	131	19-Jun-13	
EC00515-1.D&E	Design and Engineering	-1117	01-Nov-10	01-Nov-10 A	04-Apr-11	109	06-Apr-11 A	
EC1000	Design Building Addition	-1097	01-Nov-10	01-Nov-10 A	20-Jan-11	54	19-Jan-11 A	
EC1010	Start Office Building Addition Project	0	01-Nov-10	01-Nov-10 A		0		
EC1030	Review and Approve Designs	-24	17-Jan-11	17-Jan-11 A	15-Feb-11	24	17-Feb-11 A	
EC1050	Assemble Technical Data for Heat Pump	-7	01-Mar-11	16-Feb-11 A	10-Mar-11	7	25-Feb-11 A	
EC1160	Review Technical Data on Heat Pumps	11	24-Feb-11	24-Feb-11 A	04-Apr-11	29	06-Apr-11 A	
EC00515-1.Found	Foundation	41	23-Feb-11	23-Feb-11 A	23-Sep-11	48	23-Sep-11	
EC1100	Site Preparation	41	23-Feb-11	23-Feb-11 A	25-Apr-11	38	18-Apr-11 A	
EC1090	Begin Building Construction	0	01-Mar-11	28-Feb-11 A		0		
EC1230	Excavation	0	02-May-11	02-May-11 A	06-Jun-11	0	06-Jun-11	
EC1320	Install Underground Water Lines	0	06-Jun-11	06-Jun-11	22-Jun-11	0	22-Jun-11	
EC1330	Install Underground Electric Conduit	0	06-Jun-11	06-Jun-11	22-Jun-11	0	22-Jun-11	
EC1340	Form/Pour Concrete Footings	0	22-Jun-11	22-Jun-11	27-Jul-11	0	27-Jul-11	

Activity: EC1230 Excavation Project: EC00515-1

Duration	Status	Exp Finish	Constraints
Original: 24	<input checked="" type="checkbox"/> Started	02-May-11	Primary: <None> Secondary: <None>
Actual: 0	<input type="checkbox"/> Finished	06-Jun-11	Date: Date
Remaining: 24	Exp Finish:		
At Complete: 24			
Total Float: 131			
Free Float: 0			

Project: EC00515-1

Labor Units	Budgeted	Actual	Remaining	At Complete
	384	0	384	384

Portfolio: All Projects Access Mode: Shared Data Date: 01-May-11 Baseline: City Center Office Building Addition - Initial Plan User: admin DB: PMDB (Professional)

# Updating Activities Status in Progress

- Actual Regular Units are the no. of units that resource(s) actually worked on the activity.
- Remaining Units represents the amount of work (units) that is required to complete the activity
- The formula for calculating Remaining Units is:
  - Remaining Units = Remaining Duration x Remaining Units/Time
- Exercise
  - Steps
    - Click the Resources tab (bottom)
    - In the Actual Regular Units column, verify that Excavator has worked 72 hours
    - In the Remaining Units column, verify 122 hours

# Updating Activities Status in Progress



Primavera P6 Professional R8.2 : EC00515-1 (City Center Office Building Addition)

File Edit View Project Enterprise Tools Admin Help

Activities

Projects Activities

Layout: Baseline vs. Current Filter: All Activities

Activity ID	Activity Name	Variance - BL1 Labor	BL1 Start	Start	BL1 Finish	Actual Duration	Finish	Original Dur.
EC00515-1	City Center Office Building Addition	-1438	01-Nov-10	01-Nov-10 A	19-Jun-13	131	19-Jun-13	
EC00515-1.D&E	Design and Engineering	-1117	01-Nov-10	01-Nov-10 A	04-Apr-11	109	06-Apr-11 A	
EC1000	Design Building Addition	-1097	01-Nov-10	01-Nov-10 A	20-Jan-11	54	19-Jan-11 A	
EC1010	Start Office Building Addition Project	0	01-Nov-10	01-Nov-10 A		0		
EC1030	Review and Approve Designs	-24	17-Jan-11	17-Jan-11 A	15-Feb-11	24	17-Feb-11 A	
EC1050	Assemble Technical Data for Heat Pump	-7	01-Mar-11	16-Feb-11 A	10-Mar-11	7	25-Feb-11 A	
EC1160	Review Technical Data on Heat Pumps	11	24-Feb-11	24-Feb-11 A	04-Apr-11	29	06-Apr-11 A	
EC00515-1.Found	Foundation	37	23-Feb-11	23-Feb-11 A	23-Sep-11	48	23-Sep-11	
EC1100	Site Preparation	41	23-Feb-11	23-Feb-11 A	25-Apr-11	38	18-Apr-11 A	
EC1090	Begin Building Construction	0	01-Mar-11	28-Feb-11 A		0		
EC1230	Excavation	-4	02-May-11	02-May-11 A	06-Jun-11	0	06-Jun-11	
EC1320	Install Underground Water Lines	0	06-Jun-11	06-Jun-11	22-Jun-11	0	22-Jun-11	
EC1330	Install Underground Electric Conduit	0	06-Jun-11	06-Jun-11	22-Jun-11	0	22-Jun-11	
EC1340	Form/Pour Concrete Footings	0	22-Jun-11	22-Jun-11	27-Jul-11	0	27-Jul-11	

Activity: EC1230 Excavation Project: EC00515-1

Resource Name	Cost Account	Primary Resou	g Units / Time	Original Lag	Start	Finish	Budgeted Units	Actual Regular Units	Remaining Units	Role	to Compute Actu
Excavator	00800	<input checked="" type="checkbox"/>	5/d	0	02-May-11 A	03-Jun-11	192	72	122	Civil/Structural Crev	<input checked="" type="checkbox"/>
Excavator	00800	<input checked="" type="checkbox"/>	5/d	0	02-May-11 A	06-Jun-11	192	72	122	Civil/Structural Crev	<input checked="" type="checkbox"/>

Portfolio: All Projects Access Mode: Shared Data Date: 01-May-11 Baseline: City Center Office Building Addition - Initial Plan User: admin DB: PMDB (Professional)

# Suspending an Activity

- When an activity starts but is unexpectedly delayed or stopped for a period time, you may suspend it
- A suspended activity must have an Actual Start
- Use the Status tab to enter Suspend and Resume dates
  - *Suspend date* – The last day that work was conducted on the activity
  - *Resume date* – The first day that work will continue on the activity
- The actual duration excludes suspension time
- Use the Notebook tab to document the reason for the suspension
- Exercise
  - Steps
    - Select an Activity, EC1240-Review Bids for Heat Pump
    - Click the Status tab (bottom)
    - Mark the Started checkbox
    - Select the Actual Start Date, 04-May-11
    - In the Physical % field, verify <50>
    - Click Browse button in Suspend field, select a date 09-May-11
    - Click Browse button in Resume field, select a date 11-May-11

# Suspending an Activity



Primavera P6 Professional R8.2 : EC00515-1 (City Center Office Building Addition)

File Edit View Project Enterprise Tools Admin Help

Activities

Projects Activities

Layout: Baseline vs. Current Filter: All Activities

Activity ID	Activity Name	Variance - BL1 Labor	BL1 Start	Start	BL1 Finish	Finish
EC1710	Install Elevator Cab and Finishes	0	21-Feb-13	21-Feb-13	28-Feb-13	28-Feb-13
EC00515-1.Mechanicals.HVAC HVAC		-59	13-Apr-11	14-Apr-11 A	12-Jun-13	12-Jun-13
EC1190	Prepare and Solicit Bids for Heat Pump	-59	13-Apr-11	14-Apr-11 A	04-May-11	04-May-11
EC1240	Review Bids for Heat Pump	0	04-May-11	04-May-11 A	17-May-11	17-May-11
EC1270	Award Contract for Heat Pump	0	17-May-11	17-May-11	25-May-11	25-May-11
EC1290	Fabricate and Deliver Heat Pump and Controls	0	25-May-11	25-May-11	23-Jan-13	23-Jan-13
EC1500	Install HVAC Ducts	0	21-Mar-12	21-Mar-12	24-Apr-12	24-Apr-12
EC1630	Insulate Ducts	0	28-Jun-12	28-Jun-12	06-Jul-12	06-Jul-12
EC1650	Set Heat Pump	0	23-Jan-13	23-Jan-13	08-Feb-13	08-Feb-13
EC1670	Relocate HVAC Chiller	0	08-Feb-13	08-Feb-13	19-Feb-13	19-Feb-13
EC1680	Startup and Test HVAC	0	19-Feb-13	19-Feb-13	21-Feb-13	21-Feb-13
EC1770	Install AC Grills and Registers	0	24-Apr-13	24-Apr-13	01-May-13	01-May-13
EC1830	Test and Balance HVAC Equipment	0	10-Jun-13	10-Jun-13	12-Jun-13	12-Jun-13
EC00515-1.Mechanicals.Systems.Plumbing and Electrical		0	31-Jan-12	31-Jan-12	11-Feb-13	11-Feb-13
EC1440	Set Mechanical and Electrical Equipment	0	31-Jan-12	31-Jan-12	21-Mar-12	21-Mar-12

General Status Resources Predecessors Successors Codes Expenses Feedback Notebook Relationships Risks Steps Summary WPs & Docs

Activity EC1240 Review Bids for Heat Pump Project EC00515-1

Duration	Status
Original: 10	<input checked="" type="checkbox"/> Started 04-May-11 Physical % 50%
Actual: 0	<input type="checkbox"/> Finished 17-May-11 Suspend 09-May-11
Remaining: 10	Exp Finish Resume 11-May-11
At Complete: 8	
Total Float: 5	Constraints
Free Float: 0	Primary: < None > Secondary: < None >
	Date: Date

Project EC00515-1

▼ Labor Units

Budgeted	77
Actual	0
Remaining	77
At Complete	77

Portfolio: All Projects Access Mode: Shared Data Date: 01-May-11 Baseline: City Center Office Building Addition - Initial Plan User: admin DB: PMDB (Professional)

# Suspending an Activity

- Exercise
  - Steps
    - Right-click in the Activity Details, and then click Customize Activity Details...
    - Add the Notebook tab to the Activity Details
    - Click the Notebook tab
    - Click Add, and then select a Notebook topic, Delay Impacts
    - Type a description <Review suspended due to non-availability of resource person>

# Suspending an Activity



Primavera P6 Professional R8.2: EC00515-1 (City Center Office Building Addition)

File Edit View Project Enterprise Tools Admin Help

**Activities**

Projects Activities

Layout: Baseline vs. Current Filter: All Activities

Activity ID	Activity Name	Variance - BL1 Labor	BL1 Start	Start	BL1 Finish	Finish
EC1710	Install Elevator Cab and Finishes	0	21-Feb-13	21-Feb-13	28-Feb-13	28-Feb-13
EC00515-1	Mechanicals.HVAC HVAC	-59	13-Apr-11	14-Apr-11 A	12-Jun-13	12-Jun-13
EC1190	Prepare and Solicit Bids for Heat Pump	-59	13-Apr-11	14-Apr-11 A	04-May-11	04-May-11
EC1240	Review Bids for Heat Pump	0	04-May-11	04-May-11 A	17-May-11	17-May-11
EC1270	Award Contract for Heat Pump	0	17-May-11	17-May-11	25-May-11	25-May-11
EC1290	Fabricate and Deliver Heat Pump and Controls	0	25-May-11	25-May-11	23-Jan-13	23-Jan-13
EC1500	Install HVAC Ducts	0	21-Mar-12	21-Mar-12	24-Apr-12	24-Apr-12
EC1630	Insulate Ducts	0	28-Jun-12	28-Jun-12	06-Jul-12	06-Jul-12
EC1650	Set Heat Pump	0	23-Jan-13	23-Jan-13	08-Feb-13	08-Feb-13
EC1670	Relocate HVAC Chiller	0	08-Feb-13	08-Feb-13	19-Feb-13	19-Feb-13
EC1680	Startup and Test HVAC	0	19-Feb-13	19-Feb-13	21-Feb-13	21-Feb-13
EC1770	Install AC Grills and Registers	0	24-Apr-13	24-Apr-13	01-May-13	01-May-13
EC1830	Test and Balance HVAC Equipment	0	10-Jun-13	10-Jun-13	12-Jun-13	12-Jun-13
EC00515-1	Mechanicals.Systems Plumbing and Electrical	0	31-Jan-12	31-Jan-12	11-Feb-13	11-Feb-13
EC1440	Set Mechanical and Electrical Equipment	0	31-Jan-12	31-Jan-12	21-Mar-12	21-Mar-12

Calendar view showing activity bars for April 2011, May 2011, June 2011, and July 2011. Activity EC1240 is highlighted in yellow.

General Status Resources Predecessors Successors Codes Expenses Feedback Notebook Relationships Risks Steps Summary WPs & Docs

Activity: EC1240 Review Bids for Heat Pump Project: EC00515-1

Notebook Topic: Changes

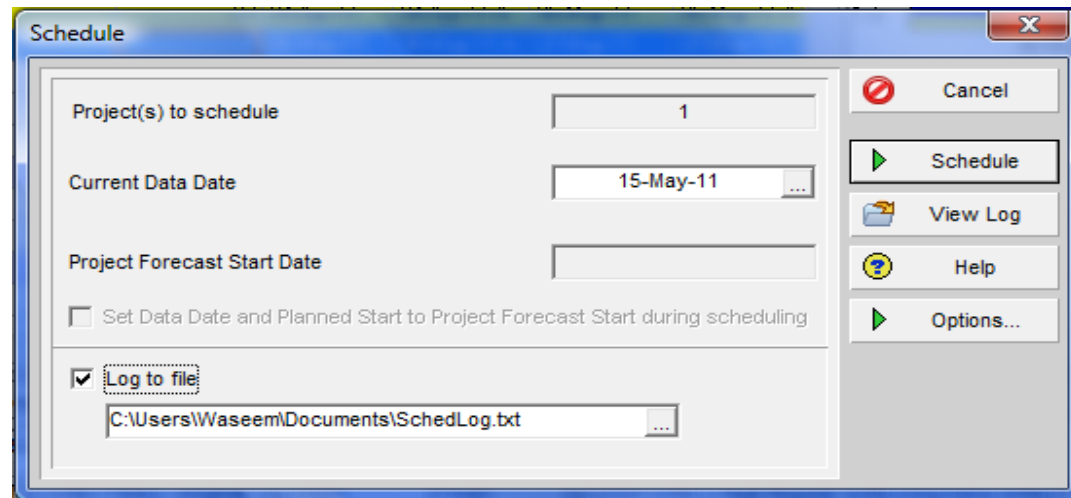
Changes: *Review suspended due to non-availability of resource person*

Modify Print Copy

Portfolio: All Projects Access Mode: Shared Data Date: 01-May-11 Baseline: City Center Office Building Addition - Initial Plan User: admin DB: PMDB (Professional)

# Rescheduling the Project

- Now that actuals have been entered, it is time to reschedule the project based on the new data date. Any activities that did not finish on time will delay their successor activities.
- Exercise
  - Steps
    - In the Tools menu, click Schedule
    - In the Current Data Date field, select 15-May-11
    - Click Schedule button

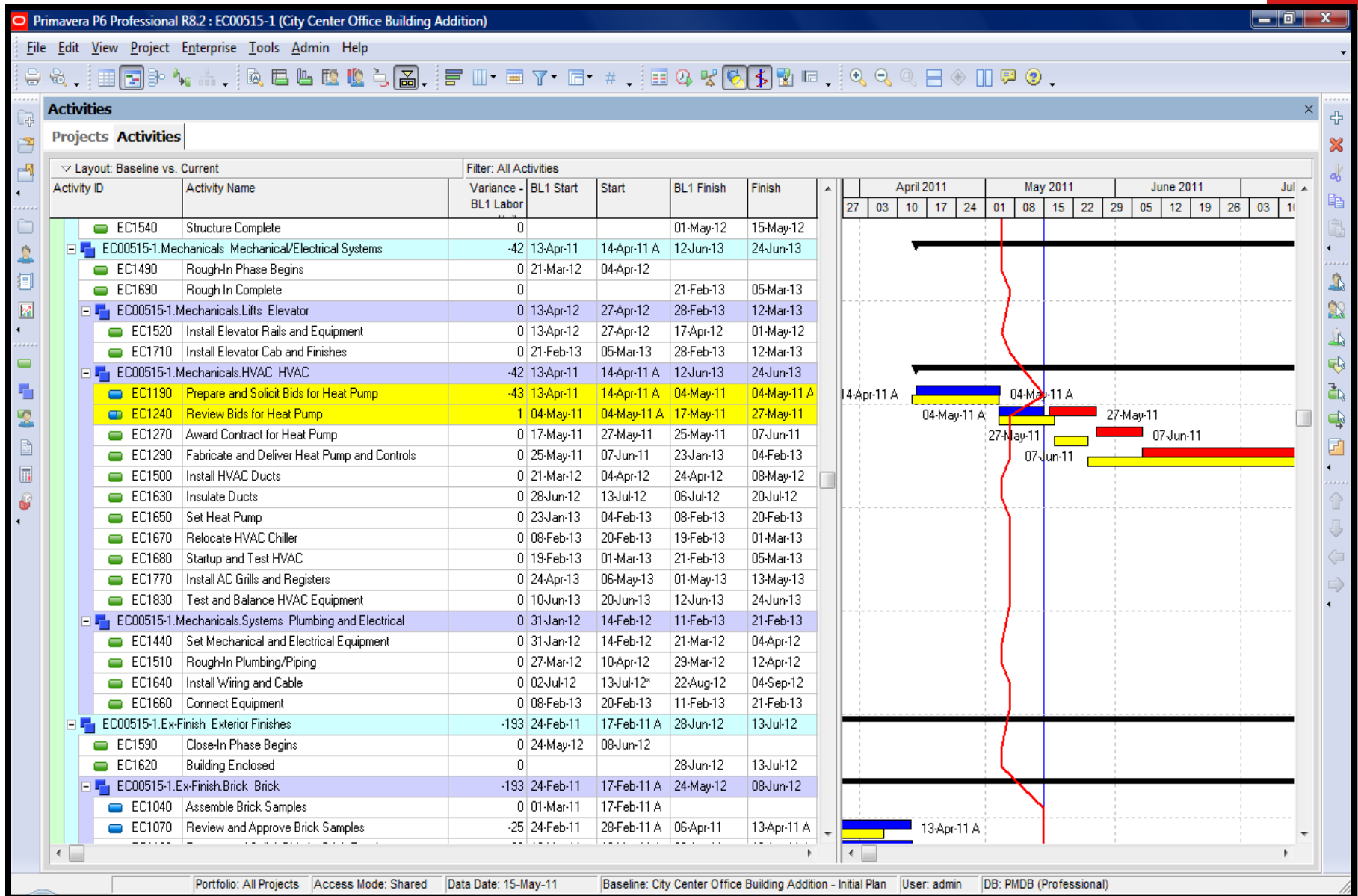




# Viewing the Results of Rescheduling

- After the project has been rescheduled,
  - Analyze the activities on the critical path
  - Review the project's performance to date
  - Develop strategies for getting the project back on track
  - Gain agreement within your project team
  - Implement the revised project plan
- Exercise
  - Click Spotlight icon to deactivate the Progress Spotlight
  - Hide the bottom layout

# Viewing the Results of Rescheduling



# Controlling the Project

- After scheduling a project, analyze schedule dates, resource allocation, and the cost budget

# Analyzing Schedule Dates

- Analyze the schedule to determine if milestone dates and project dates are being met
  - Compare the calculated Finish date to the Must Finish By date to see if you will complete the project on time
  - If the project is behind schedule, analyze the critical activities
  - Adjust the project to meet your project Finish date

# Analyzing Resource Allocation



- After adjusting the project, determine if resources are being used effectively

# Analyzing the Cost Budget



- After adjusting the project, view At Completion Total Cost to determine if you are within your budget

# Compressing the Schedule

- If the calculated Finish date is later than the Must Finish By date, you can use several methods to shorten the project (already discussed)
  - Use relationships to overlap activities
  - Add resources to reduce durations
  - Break-down long activities
  - Change calendar assignments
    - Put critical activities on a longer workweek
    - Add exceptions to non-worktime

# Compressing the Schedule

- You can use the following set of questions to help you decide how to most appropriately adjust the schedule
  - Can the Finish date of the project slip
    - The project may need to be delayed if no other options are available
    - If the delay is approved, adjust the affected milestones
    - If the delay is not approved, find another way to meet the project milestones and Finish date of the project
  - Can scope of the activity/project decrease?
    - In some cases, in order to meet the project milestones and finish date, you can decrease the total amount of work that will be accomplished, i.e. decrease the scope of the project
    - If the scope change is approved, decrease the scope by reducing the total hours work on activities. This will change the duration of the activities. Break down long activities
    - If the scope change is not approved, find another way to meet the project milestones and Finish date of the project

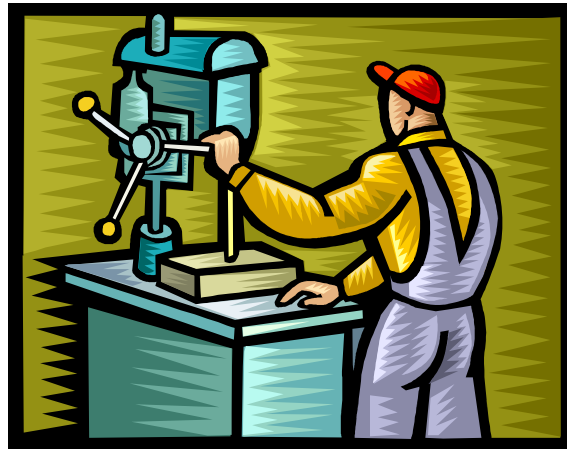


# Compressing the Schedule

- Were the budgeted hours over-or-under estimated
  - You may have over-estimated the no. of hours to complete activities; the scope of work can be accomplished in fewer hours
  - You can decrease the total hours work on activities, which decreases the duration of the activities
- Can an additional resource be assigned
  - You can assign another resource to the activity to finish it on time
  - This may be possible if another resource with the necessary skills is available
  - If a resource is available, you can assign it to make up the hours
- Can the resource work overtime
  - The resource may need to work overtime to complete an activity on time
  - If this is possible, you can decrease the duration of the activity, then enter the original remaining hours
  - The hours the resource works each day will increase

# WORKSHOP

## Project Execution & Control



# Lesson Review

- Once a project has started, use one of three options to update actual schedule
  - Manually enter the actual dates and resource/cost information
  - Approve and apply timesheets
  - Auto compute actuals
- When updating a project, actuals are recorded for each activity relative to the data date. The data date is the date upto which actual performance data is reported, from which future work is scheduled
- To status complete activities, update Actual Start and Actual Finish dates, Actual Regular Units/Cost for Resources & Expenses
- To status activities in progress, update Actual Start date, Percent Complete and/or Remaining duration, Actual Regular Units/Costs, Remaining Units/Costs, and Actual and Remaining Costs for expenses
- After actuals are entered, reschedule the project based on the new data date, activities that do not finish on time will delay successor activities
- After scheduling, analyze schedule dates, resource allocation, and cost budget. If the calculated Finish date is later than the Must Finish By date, try to shorten the project duration using optimization methods

# Reporting Performance

## Lesson 18

# Reporting Performance

- Objectives

- Describe reporting methods
- Run a schedule report
- Create a resource report with the Report Wizard
- Create a report using the current layout
  
- Reporting Resource Profiles (Cost & Units Based)
- Reporting Activity Usage Profiles (Cost & Units Based)
- Getting S-Curve with Resource Loading
- Displaying S-Curve with Earned Value Cost & Units
  
- Experiencing Primavera Visualizer for customized Gantt Charts & TSLDs

# Methods for Performance Reporting

- There are many methods to distribute schedule, resource, and cost performance information to the project team, including:
  - Printed layouts
  - Printed reports from the Report Wizard
  - Printed reports from the Report Writer
  - Project Website
  - Timesheets
  - Primavera Web Applications

# Reports Window

- The *Reports Window* displays reports for schedule, resource and cost
- Exercise
  - Open project, City Center Office Building Addition
  - In the Directory bar, click Reports

# Reports Window



The screenshot shows the Primavera Reports window for a project named 'Primavera : Bldg-1 (Office Building Addition)'. The window has a menu bar (File, Edit, View, Project, Enterprise, Tools, Admin, Help) and a toolbar (Back, Forward, Home, Dir, Help). A left-hand navigation pane contains icons for Projects, Resources, Reports, Tracking, WBS, Activities, Assignments, WPs & Docs, Expenses, Thresholds, Issues, and Risks. The main area displays a list of reports grouped into categories: Standard Construction Reports, Schedule, Resource, Control, Productivity, and Earned Value. A table below the list shows the Report Name, Report Scope, and Last Run Date for selected reports. A bottom panel contains input fields for Report Name, Report Scope, Report Group, and Last Run Date. Annotations 1 through 6 are placed around the interface: 1 points to the right-hand toolbar; 2 points to the Reports icon in the left navigation pane; 3 points to the 'Report Group: Schedule' header; 4 points to the Report Group dropdown in the bottom panel; 5 points to the 'Report Group: Control' header; 6 points to the 'Display: All Reports' dropdown at the top of the report list.

Report Name	Report Scope	Last Run Date
<b>Report Group: Standard Construction Reports</b>		
AD-01 Activity Status Report	Global	
LA-01 Two Week Lookahead	Global	
LG-01 Logic Report, By Project	Global	
Notebook Topics	Global	
RC-01 Resource Control Report	Global	
<b>Report Group: Schedule</b>		
SR-01 Classic Schedule Report - Sort by ES, TF	Global	
SR-02 Schedule Report with RESP - Sort by ES, TF	Global	
SR-03 Schedule Report with Activity Budgets	Global	
SR-04 Schedule Report with Logs	Global	08-Dec-06
SR-06 Schedule Report - Predecessors & Successors	Global	
SR-10 Schedule Report Turnaround Document	Global	
SR-11 Schedule Report with Resource Budgets	Global	
SR-15 Schedule Report - Sorted by Total Float	Global	
SR-16 Schedule Report by Total Float (60 Day Lookahead)	Global	
SR-18 Schedule Report - Sorted by Activity ID	Global	
SR-22 Schedule Report with Resource Usage	Global	12-Jul-05
<b>Report Group: Resource</b>		
<b>Report Group: Control</b>		
RC-01 Resource Control - Detail by Activity	Global	
RC-02 Resource Control - Summary by Resource	Global	
<b>Report Group: Productivity</b>		
<b>Report Group: Earned Value</b>		
RE-01 Earned Value Units for WBS and Activities	Global	



# Reports Window

Item	Functionality
1. Command Bar	Displays options for adding, editing, or running reports
2. Reports List	Displays the list of reports available to this project
3. Report Scope	Reports can be global or project-specific. Global reports link to Portfolio Analysis
4. Report Group	Every report can belong to one report group
5. Report Name	Displays the user-defined name of the report
6. Display Option bar	Click to sort and filter the reports, define fonts/colors

# Running an Existing Report

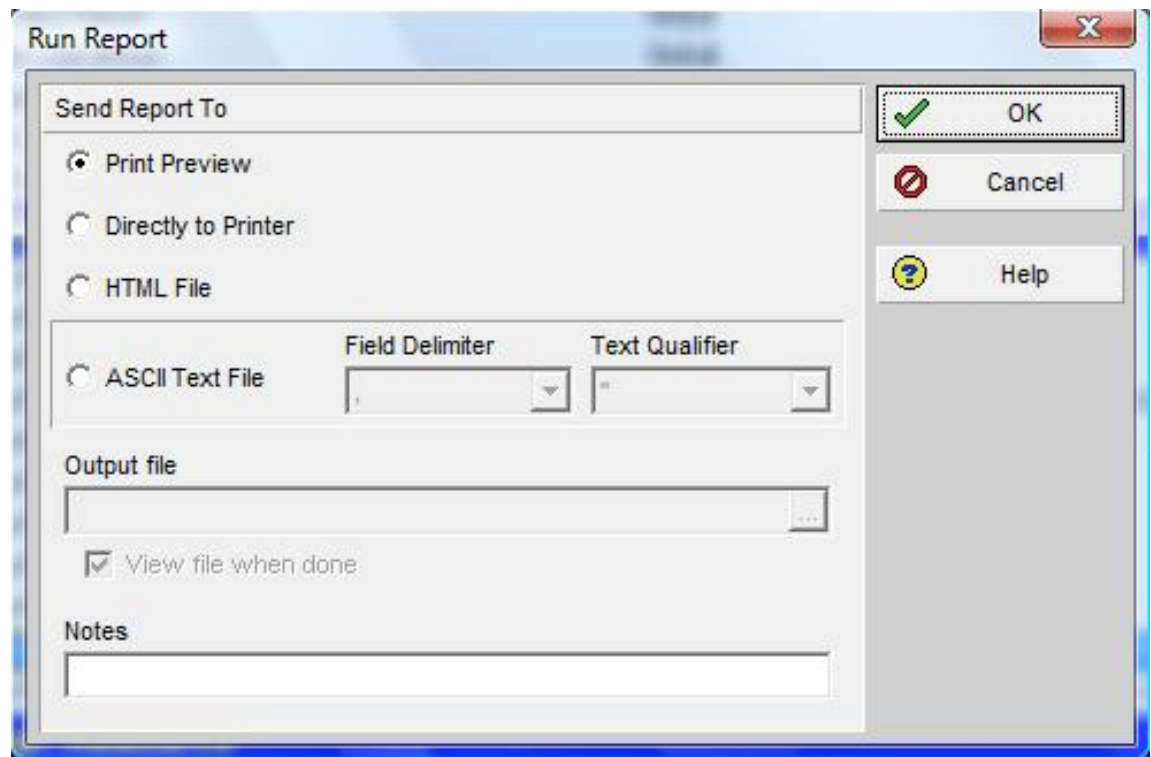
- You can report schedule performance using a pre-defined schedule report
- Exercise
  - Steps
    - Locate a Report Group title band, Schedule
    - Select a report, SR-18 Schedule Report – Sorted by Activity ID
    - In the Command bar, click Run Report

# Run Report Dialog Box

- Exercise

- Steps

- In the Run Report dialog box, verify that Print Preview is selected
    - Click Ok



# Run Report Dialog Box

- Use the *Run Report* dialog box to compile and print the selected report
  - *Print Preview* – Preview the report
  - *Directly to Printer* – Compile and print the report
  - *HTML File* – Compile and save the report as an HTML file
  - *ASCII Text File* – Choose to compile and save the report as a delimited text file (.txt)
    - *Field Delimiter* – Select the character used to separate categories of information that you save in delimited text format (i.e. comma, tab, space)
    - *Text Qualifier* – Select the character used to separate categories of data that you save in delimited text format if the data contains the field delimiter you specify, such as quote marks (“
  - *Output File* – If you choose HTML File or ASCII Text File, click to specify the file name and location where you want to save the report
  - *View file when done* – Mark this checkbox to automatically open the report in your default Web Browser for an HTML file or default text viewer for an ASCII text file
  - *Notes* – Use to add a comment to the report. Comment appears directly under the report title

# Print Preview

- *Print Preview* allows you to make modifications to the layout before printing
  - Page Setup
  - Print Setup
  - Print
  - Publish
  - Left/Right/Up/Down
  - Last/First Page
  - Zoom In/ Out
  - Help
  - Close

# Run Report Dialog Box

- Printing reports is an effective way to communicate project information with resources and other project managers
- The report below displays Original Duration, Remaining Duration, Percent Complete, Activity Name, Early Start, Early Finish, Late Start, Late Finish, and Total Float of all activities in the project

# Run Report



Office Building Addition

Report Date 14-Feb-10 13:26

Project Start Date 05-Feb-07  
Project Finish Date 25-Dec-07  
Data Date 01-Jul-07

**SR-18 Schedule Report - Sorted by Activity ID**

Activity ID	Orig Dur	Rem Dur	Calendar	% Department	Activity Name	Early Start	Early Finish	Late Start	Late Finish	Total Float
B-PE	51	51	Standard 5 Day Workweek	0	Plumbing & Electrical Summary	16-Aug-07	25-Oct-07	11-Sep-07	29-Oct-07	18
BA-B	136	7	Standard 5 Day Workweek	34.85	Brick Summary	21-Mar-07 A	26-Sep-07	20-Sep-07	28-Sep-07	2
BA-C	23	23	Standard 5 Day Workweek	0	Ceiling Summary	19-Nov-07	19-Dec-07	21-Nov-07	21-Dec-07	2
BA-DE	45	0	Standard 5 Day Workweek	100	Design & Engineering Summary	05-Feb-07 A	06-Apr-07 A			
BA-DW	3	3	Standard 5 Day Workweek	0	Doors and Windows Summary	25-Sep-07	27-Sep-07	10-Oct-07	12-Oct-07	11
BA-E	36	36	Standard 5 Day Workweek	0	Elevator Summary	11-Sep-07	30-Oct-07	30-Oct-07	21-Dec-07	35
BA-EXT	146	17	Standard 5 Day Workweek	38.36	Exterior Finishes Summary	21-Mar-07 A	10-Oct-07	20-Sep-07	27-Dec-07	2
BA-F	62	0	Standard 5 Day Workweek	100	Foundation Summary	21-Mar-07 A	14-Jun-07 A			
BA-FC	191	118	Standard 5 Day Workweek	38.22	Floor and Carpeting Summary	21-Mar-07 A	12-Dec-07	04-Dec-07	14-Dec-07	111
BA-HVAC	185	125	Standard 5 Day Workweek	32.43	HVAC Summary	09-Apr-07 A	21-Dec-07	31-Aug-07	25-Dec-07	44
BA-IF	200	127	Standard 5 Day Workweek	36.5	Interior Finishes Summary	21-Mar-07 A	25-Dec-07	31-Oct-07	27-Dec-07	87
BA-ME	185	125	Standard 5 Day Workweek	32.43	Mech/Electrical Summary	09-Apr-07 A	21-Dec-07	31-Aug-07	25-Dec-07	44

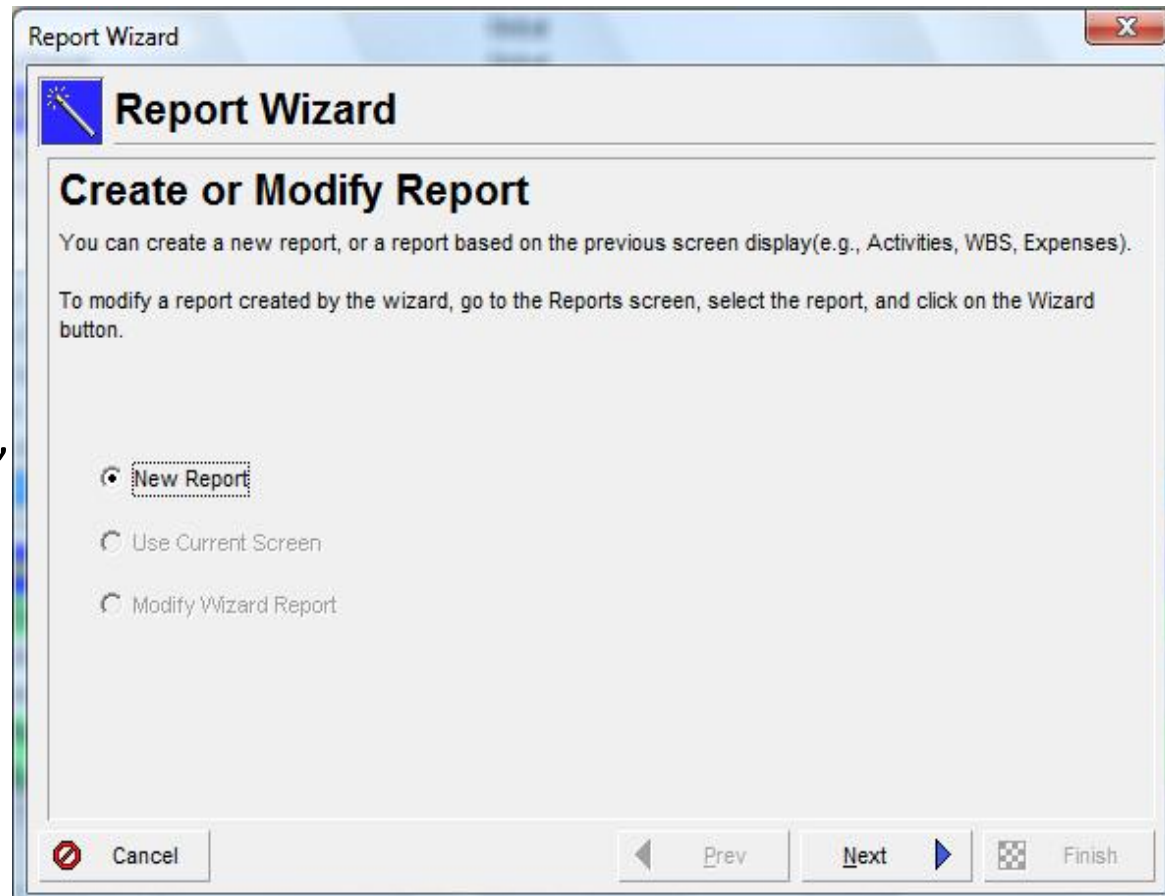
# Report Wizard

- The *Report Wizard* enables you to easily create a wide variety of adhoc reports.
- The reports can be modified as they are built, or they can be reopened later to be modified
- To create a wizard report
  - Select a base table and pertinent data fields
  - Organize the data via grouping, sorting, and filtering options



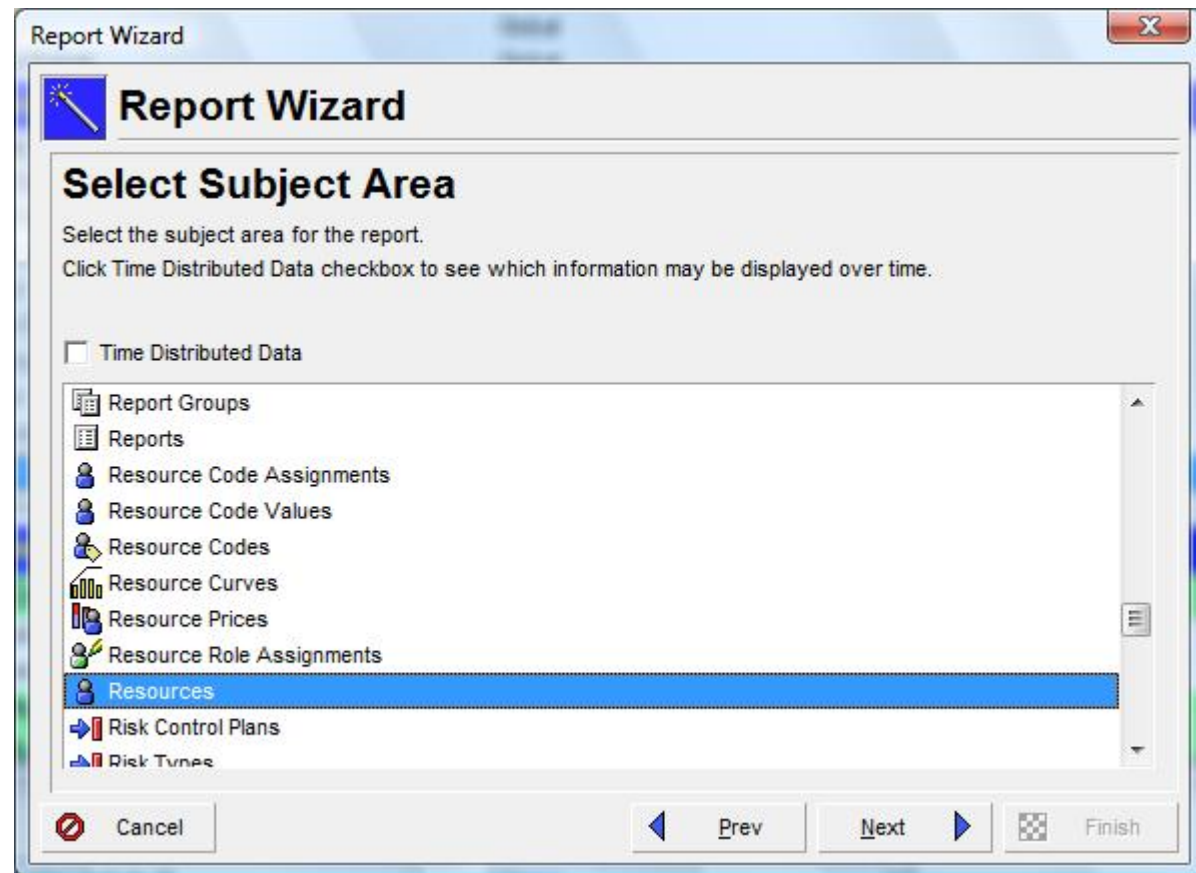
# Create or Modify Report

- You will use the wizard to create a report that shows the resource assignments on the project and related Notebook topics
- Exercise
  - Steps
    - In the Command bar, Click Add
    - Verify the option, New Report
    - Click Next



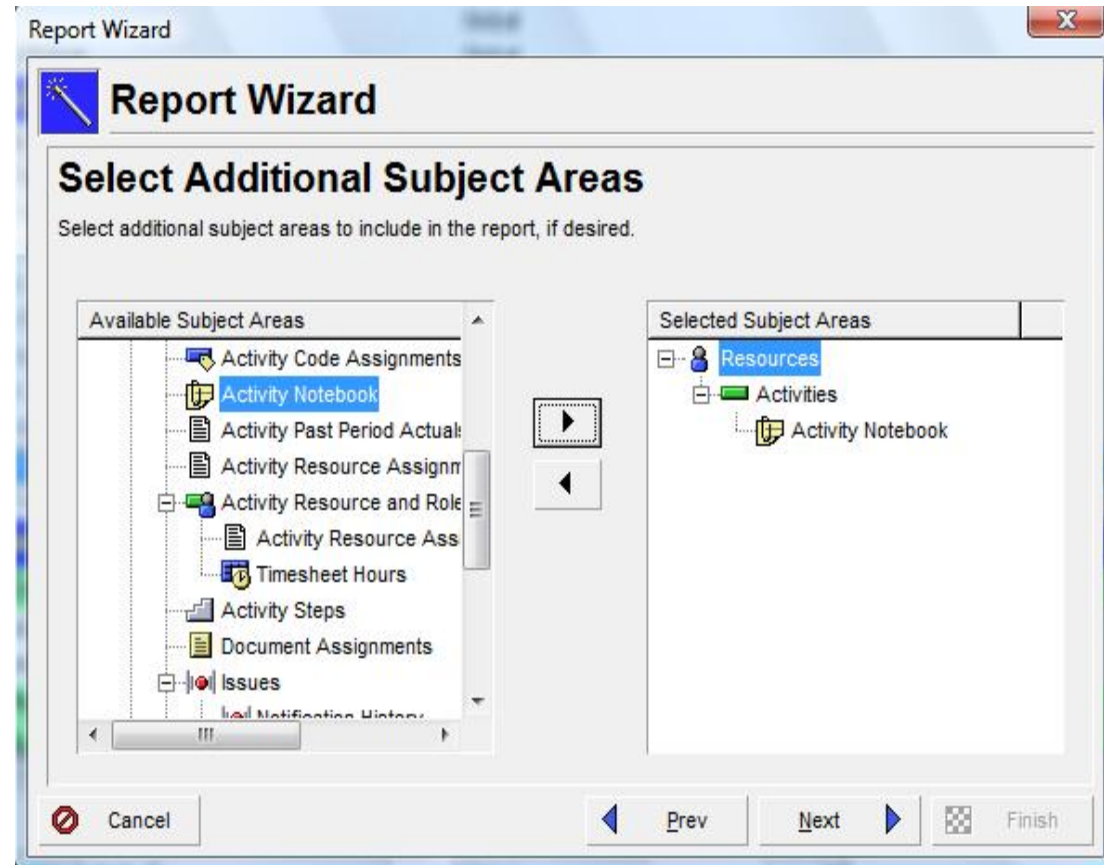
# Select Subject Area

- Exercise
  - Steps
    - Select a Subject Area, Resources
    - Click Next



# Select Additional Subject Area

- Exercise
  - Steps
    - Select a subject area, Activity Notebook
    - Click Arrow button to include in selection
    - Click Next



# Configure Selected Subject Area

- Select the columns you would like to use in the report
- Exercise
  - Steps
    - Select Resources
    - Click Columns
    - Use left arrow to remove all the columns from the selected option section except Resource ID and Resource Name
    - Click Ok

# Configure Selected Subject Area



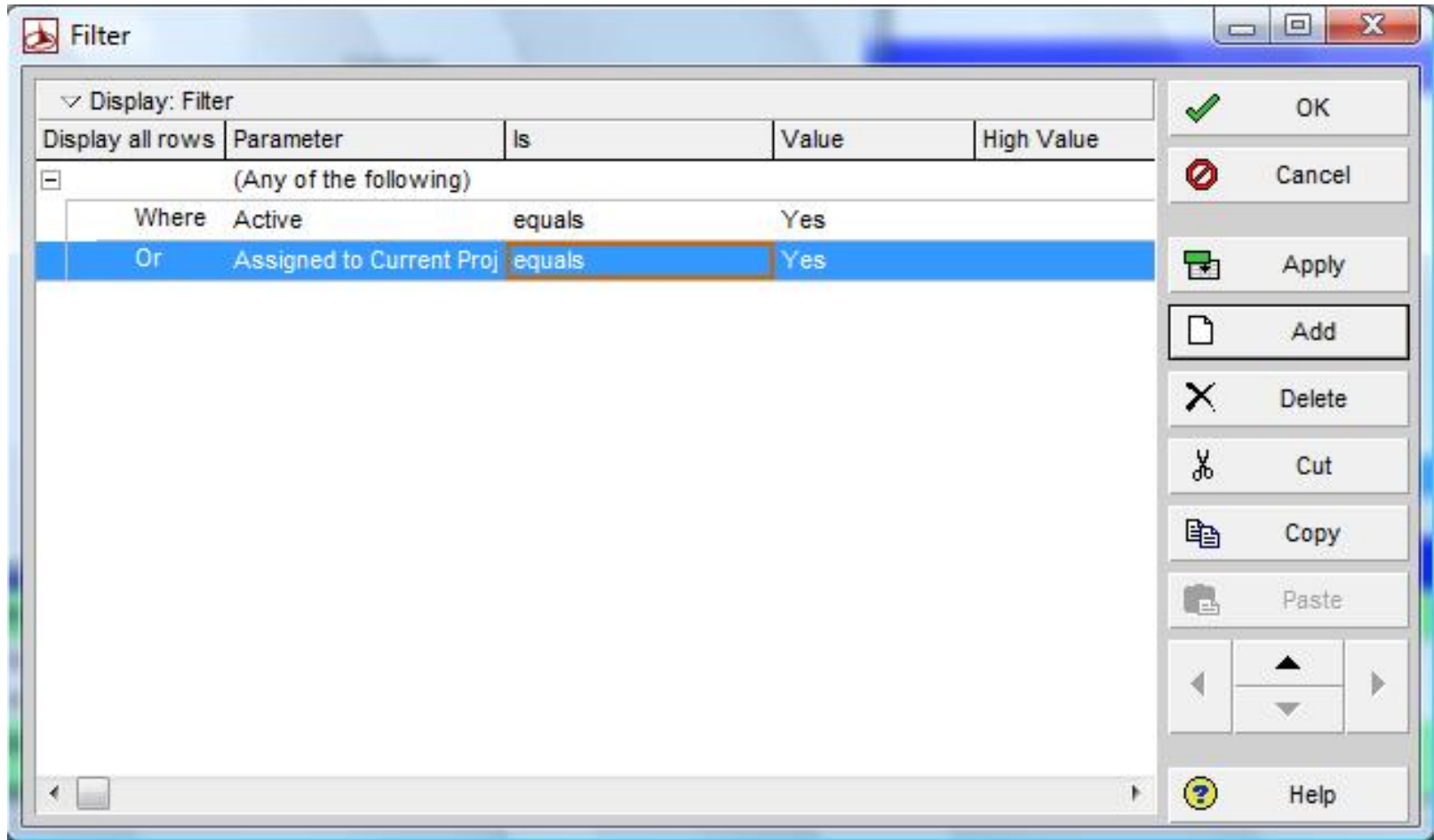
The screenshot displays the Primavera software interface with the following components:

- Report Wizard - Configure Selected Subject Areas:** A dialog box with a tree view showing 'Resources' selected under 'Selected Subject Areas'. It includes buttons for 'Columns...', 'Group & Sort...', and 'Filter...', along with a 'Hide Subject Area' checkbox.
- Columns Dialog:** A dialog box for configuring columns. It features two lists: 'Available Options' (General, Resource Codes, User Defined) and 'Selected Options' (Resource ID, Resource Name, Resource Type, Unit of Measure, Primary Role, Default Units / Time). It includes 'OK', 'Cancel', 'Apply', 'Default', 'Edit Column...', and 'Help' buttons.
- Main Report View:** A table with a 'Last Run Date' column and a date value '08-Dec-06'. The table has blue and green horizontal bars.
- Report Wizard - Report Group:** A section showing report groups like 'Report Group: Cont...', 'Report Group: Prod...', and 'Report Group: Earn...'. Below it, 'Report Name' is 'SR-18 Schedule Report - Sorted by...' and 'Report Group' is 'Schedule'.
- Footer:** Portfolio: All Projects | User: admin | Data Date: 01-Jul-07 | Access Mode: Shared | Baseline: Current Project

# Adding Filter to the Report

- Select a filter you would like to use in the report
- Exercise
  - Steps
    - Click Filter
    - Click Add
    - Double-click on any of the following and Select All
    - In the second row, click the Parameter cell and select a data item, Assign to Current Project
    - Double-click in the Is Cell to select a filter criteria, Equal
    - Double-click in the Value cell to select Yes
    - Click Ok
    - Click Next

# Adding Filter to the Report

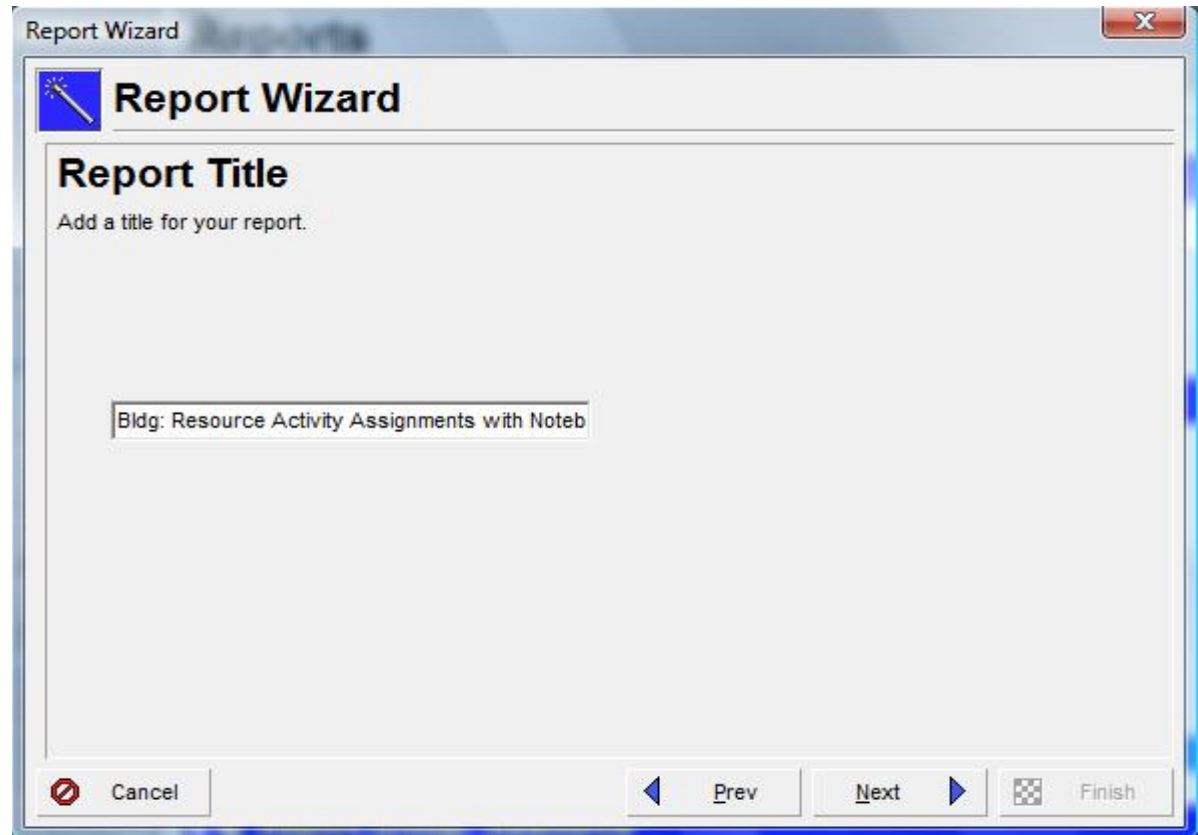


# Adding a Report Title

- Exercise

- Steps

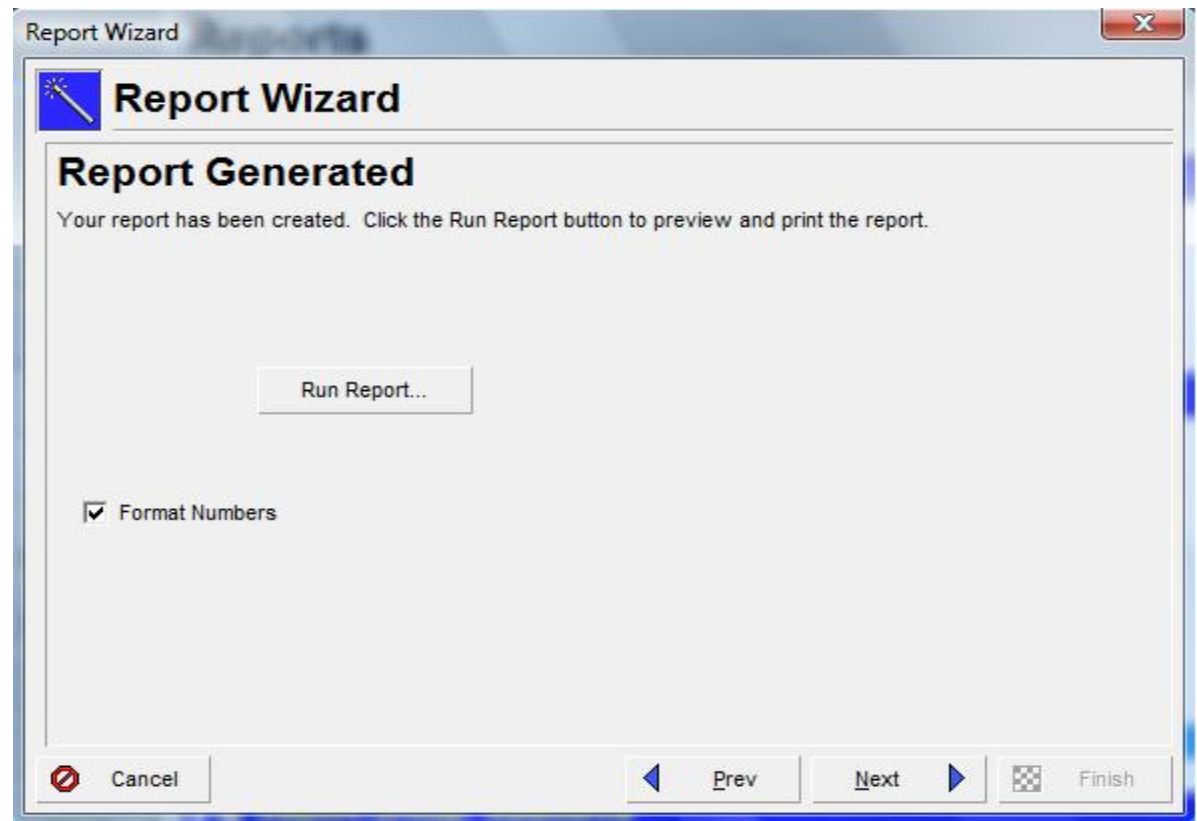
- Type a descriptive report title <Bldg: Resource Activity Assignment with Notebook>
    - Click Next





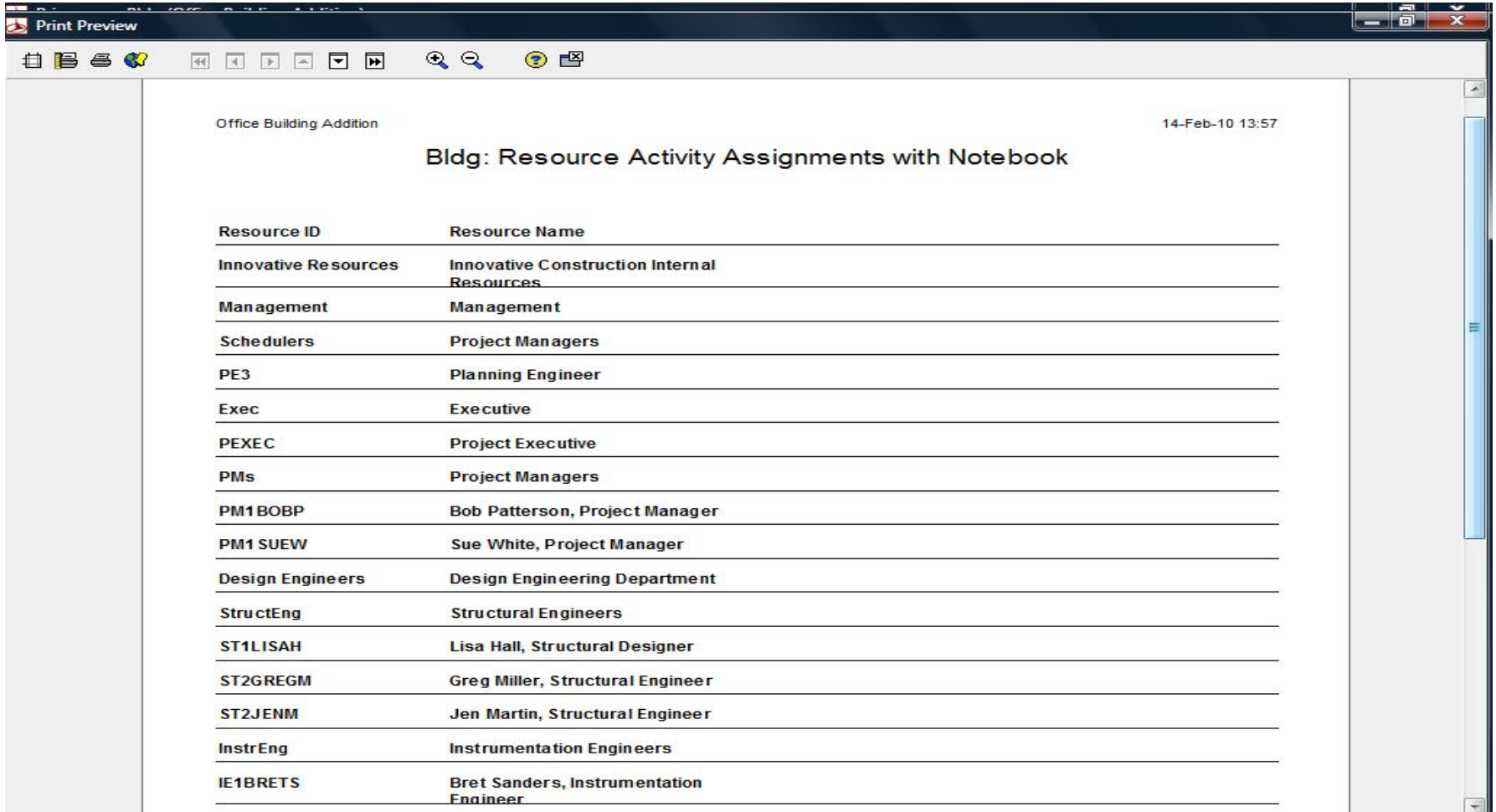
# Generating the Report

- Exercise
  - Steps
    - Click the Run Report button
    - Verify that Print Preview is selected
    - Click Ok



# Print Preview

- You can preview the report before printing. To print, click the Print icon



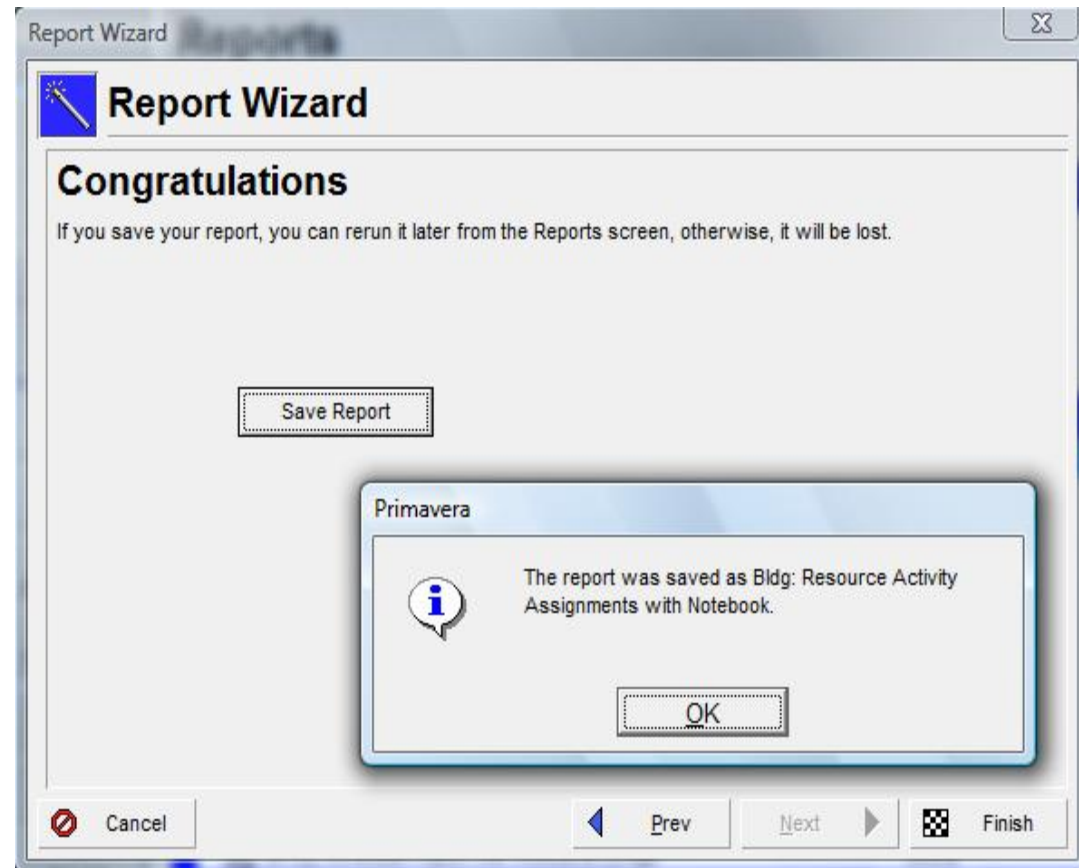
Office Building Addition 14-Feb-10 13:57

### Bldg: Resource Activity Assignments with Notebook

Resource ID	Resource Name
Innovative Resources	Innovative Construction Internal Resources
Management	Management
Schedulers	Project Managers
PE3	Planning Engineer
Exec	Executive
PEXEC	Project Executive
PMS	Project Managers
PM1BOBP	Bob Patterson, Project Manager
PM1SUEW	Sue White, Project Manager
Design Engineers	Design Engineering Department
StructEng	Structural Engineers
ST1LISAH	Lisa Hall, Structural Designer
ST2GREGM	Greg Miller, Structural Engineer
ST2JENM	Jen Martin, Structural Engineer
InstrEng	Instrumentation Engineers
IE1BRETS	Bret Sanders, Instrumentation Engineer

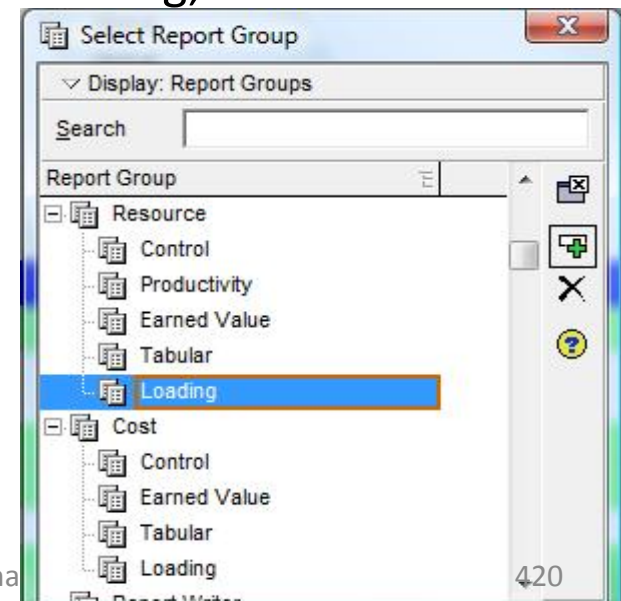
# Saving a Report

- After reviewing your report, you can save it and assign it to specific report group
- Exercise
  - Steps
    - Click Next
    - Click Save Report
    - When prompted  
Click Ok
    - Click Finish



# Assigning a Report to a Report Group

- To easily locate a report, you can assign it a report group.
- Exercise
  - Steps
    - Select the new report, Bldg: Resource Activity Assignment with Notebook
    - In the Report Group field, click Browse button
    - Select a report group (bottom), Resource-Loading, and then click Assign button
    - Press F5 to refresh the data
    - In the Report Scope drop-down list in the Report Details, click Current Project

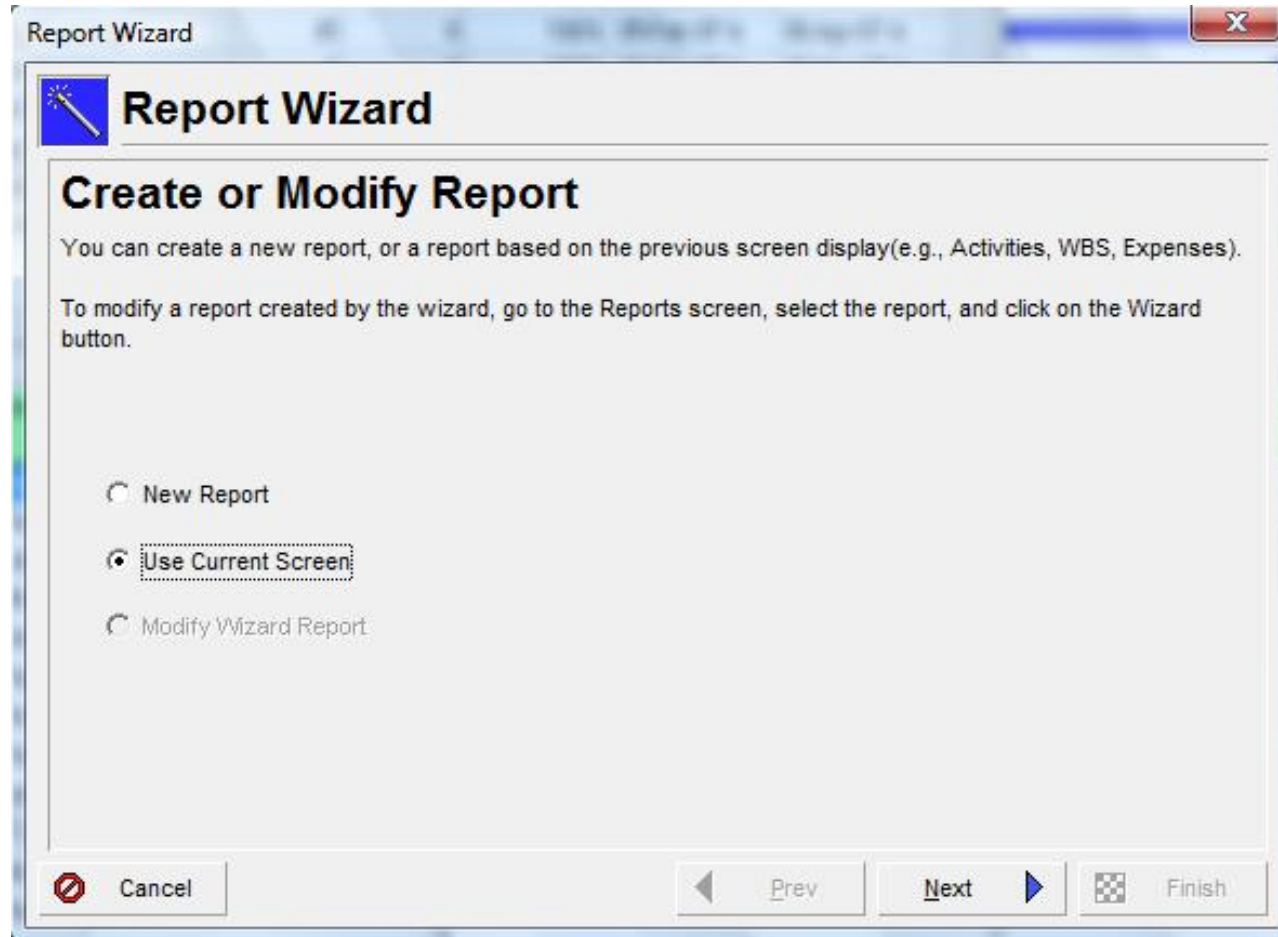


# Creating a Report Using *Current Layout*



- The Report Wizard can also be used to create reports based on the layout that is currently displayed. Reports can be modified as they are built through the wizard
- Exercise
  - Steps
    - In the Directory bar, click Activities
    - In the Layout Option bar, click Layout, Open
    - Select a Layout, Resources-Budgeted Total Units, click Open
    - In the Tools menu, click Report Wizard
    - In the Create or Modify Window, select use Current Screen
    - Click Next

# Creating a Report Using *Current Layout*



# Creating a Report Using *Current Layout*



- Exercise

- Steps

- On the Report Title Screen, type a title
    - Click Next
    - Click Run Report
    - Verify Print Preview is selected
    - Click Ok
    - Click Close
    - Click Next
    - Click Save
    - Click Ok
    - Click Finish

- *This will show you the report with the Columns which are displayed on the Current ACTIVITY LAYOUT*

# Creating a Report Using *Current Layout*



Print Preview

City Center Office Building Addition 20-Feb-16 09:19 PM

### Activities

Activity ID	Original Duration	Remaining Duration	Schedule % Complete	Start	Finish	Total Float	Budgeted Total Cost
<b>EC00515-1 City Center Office Building Addition</b>	694d 3.52h	567d 3.52h	16.67%	01-Nov-10 08:00 AM A	23-Jul-13 11:31 AM	0d	Rs. 119,688,966.40
<b>EC00515-1.D&amp; Design and Engineering</b>	132d	5d	100%	01-Nov-10 08:00 AM A	06-May-11 05:00 PM	562d 3.52h	Rs. 8,216,928.00
<b>EC00515-1.Fo Foundation</b>	149d 4.40h	101d 4.40h	22.02%	23-Feb-11 08:00 AM A	23-Sep-11 01:24 PM	465d 7.12h	Rs. 25,179,132.80
<b>EC00515-1.Sti Structure</b>	153d 5.80h	153d 5.80h	0%	23-Sep-11 01:24 PM	01-May-12 10:12 AM	312d 1.32h	Rs. 20,982,336.00
<b>EC00515-1.Me</b>	575d 1.03h	562d 5.12h	2.63%	14-Apr-11 01:05 PM A	16-Jul-13 02:07 PM	0d	Rs. 33,586,404.80
<b>Mechanical/E</b>							
<b>EC00515-1. Elevator</b>	223d 2.92h	223d 2.92h	0%	13-Apr-12 10:12 AM	28-Feb-13 02:07 PM	91d 1.60h	Rs. 830,592.00
<b>EC00515-1. HVAC</b>	575d 1.03h	562d 5.12h	3.85%	14-Apr-11 01:05 PM A	16-Jul-13 02:07 PM	0d	Rs. 24,211,756.80
<b>EC00515-1. Plumbing</b>	262d 7.72h	262d 7.72h	0%	31-Jan-12 10:12 AM	11-Feb-13 09:55 AM	6d 1.60h	Rs. 8,544,066.00
<b>EC00515-1.Ex Exterior</b>	343d 2.40h	296d 2.40h	43.02%	17-Feb-11 08:00 AM A	28-Jun-12 10:24 AM	271d 1.12h	Rs. 6,928,851.20
<b>EC00515-1. Brick</b>	319d 1.40h	272d 1.40h	59.15%	17-Feb-11 08:00 AM A	24-May-12 09:24 AM	126d 0.12h	Rs. 4,667,136.00
<b>EC00515-1. Roof</b>	24d 1.00h	24d 1.00h	0%	24-May-12 09:24 AM	28-Jun-12 10:24 AM	126d 0.12h	Rs. 1,466,720.00
<b>EC00515-1.</b>	7d 3.40h	7d 3.40h	0%	08-May-12	17-May-12	154d 4.92h	Rs. 794,995.20

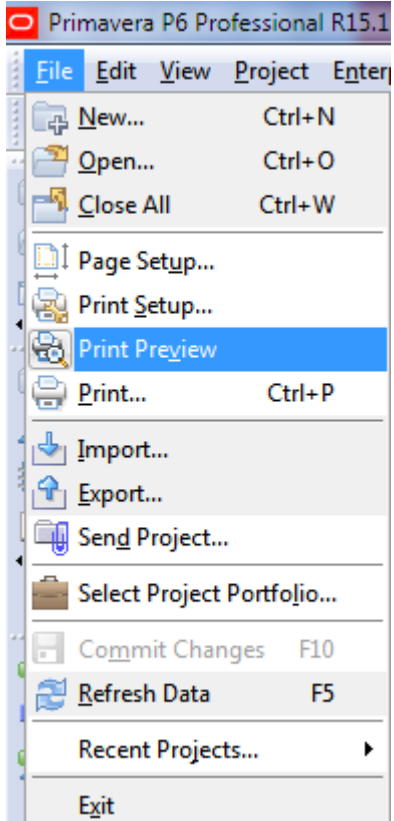
© Oracle Corporation Page 1 of 2



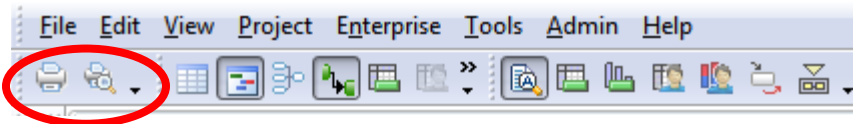
# Creating a Report Using *Activity Layout*

- You can prepare Report of *Activity Columns & Gantt Chart* using Activities Window by customizing Activity Layouts.

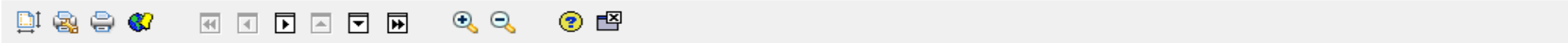
- There are two options to this Report:
  - Using File Menu → *Print Preview* or *Print*



- Using Tool Bar → *Print Preview* or *Print* (button)



# Creating a Report Using Activity Layout

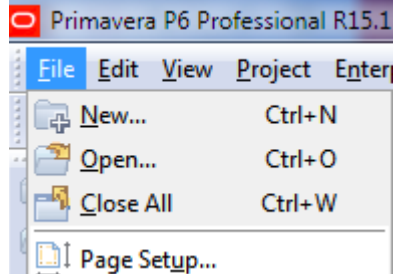


City Center Office Building Addition		Classic Schedule Layout - MSPM-3B					20-Feb-16 12:57 PM			
Activity ID	Activity Name	Original Duration	Remaining Duration	Schedule % Complete	Start	Finish	Total Float	Budgeted Total Cost	Q	Nov
<b>EC00515-1</b>	<b>City Center Office Building Ad</b>	694d 3.52h	667d 3.52h	16.67%	01-Nov-10	23-Jul-13	0d	Rs. 119,688,986.40		
<b>EC00515-1.D&amp;E</b>	<b>Design and Engineering</b>	132d	5d	100%	01-Nov-10	06-May-11	562d	Rs. 8,216,928.00		
EC1000	Design Building Addition	55d 1.80h	0d	100%	01-Nov-10	19-Jan-11		Rs. 5,458,176.00		
EC1010	Start Of fice Building Addition Project	0d	0d	100%	01-Nov-10			Rs. 0.00		Star
EC1020	New Activity	5d	5d	0%	02-May-11	06-May-11	562d	Rs. 0.00		
EC1030	Review and Approve Designs	21d 4.80h	0d	100%	17-Jan-11	17-Feb-11		Rs. 1,087,904.00		
EC1050	Assemble Technical Data for Heat Pump	7d 1.80h	0d	100%	16-Feb-11	25-Feb-11		Rs. 355,968.00		
EC1110	New Activity	5d	5d	0%	02-May-11	06-May-11	562d	Rs. 0.00		
EC1160	Review Technical Data on Heat Pumps	27d	0d	100%	24-Feb-11	06-Apr-11		Rs. 1,334,880.00		
<b>EC00515-1.Found</b>	<b>Foundation</b>	149d 4.40h	101d 4.40h	22.02%	23-Feb-11	23-Sep-11	465d	Rs. 25,179,132.8		
EC1090	Begin Building Construction	0d	0d	100%	28-Feb-11			Rs. 0.00		
EC1100	Site Preparation	43d 1.80h	0d	100%	23-Feb-11	18-Apr-11		Rs. 2,491,776.00		
EC1230	Excavation	24d 1.00h	24d 1.00h	41.67%	02-May-11	06-Jun-11	126d	Rs. 2,768,640.00		
EC1320	Install Underground Water Lines	12d 1.00h	12d 1.00h	0%	06-Jun-11	22-Jun-11	126d	Rs. 1,087,680.00		
EC1330	Install Underground Electric Conduit	12d 1.00h	12d 1.00h	0%	06-Jun-11	22-Jun-11	126d	Rs. 1,878,720.00		
EC1340	Form/Pour Concrete Footings	24d 1.00h	24d 1.00h	0%	22-Jun-11	27-Jul-11	126d	Rs. 6,410,720.00		
EC1350	Concrete Foundation Walls	24d 1.00h	24d 1.00h	0%	27-Jul-11	30-Aug-11	126d	Rs. 5,421,920.00		
EC1360	Form and Pour Slab	12d 1.00h	12d 1.00h	0%	30-Aug-11	16-Sep-11	126d	Rs. 4,035,952.00		
EC1370	Backfill and Compact Walls	4d 7.40h	4d 7.40h	0%	16-Sep-11	23-Sep-11	126d	Rs. 1,083,724.80		
EC1380	Foundation Phase Complete	0d	0d	0%		23-Sep-11	465d	Rs. 0.00		
<b>EC00515-1.Structure</b>	<b>Structure</b>	153d 5.80h	153d 5.80h	0%	23-Sep-11	01-May-12	312d	Rs. 20,982,336.0		
EC1390	Erect Structural Frame	48d 1.00h	48d 1.00h	0%	23-Sep-11	01-Dec-11	126d	Rs. 4,515,520.00		
EC1410	Begin Structural Phase	0d	0d	0%	01-Dec-11		417d	Rs. 0.00		
EC1420	Floor Decking	33d 4.80h	33d 4.80h	0%	01-Dec-11	20-Jan-12	126d	Rs. 4,683,616.00		
EC1430	Concrete First Floor	36d	36d	0%	20-Jan-12	12-Mar-12	126d	Rs. 3,119,664.00		
EC1460	Erect Stairwell and Elevator Walls	24d	24d	0%	12-Mar-12	13-Apr-12	138d	Rs. 692,160.00		
EC1470	Concrete Basement Slab	24d	24d	0%	12-Mar-12	13-Apr-12	138d	Rs. 4,851,712.00		
EC1480	Concrete Second Floor	36d	36d	0%	12-Mar-12	01-May-12	126d	Rs. 3,119,664.00		
EC1540	Structure Complete	0d	0d	0%		01-May-12	126d	Rs. 0.00		
<b>EC00515-1.Mechanicals</b>	<b>Mechanical/Electrical</b>	575d 1.03h	562d 5.12h	2.83%	14-Apr-11	16-Jul-13	0d	Rs. 33,586,404.8		
EC1490	Rough-In Phase Begins	0d	0d	0%	21-Mar-12		233d	Rs. 0.00		
EC1690	Rough In Complete	0d	0d	0%		21-Feb-13	0d	Rs. 0.00		

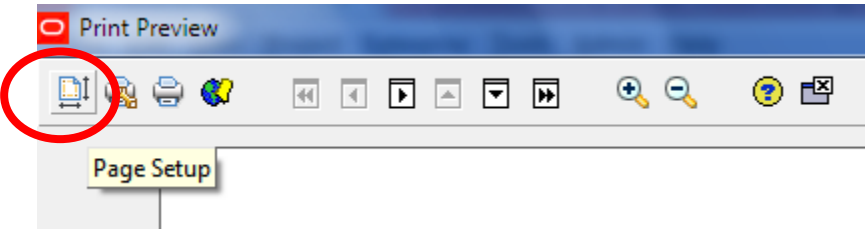
# Creating a Report Using *Activity Layout*

- You can take Customize the Print Preview using: *Page Setup* Option

- File Menu → Page Setup
- OR

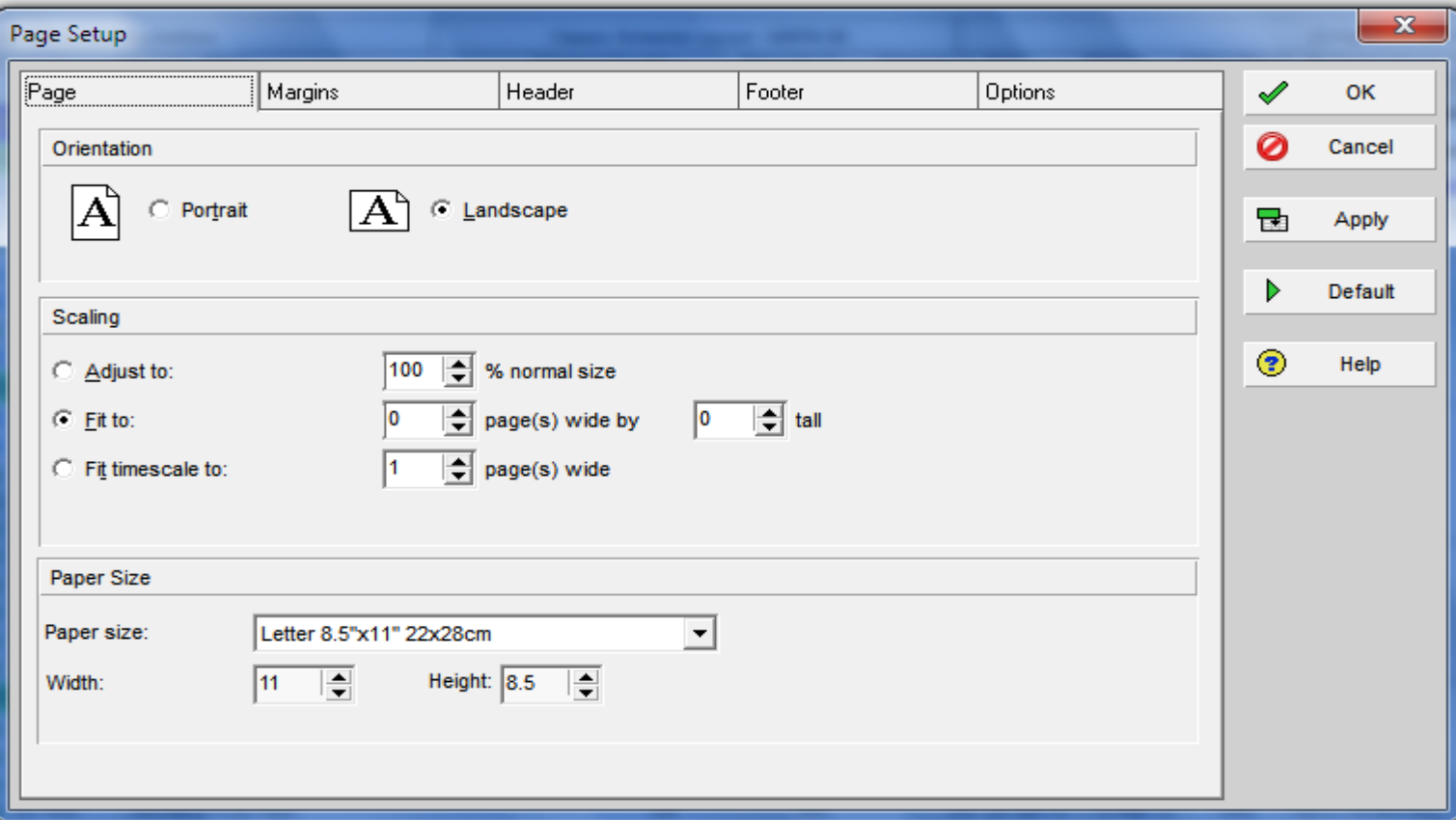


- Print Preview → Page Setup (button)



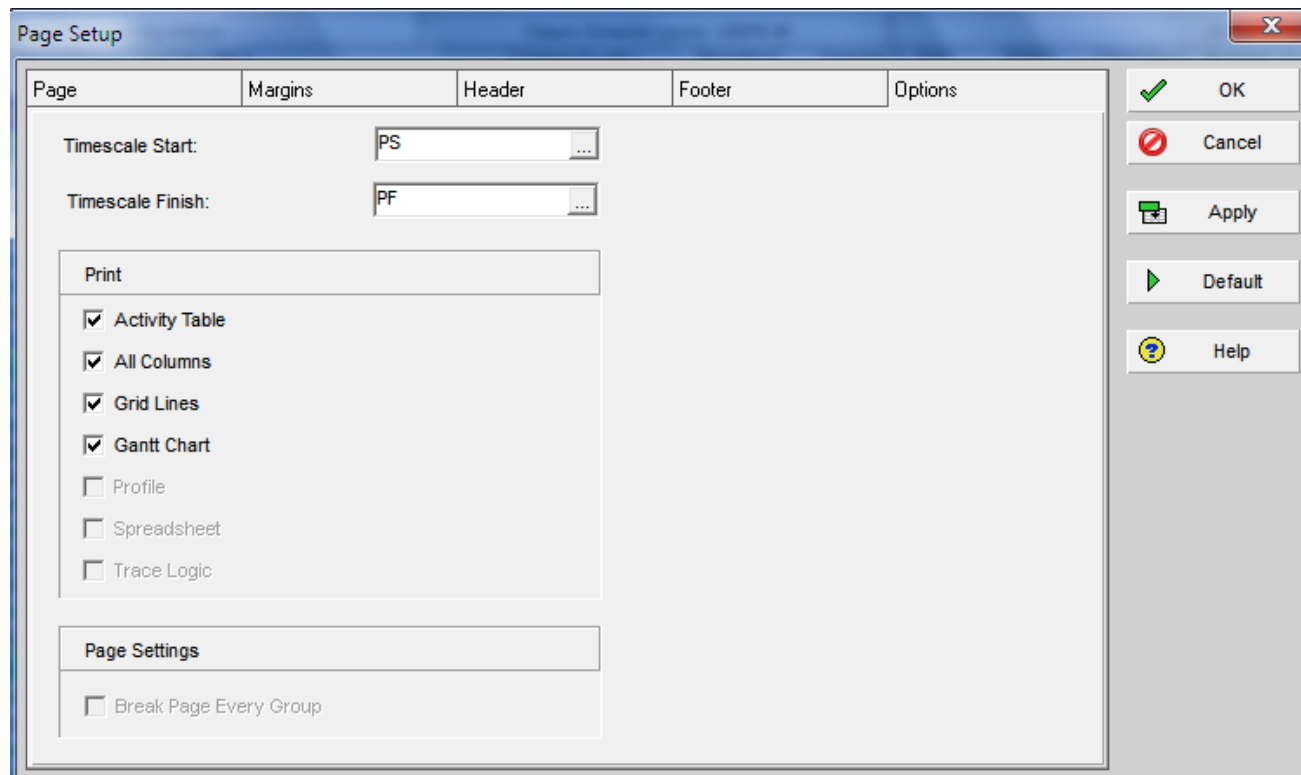
# Creating a Report Using *Activity Layout*

- Page Setup → *Page (Tab)*
  - Page Orientation, Page Fit, Timescale Fit, Paper Size



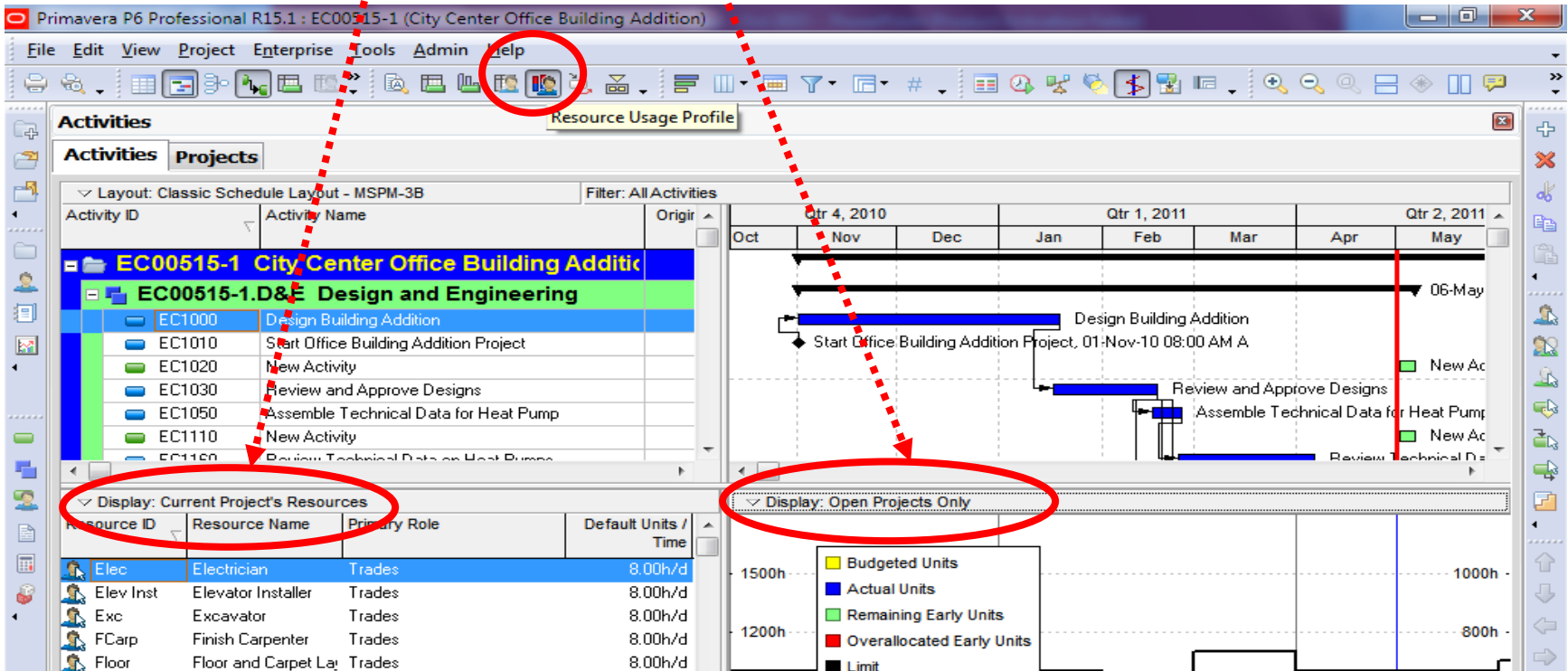
# Creating a Report Using *Activity Layout*

- Page Setup → *Options (Tab)*
  - Timescale START & FINISH
  - Print (*Top Layout View* or *Profile View* or Both)
  - Profile View is only for *Activity Usage Profile & Resource Usage Profile*



# Resource Usage Profile Settings

- Use *Resource Usage Profile*
- Display: *Current Project's Resources*
- Display: *Open Projects Only*



Primavera P6 Professional R15.1 : EC00515-1 (City Center Office Building Addition)

File Edit View Project Enterprise Tools Admin Help

Activities Projects

Layout: Classic Schedule Layout - MSPM-3B Filter: All Activities

Activity ID	Activity Name	Origin
EC00515-1	City Center Office Building Addition	
EC00515-1.D&E	Design and Engineering	
EC1000	Design Building Addition	
EC1010	Start Office Building Addition Project	
EC1020	New Activity	
EC1030	Review and Approve Designs	
EC1050	Assemble Technical Data for Heat Pump	
EC1110	New Activity	
EC1150	Review Technical Data on Heat Pump	

Display: Current Project's Resources

Resource ID	Resource Name	Primary Role	Default Units / Time
Elec	Electrician	Trades	8.00h/d
Elev Inst	Elevator Installer	Trades	8.00h/d
Exc	Excavator	Trades	8.00h/d
FCarp	Finish Carpenter	Trades	8.00h/d
Floor	Floor and Carpet Lay	Trades	8.00h/d

Display: Open Projects Only

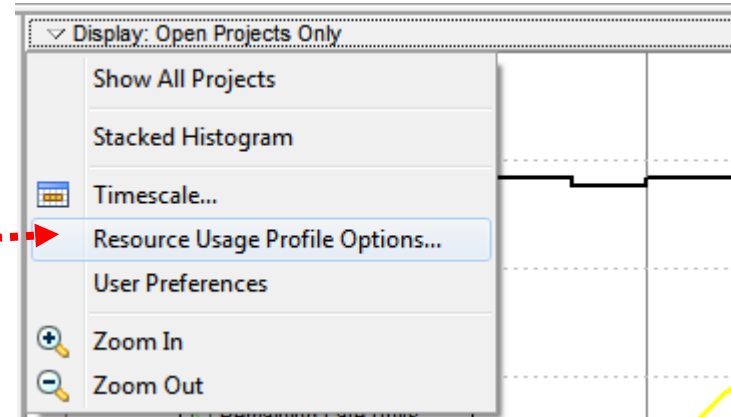
Legend:

- Budgeted Units
- Actual Units
- Remaining Early Units
- Overallocated Early Units
- Limit

# Resource Usage Profile Options

- Use *Display Option bar on Right-Pane*

- Click

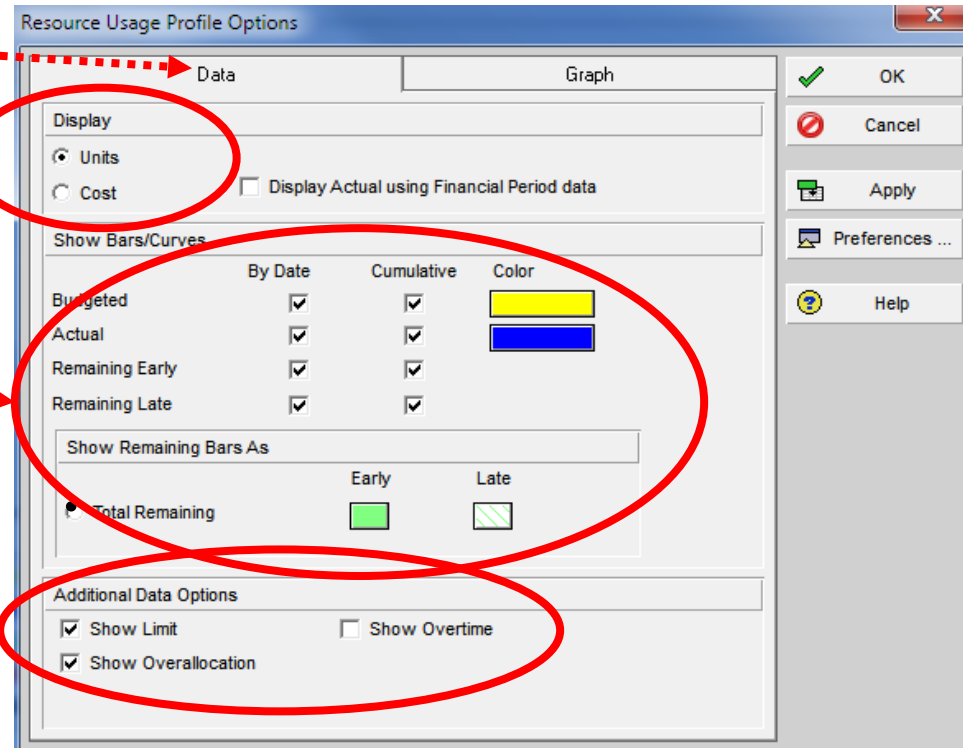


- Use *Data (Tab)*

- Use *Units or Cost*

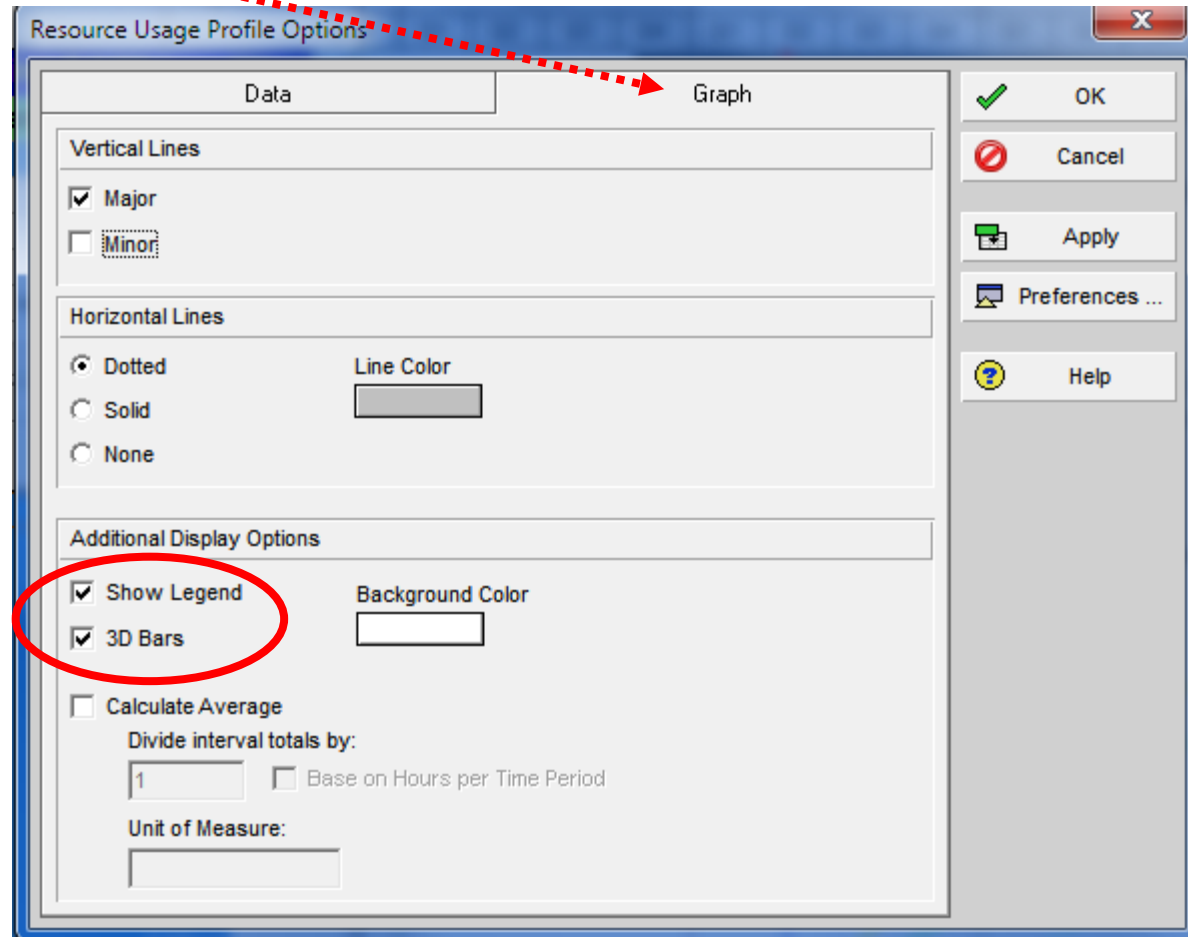
- *Show Bars/Curves*

- Use *Additional Data Options*



# Resource Usage Profile Options

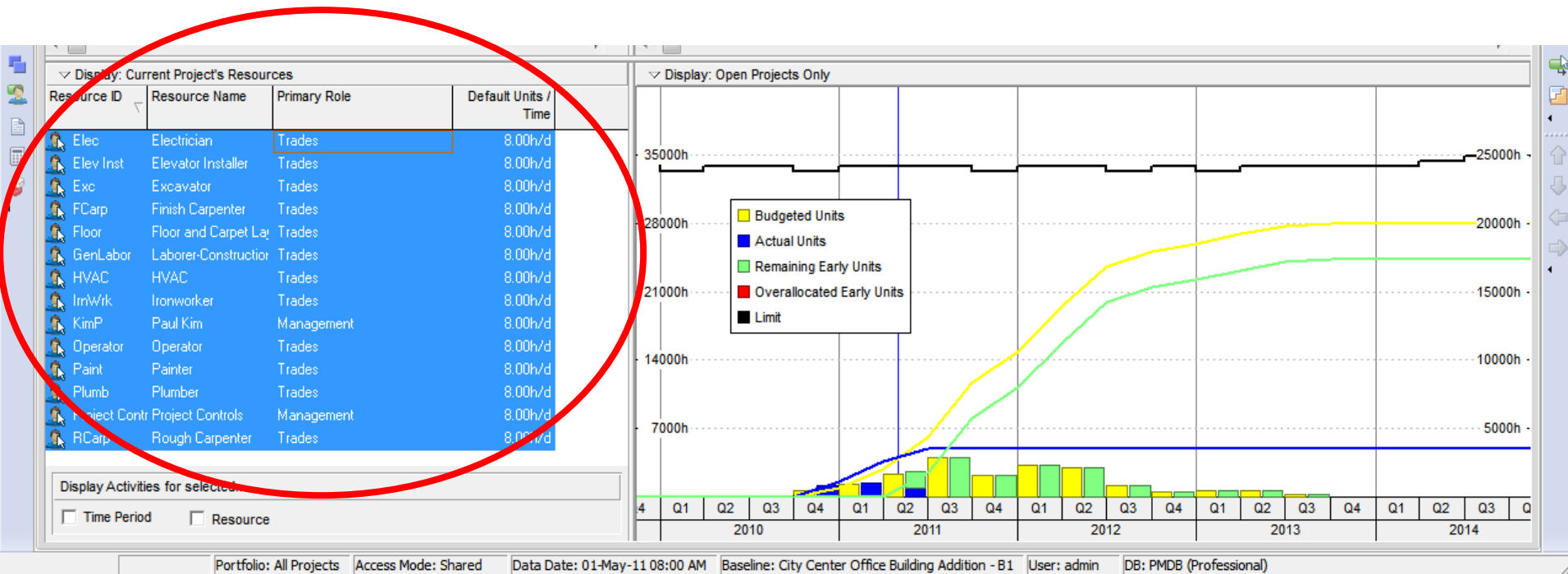
- Use *Graph (Tab)* to display Legend and 3D Bars





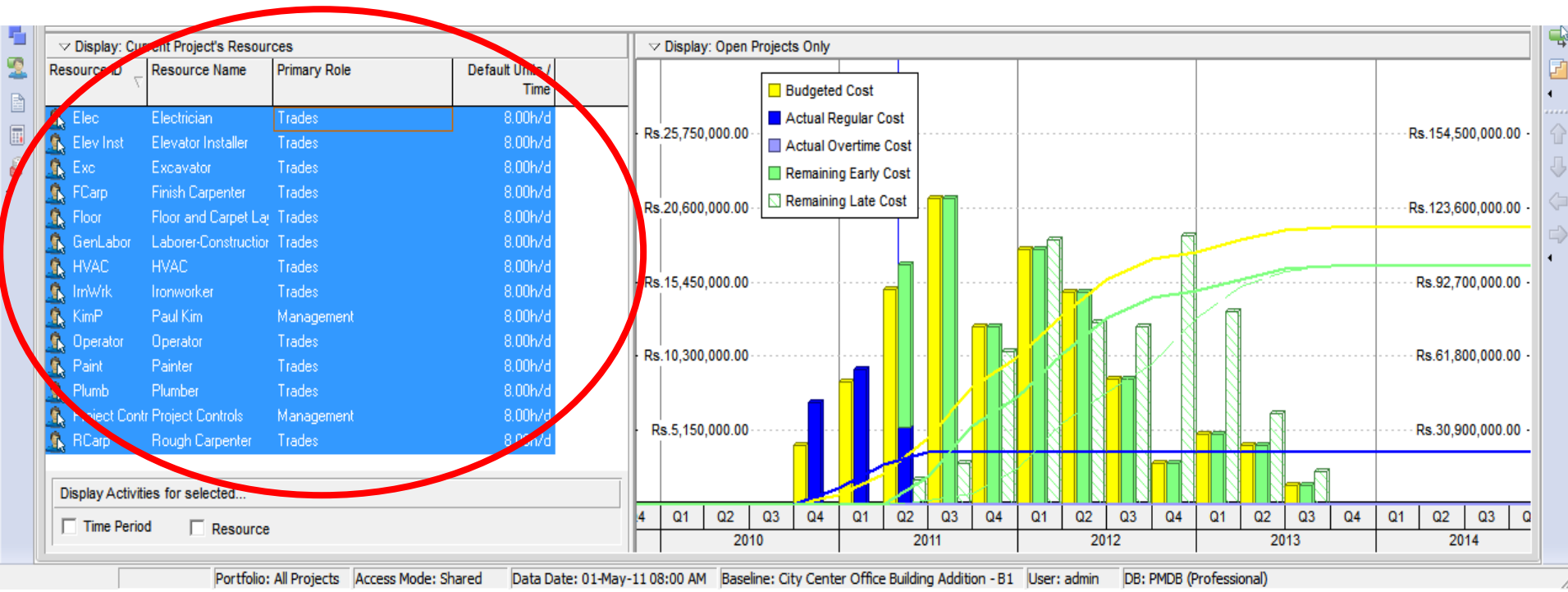
# Resources' Units Profiling

- Select all "Current Project's Resources" on Left-Pane



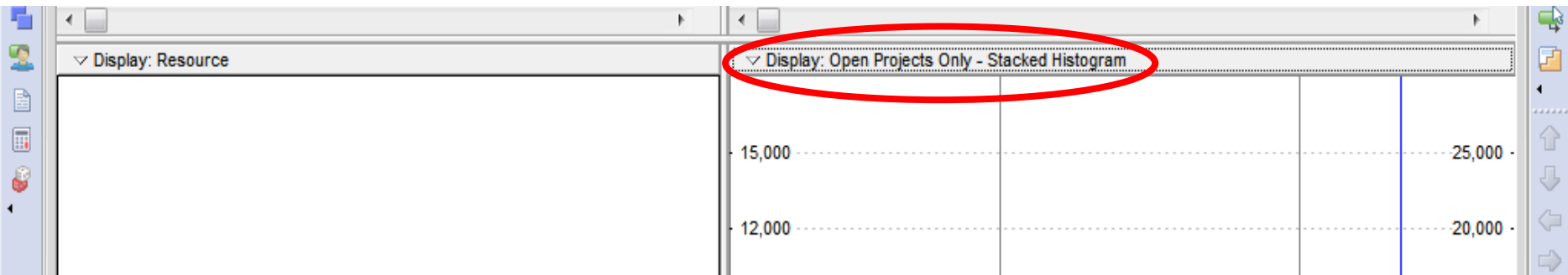
# Resources' Cost Profiling

- Select all “Current Project’s Resources” on Left-Pane

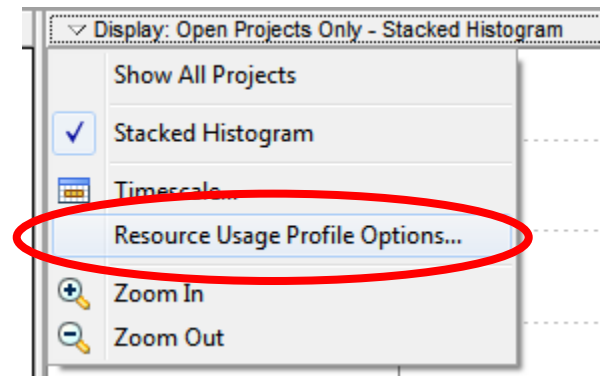


# S-Curve with Resource Loading

- Display: *Open Projects Only – Staked Histogram*

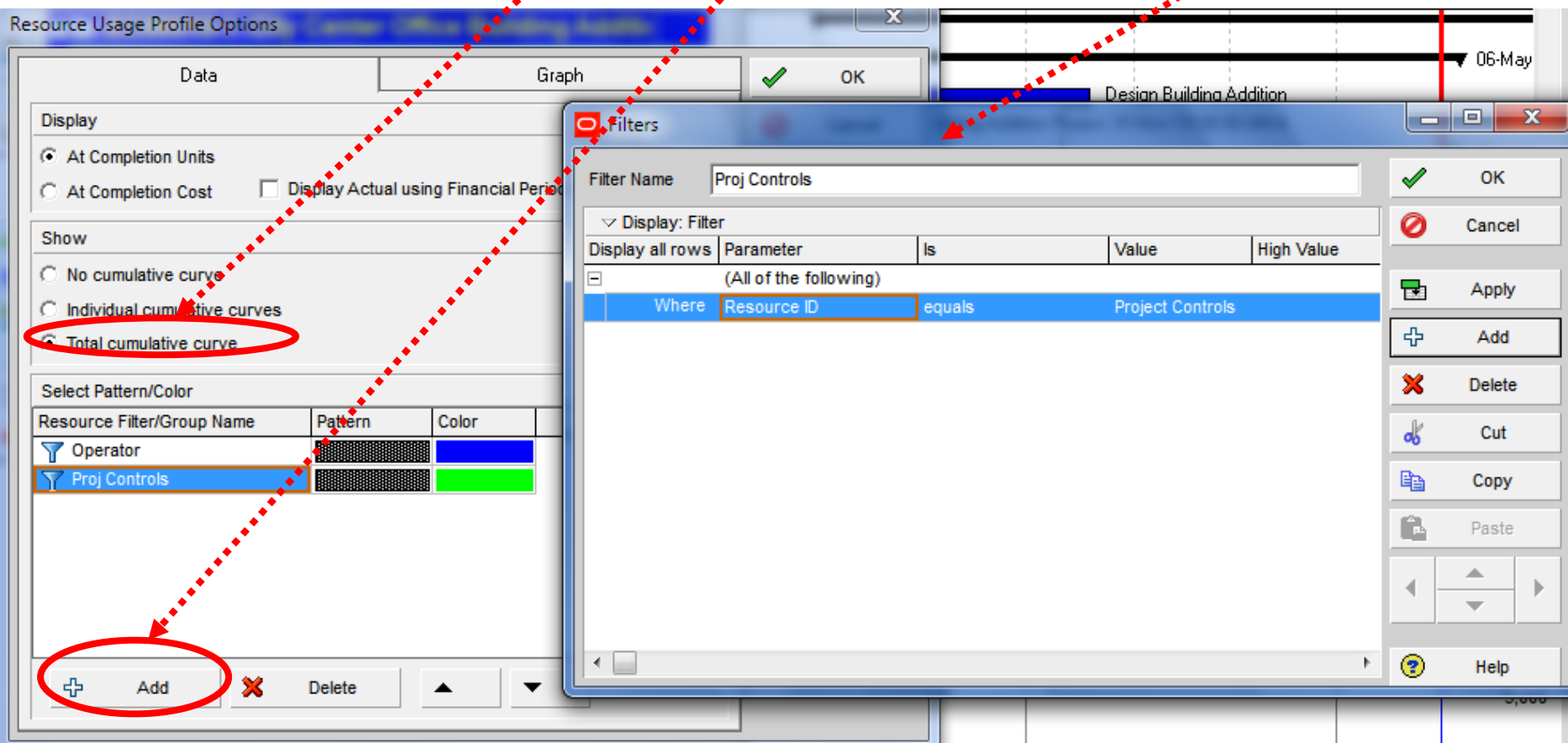


- Now, Select *Resource Usage Profile Options* from Display Options



# S-Curve with Resource Loading

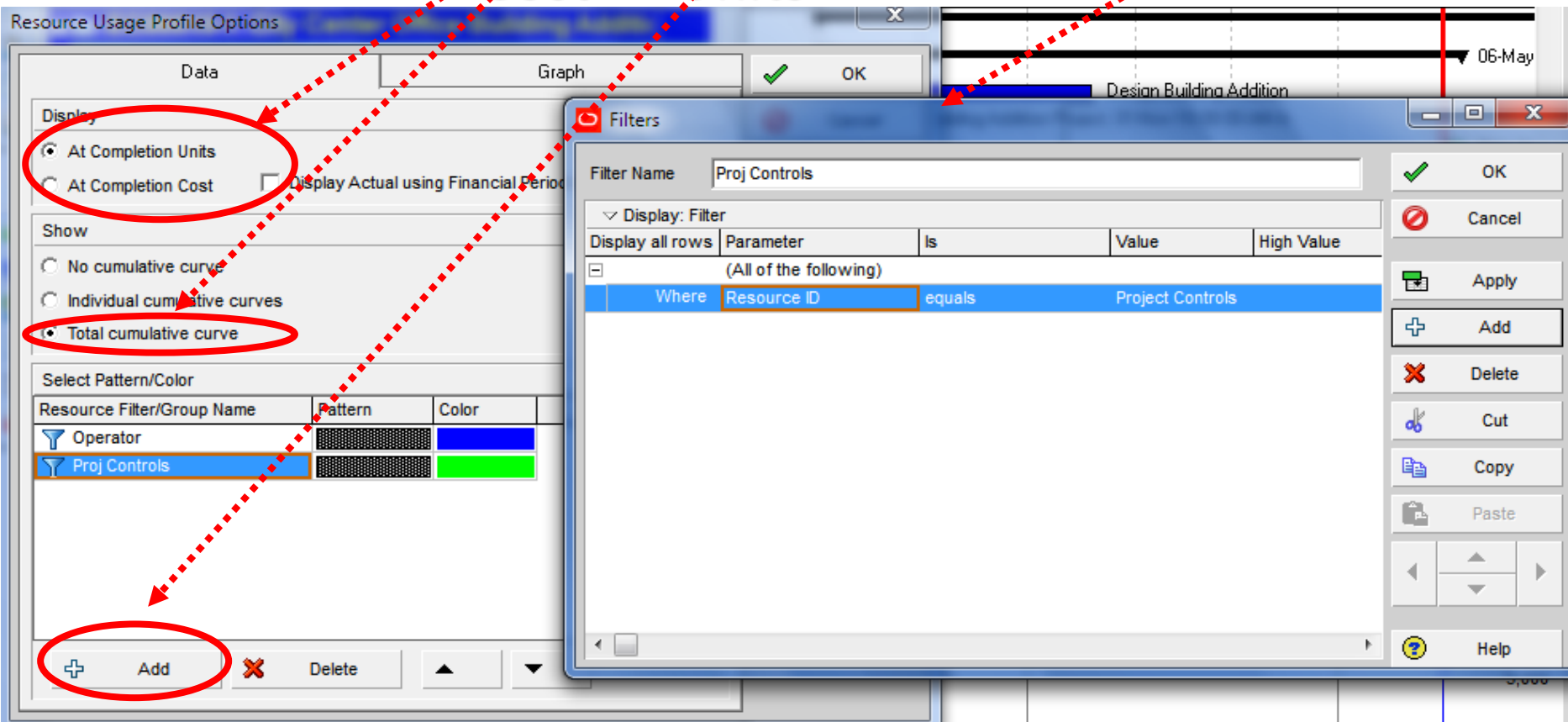
- Now, Add Resources using *Add* (button) using *Filters*
- Select *Total Cumulative Curve* (for S-Curve)



The screenshot displays the 'Resource Usage Profile Options' dialog box with the 'Graph' tab selected. The 'Display' section has 'At Completion Units' selected. The 'Show' section has 'Total cumulative curve' selected and circled in red. The 'Add' button at the bottom left is also circled in red. A 'Filters' dialog box is overlaid on top, showing a filter named 'Proj Controls' with the condition 'Where Resource ID equals Project Controls'. The 'Proj Controls' filter is highlighted in blue. A red dashed arrow points from the 'Add' button in the main dialog to the 'Filters' dialog, and another red dashed arrow points from the 'Total cumulative curve' option to the 'Filters' dialog.

# S-Curve with Resource Loading

- Now, Add Resources using *Add* (button) using *Filters*
- Select *Total Cumulative Curve* (for S-Curve)
- You can use *Cost* or *Units*



The screenshot displays two overlapping dialog boxes in a software interface. The background window is titled "Resource Usage Profile Options" and has two tabs: "Data" and "Graph". In the "Data" tab, the "Display" section has "At Completion Units" selected, which is circled in red. Below it, the "Show" section has "Total cumulative curve" selected, also circled in red. At the bottom left, the "Add" button (with a plus sign) is circled in red. A red dotted arrow points from the "Add" button to the "Filters" dialog box. The "Filters" dialog box is in the foreground, showing a filter named "Proj Controls". It has a table with the following content:

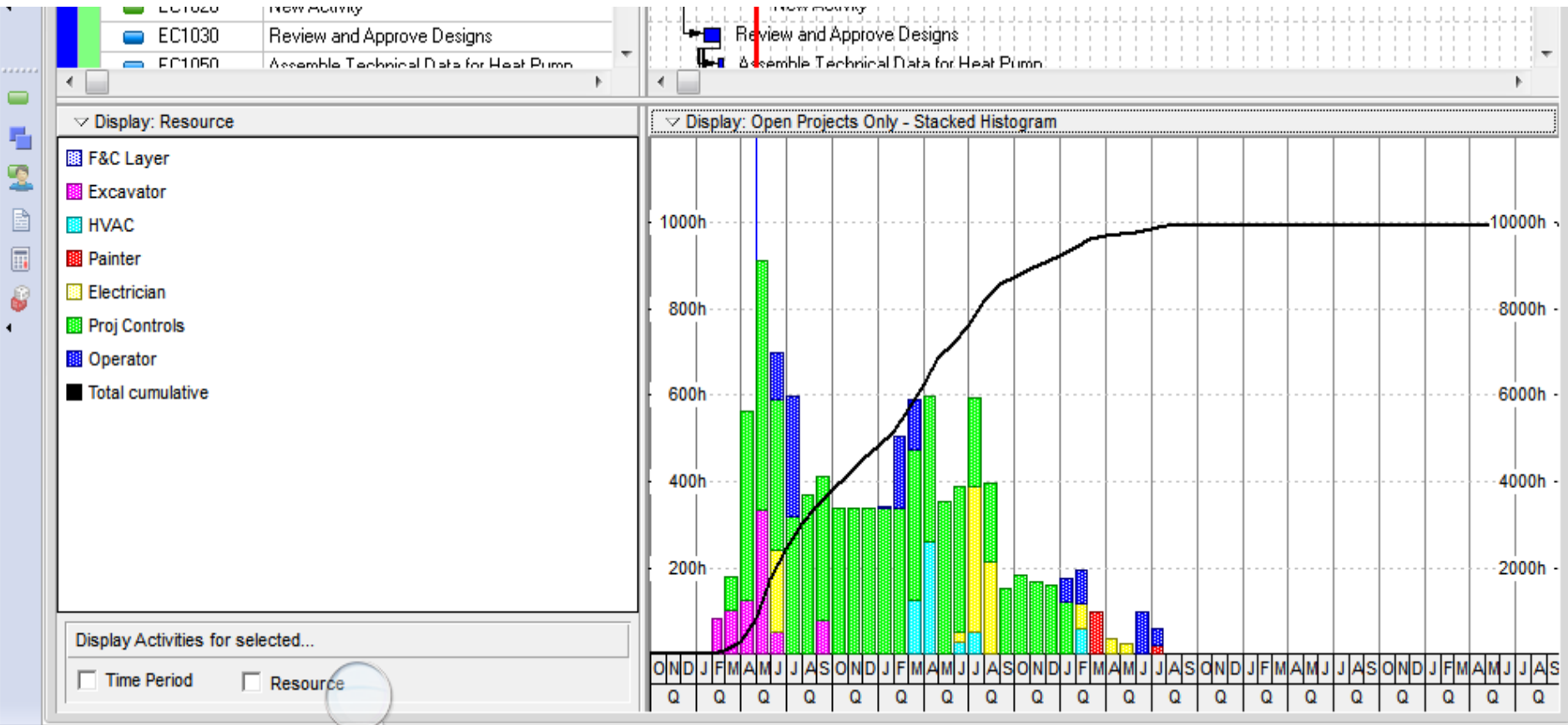
Display all rows	Parameter	Is	Value	High Value
(All of the following)				
Where	Resource ID	equals	Project Controls	

On the right side of the "Filters" dialog, there is a vertical toolbar with buttons for "OK", "Cancel", "Apply", "Add", "Delete", "Cut", "Copy", "Paste", and "Help".

# S-Curve with Resource Loading



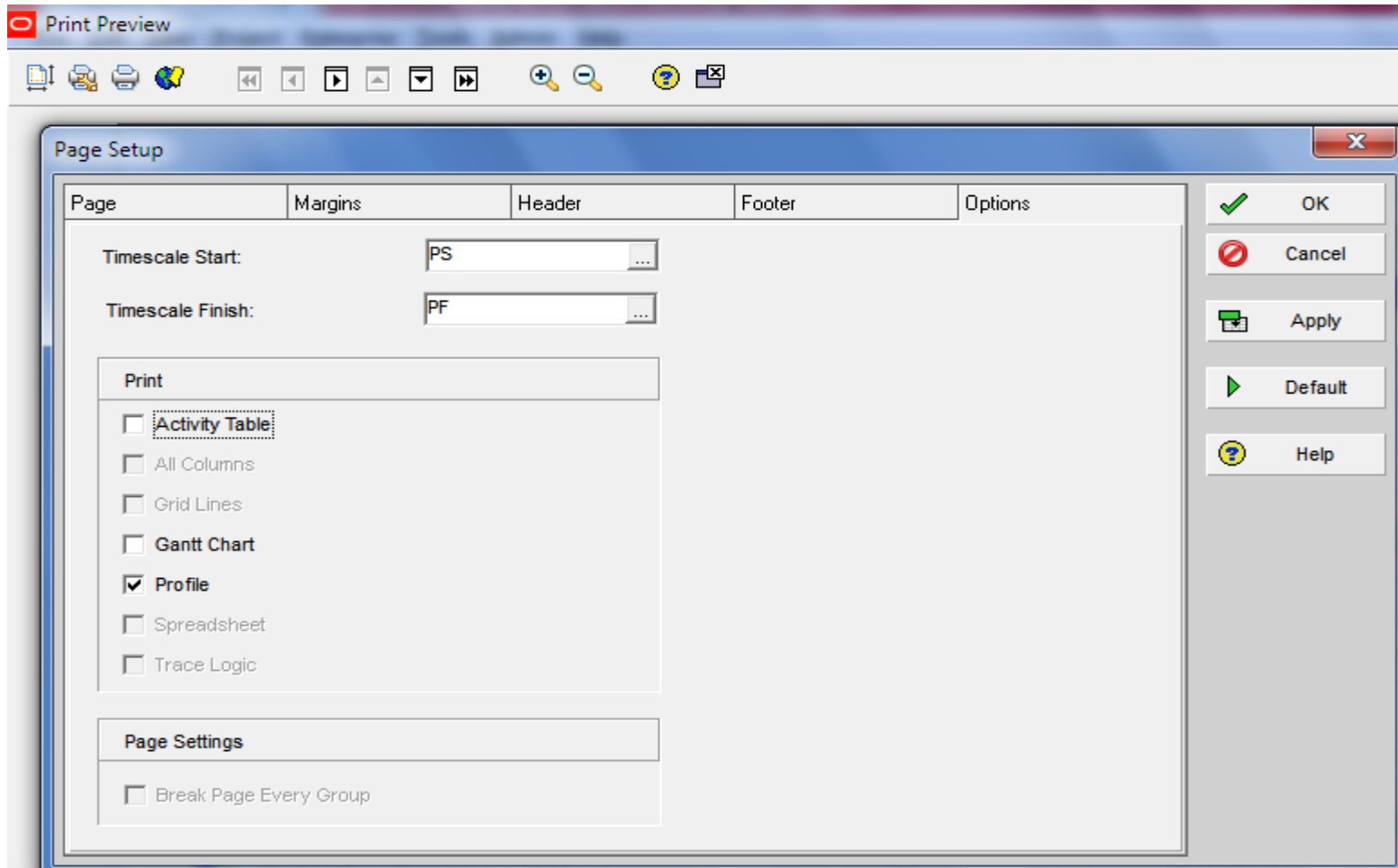
- *See Results*



# S-Curve with Resource Loading

- *Take Print* using:

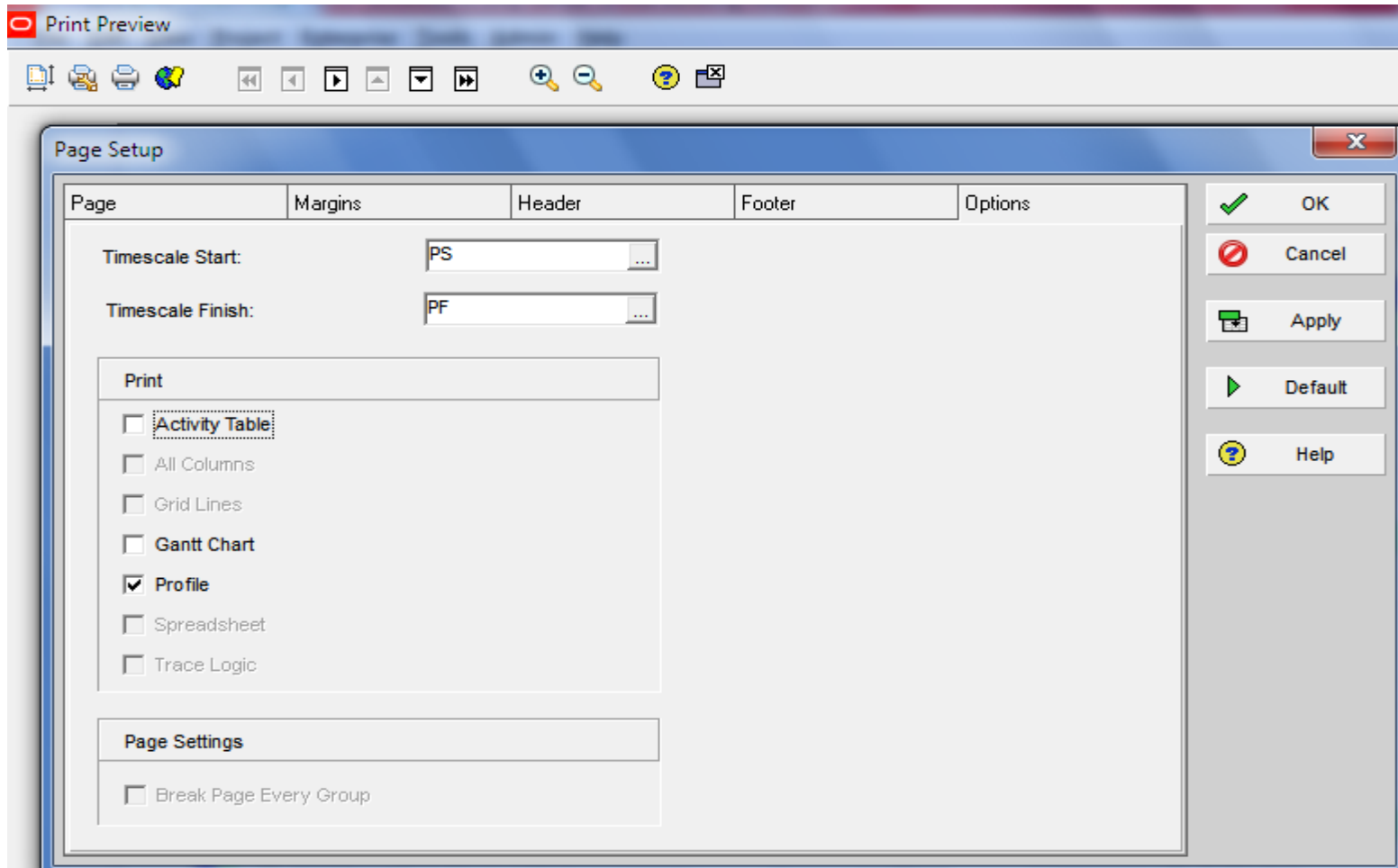
*Print Preview* → *Page Setup* → *Options (Tab)* → *Profile*



# S-Curve with Resource Loading

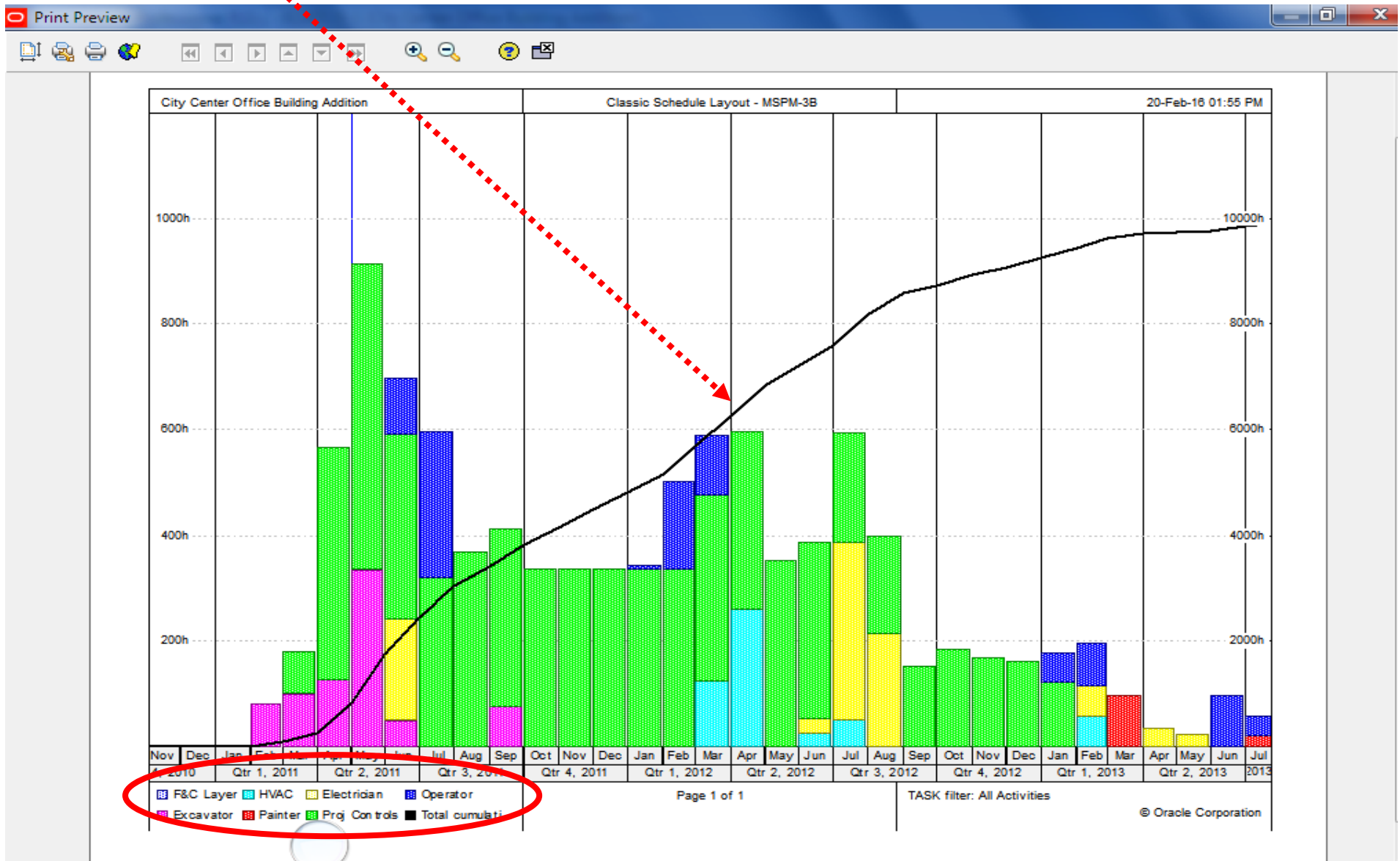
- *Take Print* using:

*Print Preview* → *Page Setup* → *Options (Tab)* → *Profile*





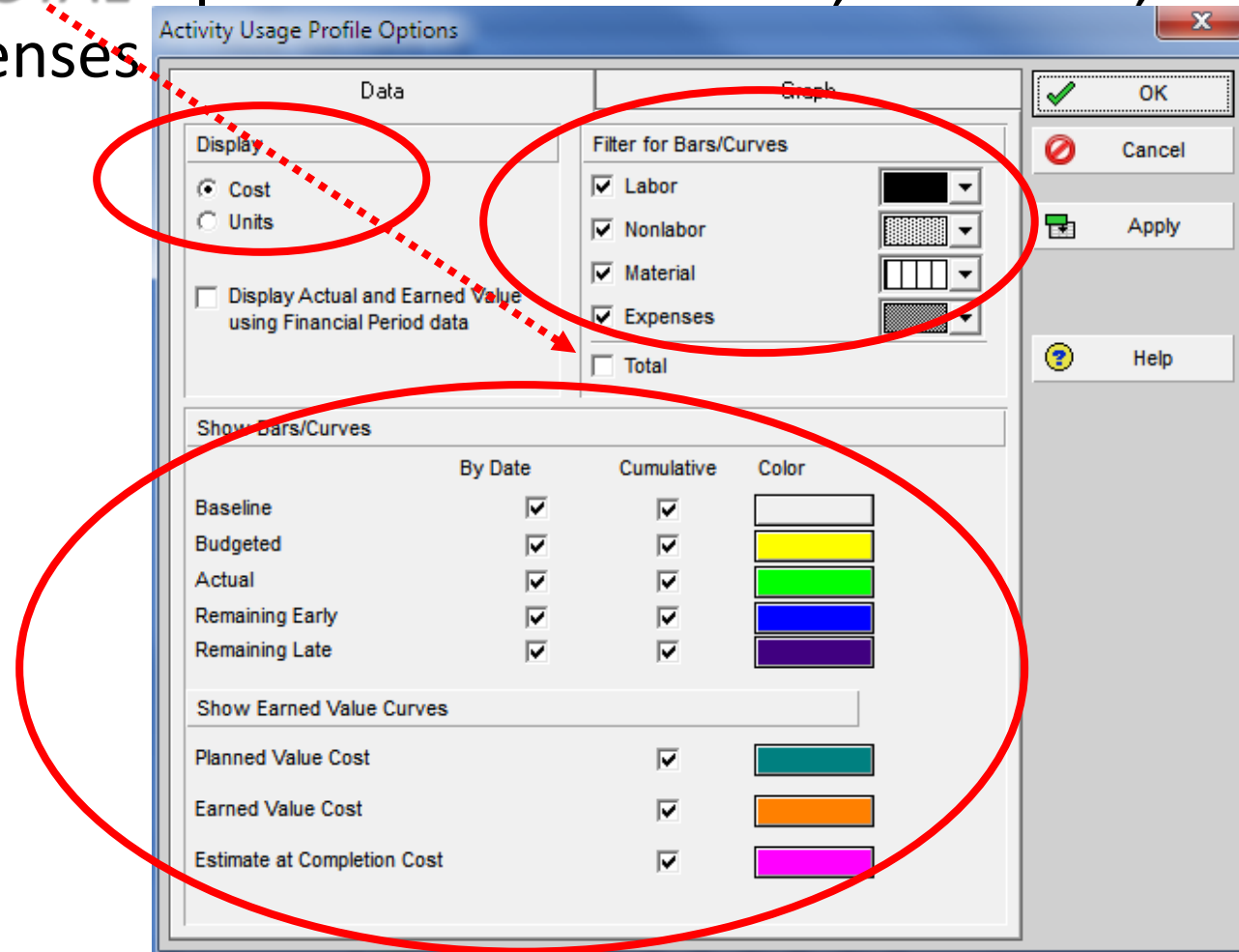
# S-Curve with Resource Loading



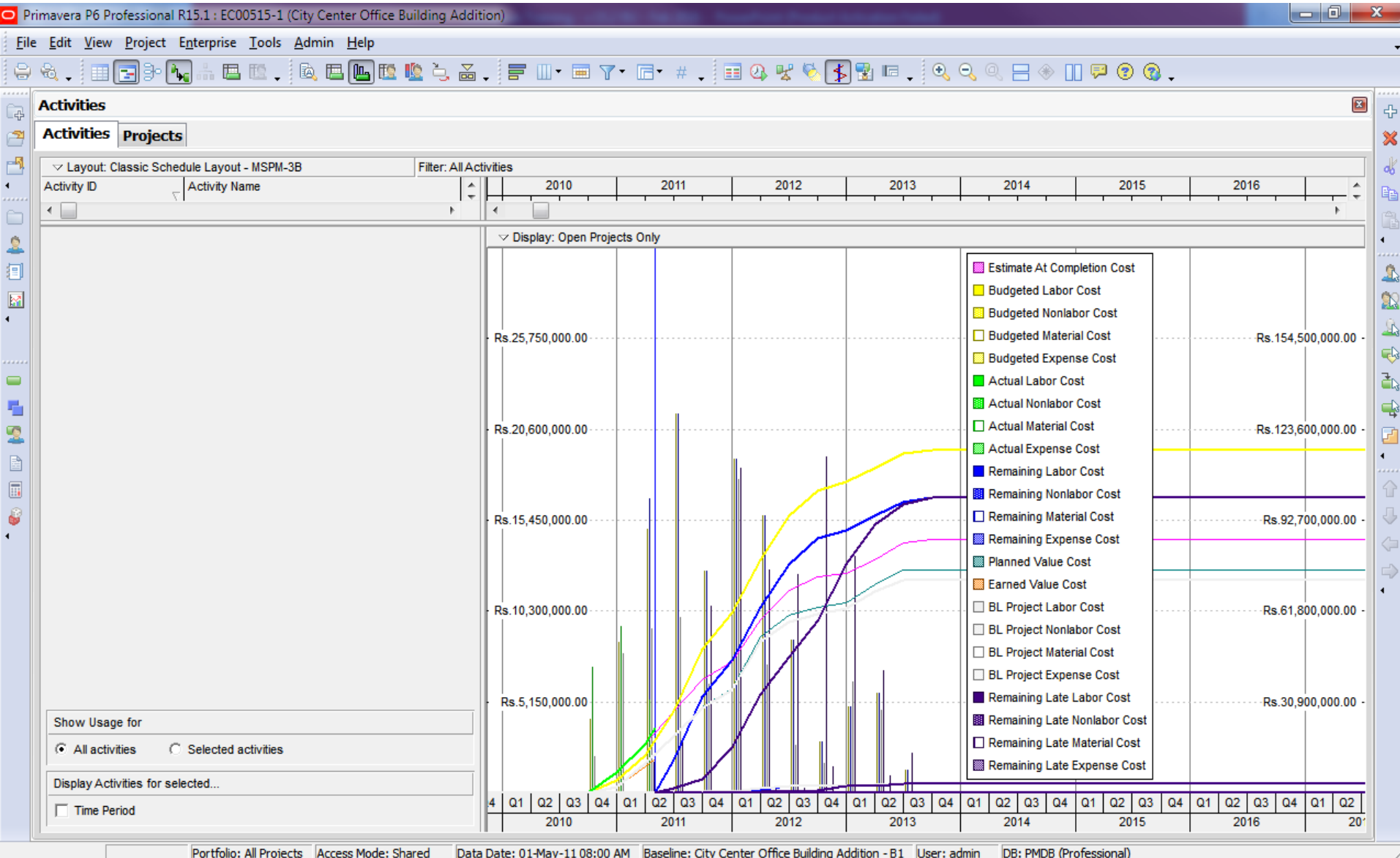


# S-Curve with Earned Value Costs

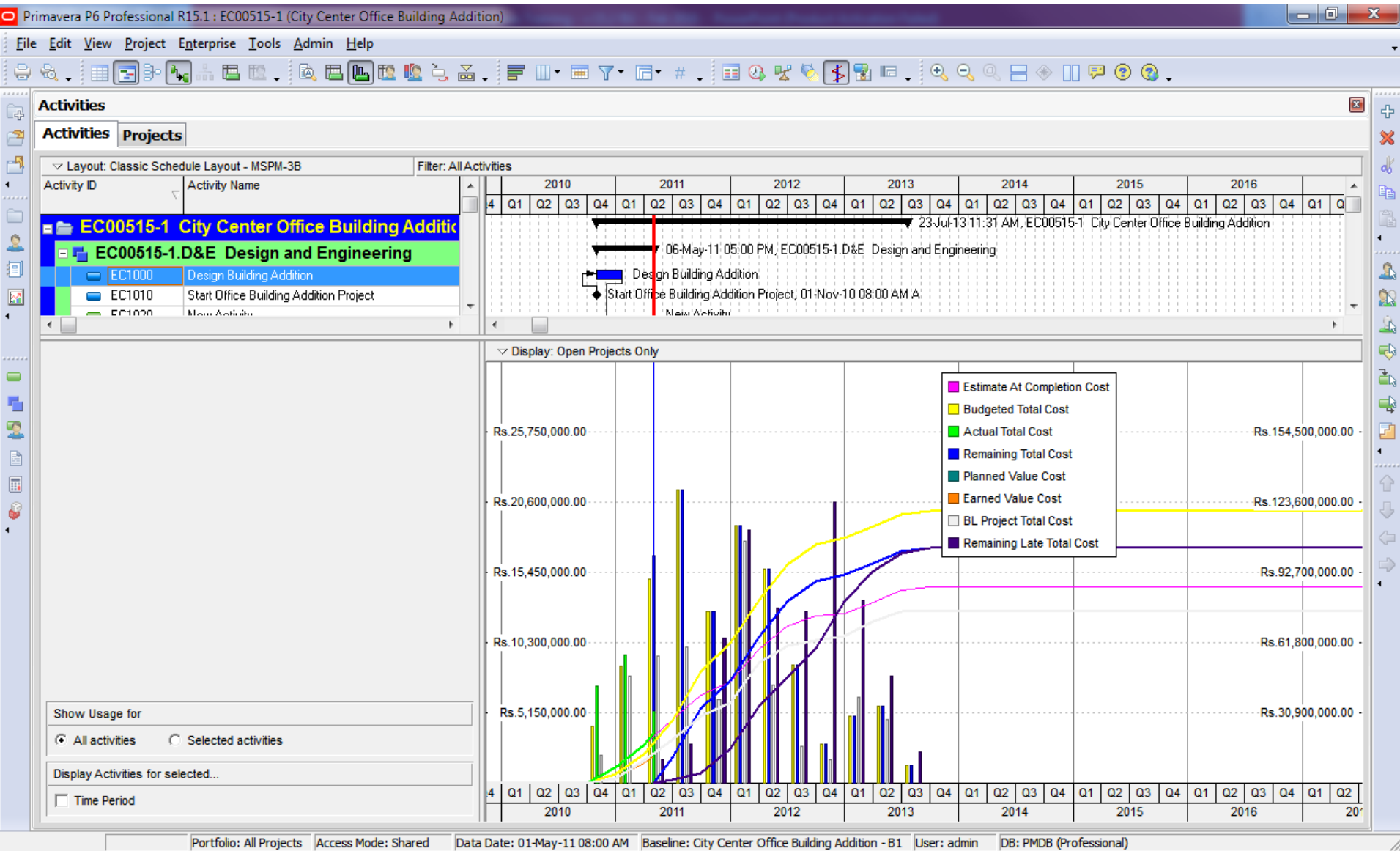
- Use *Highlighted Options*
- You can use **TOTAL** Option instead of Labor, Nonlabor, Material, Expenses



# S-Curve with Earned Value Costs

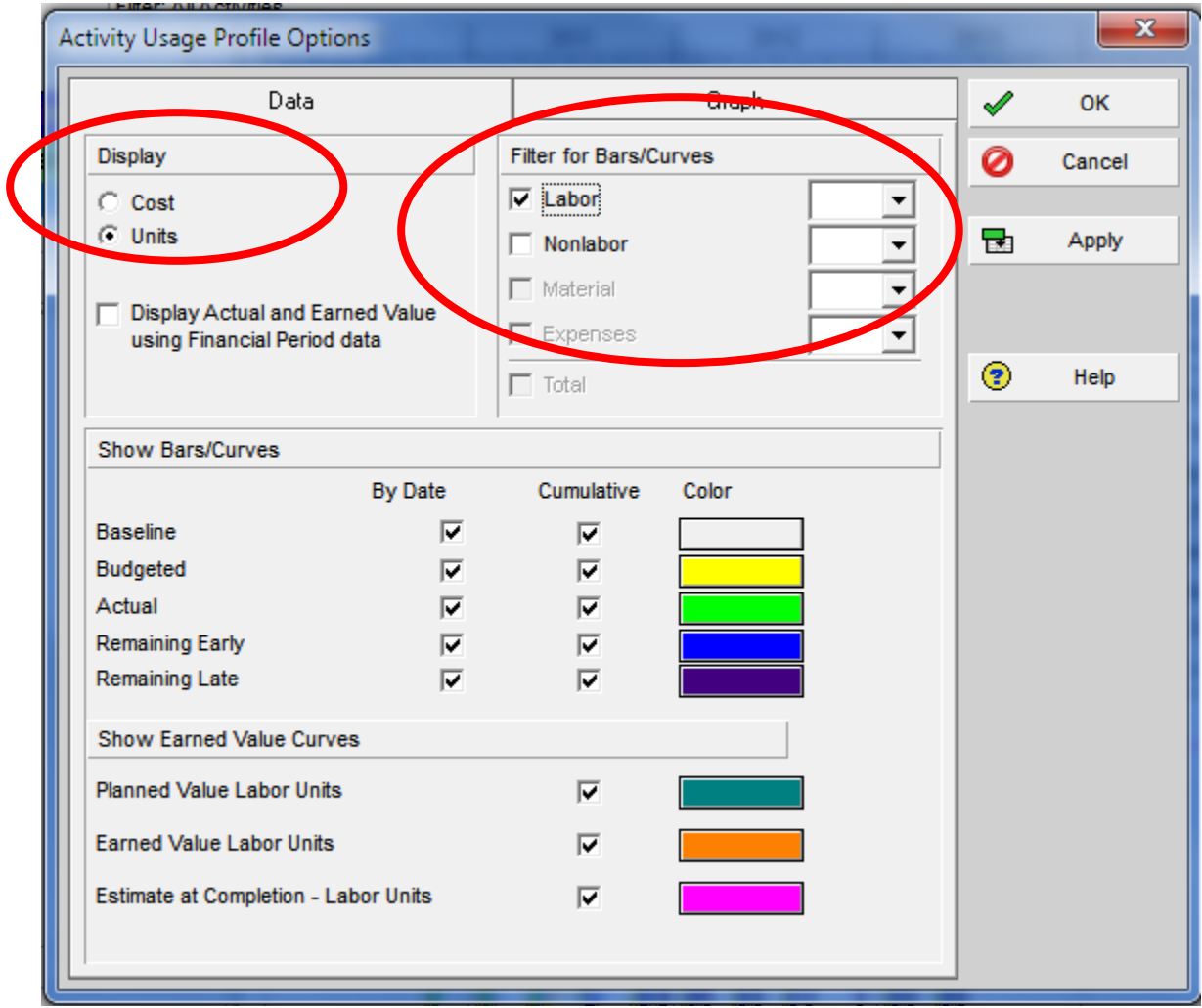


# S-Curve with Earned Value *Total Cost*

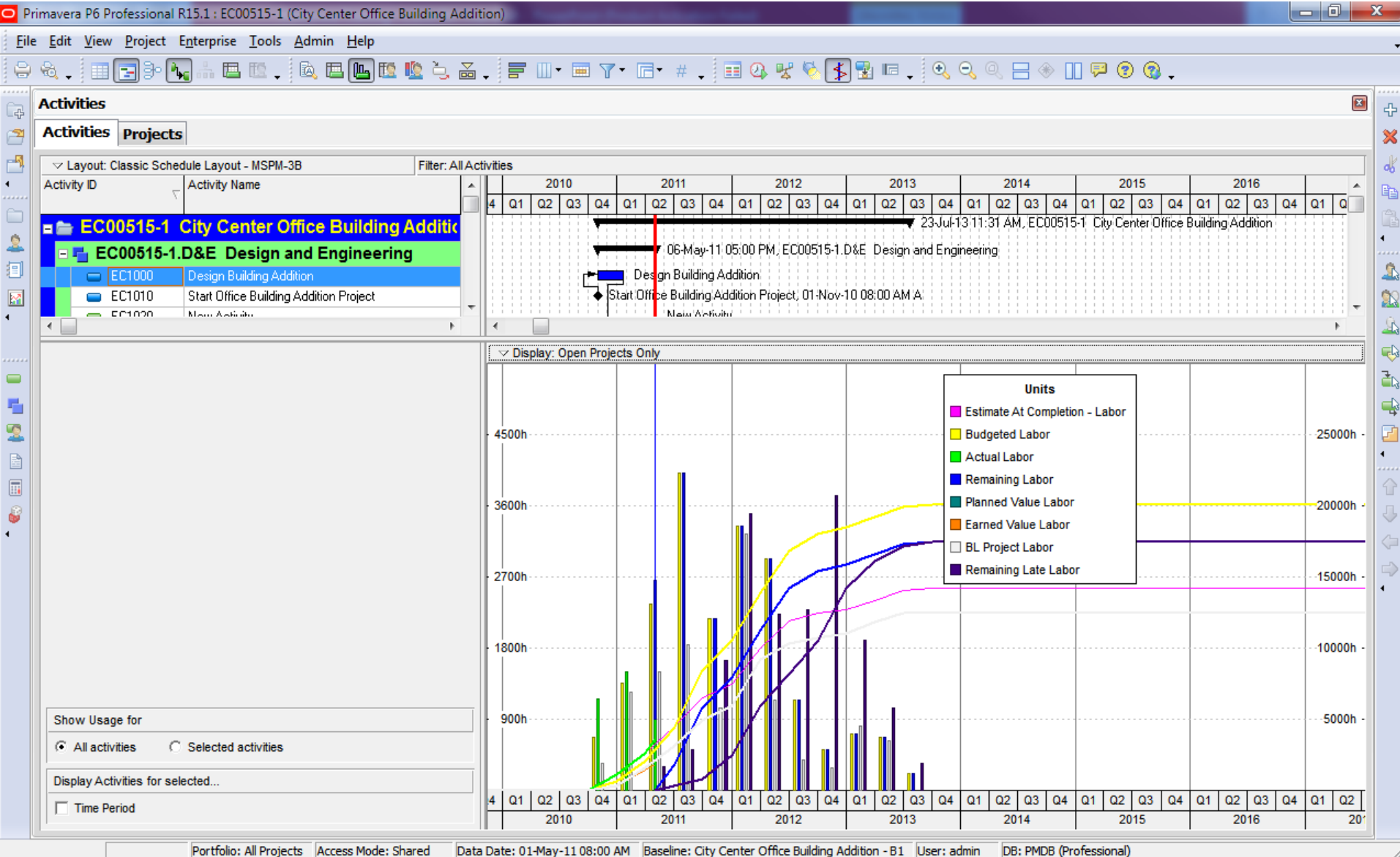


# S-Curve with Earned Value Units

- You can switch between *Labor* Units and *Nonlabor* Units



# S-Curve with Earned Value Units



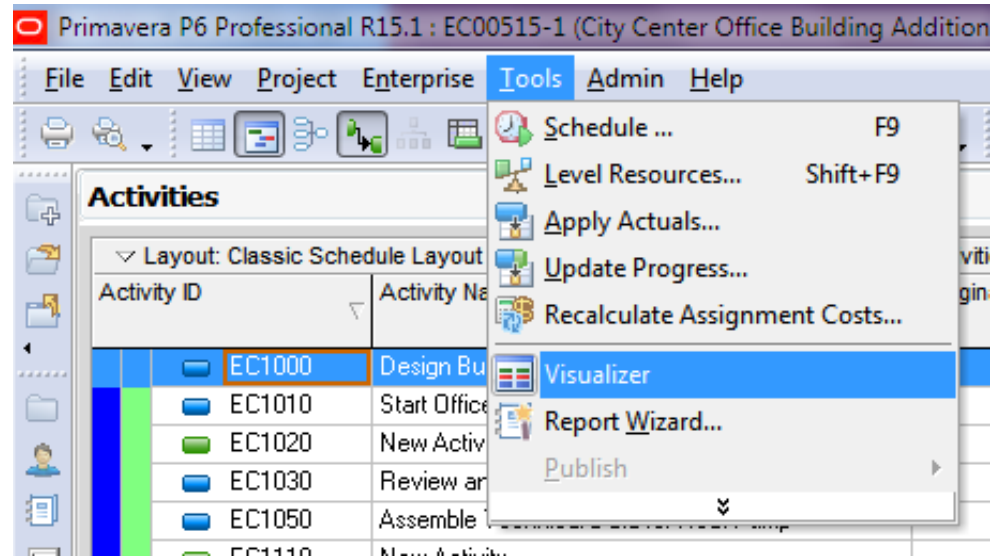
# Primavera Visualizer

- Visualizer is a feature that supports graphical reporting by enabling users to create customizable Gantt charts and TimeScaled Logic Diagrams (TSLDs).
- Visualizer enables a user to:
  - Stack columns & use word wrapping in the Gantt chart
  - Use notebook topics or a list of steps as a bar label or as an field in the activity table
  - Apply various fonts to individual labels and fields
  - Color-code and apply different shapes for bars and endpoints
  - Draw bars on top of each other, for example, to show critical highlighting

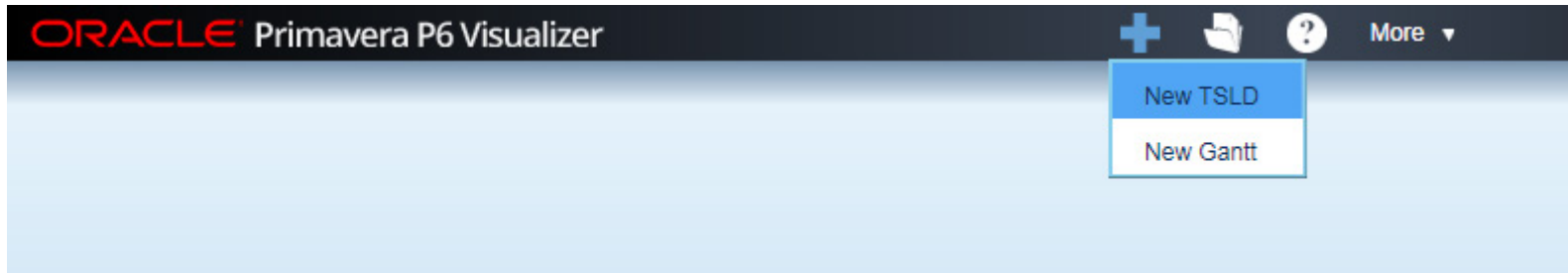


# Primavera Visualizer

- Click *Tools (Menu)* → *Visualizer*

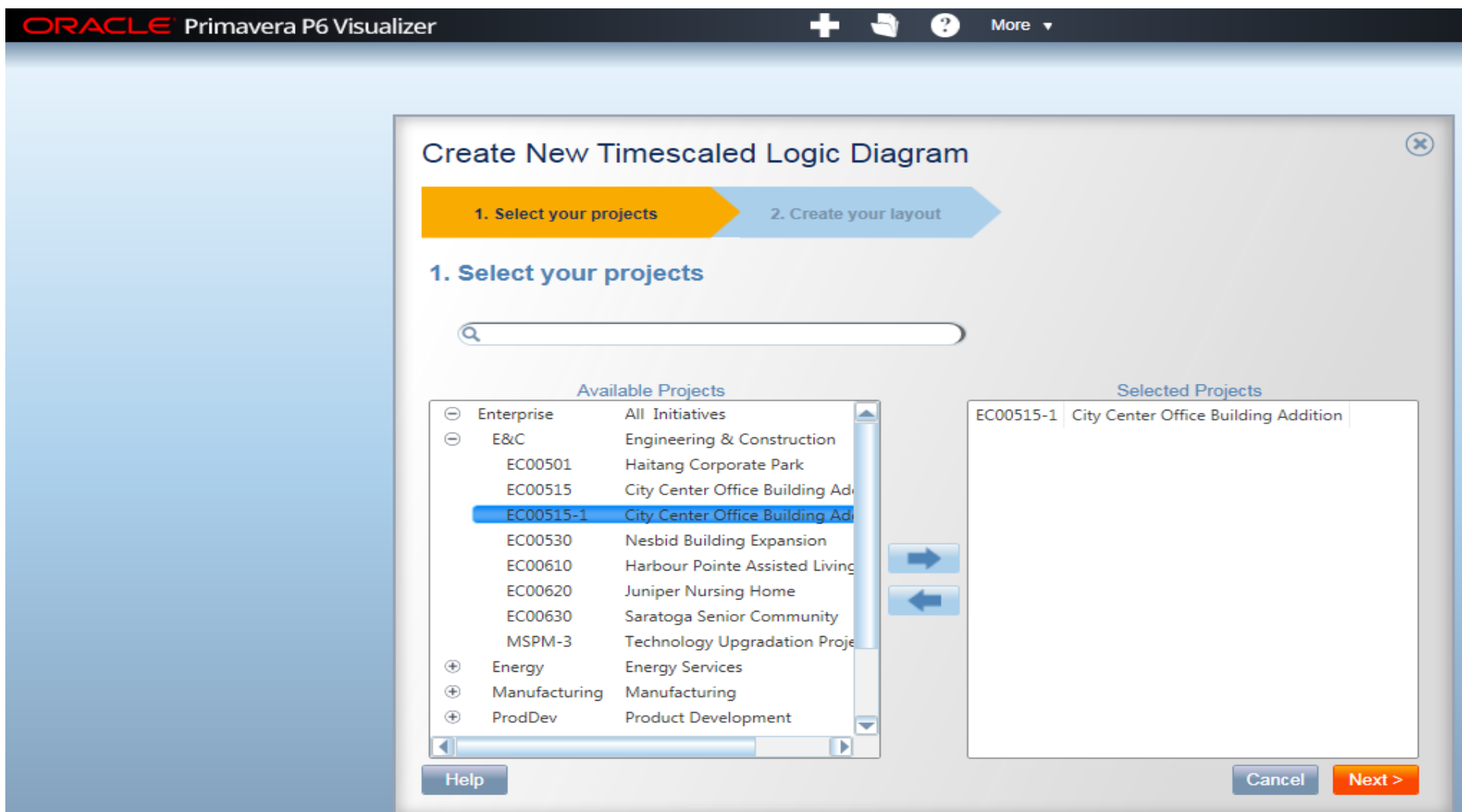


- Use *Add (Button)* to select *New TSLD* or *New Gantt*



# Primavera Visualizer

- *Select your Project(s)* then Click *Next (Button)*



The screenshot shows the 'Create New Timescaled Logic Diagram' dialog box in Primavera P6 Visualizer. The dialog has a progress bar with two steps: '1. Select your projects' (highlighted in orange) and '2. Create your layout'. Below the progress bar, the title '1. Select your projects' is displayed. A search bar is present. The main area is divided into two columns: 'Available Projects' and 'Selected Projects'. The 'Available Projects' list includes categories like Enterprise, E&C, Energy, Manufacturing, and ProdDev, with sub-items such as 'All Initiatives', 'Engineering & Construction', 'Haitang Corporate Park', 'City Center Office Building Addition', 'Nesbid Building Expansion', 'Harbour Pointe Assisted Living', 'Juniper Nursing Home', 'Saratoga Senior Community', and 'Technology Upgradation Project'. The 'EC00515-1 City Center Office Building Addition' project is selected and highlighted in blue. The 'Selected Projects' list on the right contains 'EC00515-1 City Center Office Building Addition'. Navigation buttons (right and left arrows) are located between the two lists. At the bottom, there are 'Help', 'Cancel', and 'Next >' buttons.

Available Projects		Selected Projects	
Enterprise	All Initiatives	EC00515-1	City Center Office Building Addition
E&C	Engineering & Construction		
	EC00501 Haitang Corporate Park		
	EC00515 City Center Office Building Addition		
	<b>EC00515-1 City Center Office Building Addition</b>		
	EC00530 Nesbid Building Expansion		
	EC00610 Harbour Pointe Assisted Living		
	EC00620 Juniper Nursing Home		
	EC00630 Saratoga Senior Community		
	MSPM-3 Technology Upgradation Project		
Energy	Energy Services		
Manufacturing	Manufacturing		
ProdDev	Product Development		

# Primavera Visualizer

- *Create a Layout by Creating New from existing; write Name of the Layout in the field*
- Select any Layout from **GLOBAL**
- Click *Draw (button)*

### Create New Timescaled Logic Diagram

1. Select your projects
2. Create your layout

#### 2. Create your layout

Name

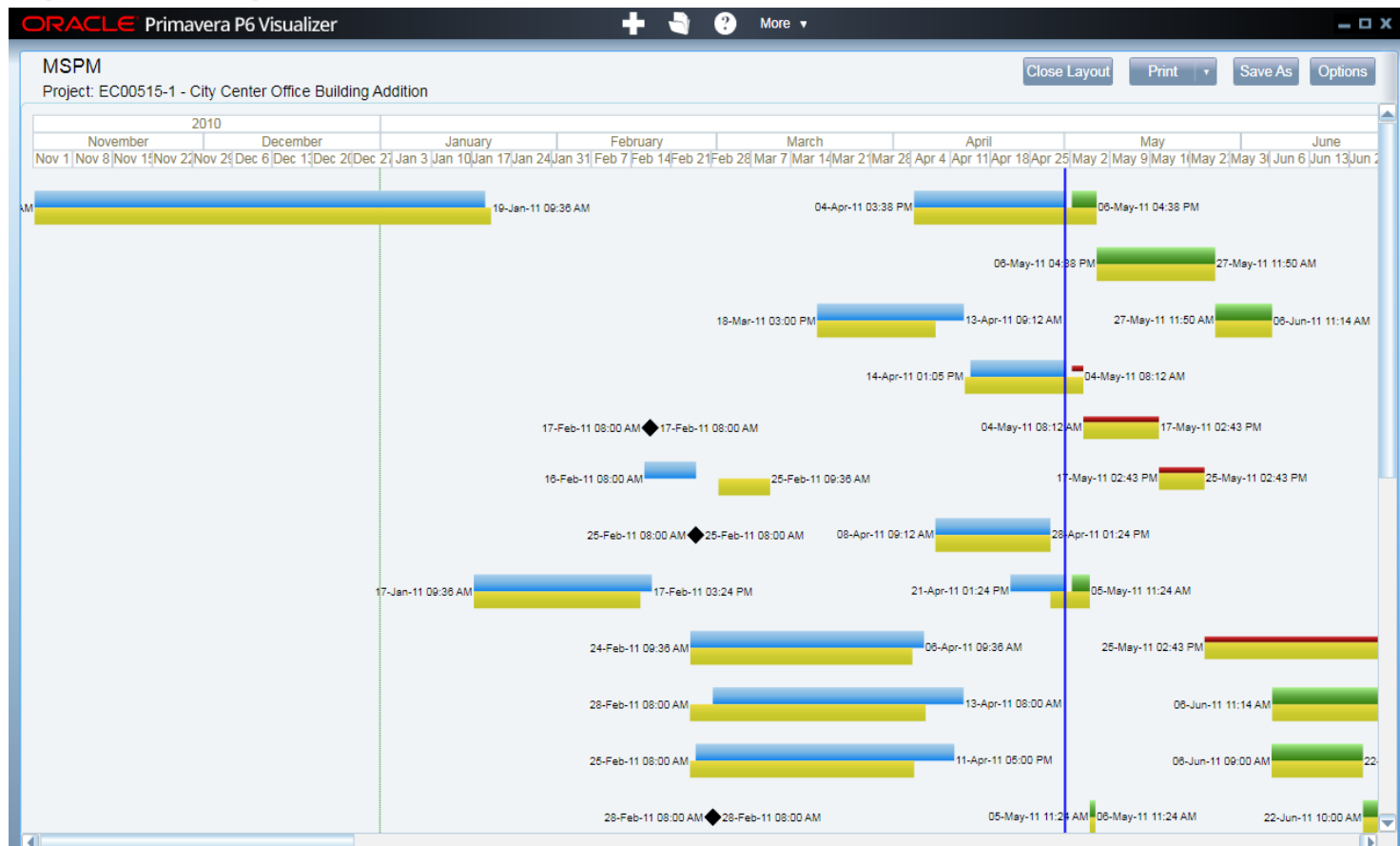
Create New
  Create New from existing

Layout	Type	Project ID	Project Name
Global (3 items)			
Baseline vs Current	TSLD		<span style="color: white; font-size: 0.8em;">✕</span>
TSLD with Bar Necking	TSLD		
TSLD with Steps	TSLD		
Project (0 items)			
User (3 items)			

Help
< Back
Cancel
Options
Draw

# Primavera Visualizer (Report)

- Use *Options (button)* to explore options related to filters, bars relationships etc.
- Use *Print (button)* to take/ set Printouts



# Lesson Review

- The reports window displays reports for schedule, resource, and cost
- You can report schedule performance by choosing one of the pre-defined schedule reports listed in the Reports Window
- The Report Wizard enables you to easily create a wide variety of adhoc reports. The reports can be modified as they are built, or they can be reopened later to be modified. To create a wizard report
  - Select a base table and pertinent data fields
  - Organize the data via grouping, sorting, and filtering options

# Lesson Review

- The Report wizard can also be used to create reports based on the layout that is currently displayed
- Reports can also be used to Print Bottom Layouts (Profile)
  - S-Curve & Earned Value Reports using Activities Window Layouts (Activity Usage Profile & Resource Usage Profile)
- Primavera Visualizer is used to display/ print Gantt Charts & TSLDs

# Project Website

## Lesson 19

# Project Website

- Objectives
  - Create a launch a project website
  - Customize the appearance of a project website
  - Publish activity layouts as HTML pages



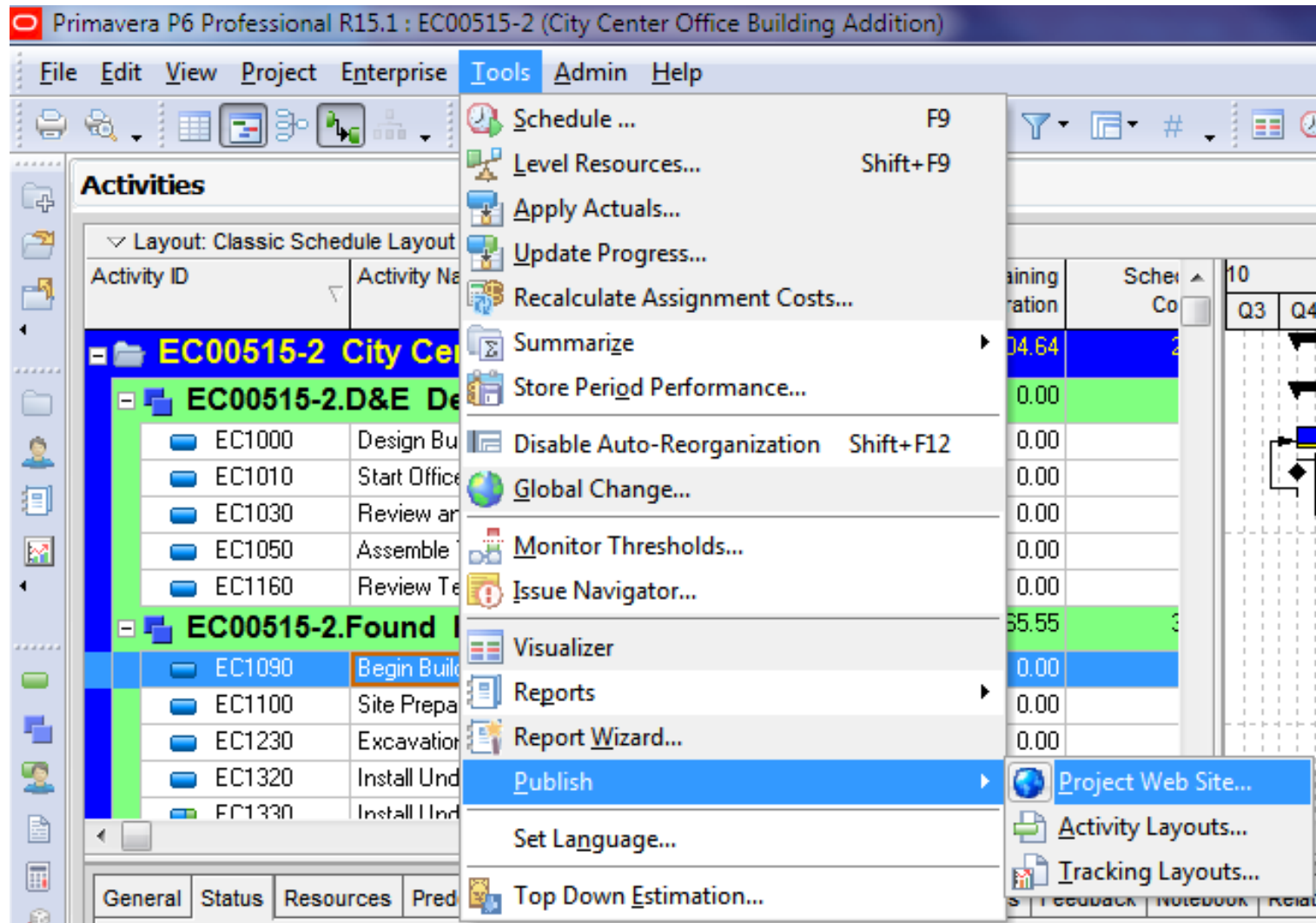
# Project Website

- The *Project Website* feature is used to publish a project plan as a website on an intranet or in internet. Using a web browser, the project team and other interested parties can view project documents that contain hyperlinks to other pages, enabling them to move between projects and from page to page within a report
- You can browse a project plan at a high level and quickly view more detailed information about specific activities, work products and documents, resources, etc. You can also navigate a project website using project's WBS, resource hierarchy, reference documents outline, activity codes and values, risks, and issues
- Among the Website features
  - Customize the webpage design
  - Create a website that contains one or more multiple projects
    - The project(s) must be opened when publishing
  - Control the level of detail published, e.g. limiting activity information and personal information about resources

# Project Website

- Control the information including
  - Activity Layouts
  - Tracking Layouts
  - Project Reports
  - Global Data Dictionaries
- Test project website locally prior to publishing publicly
- Exercise
  - Steps
    - Tools Menu → Publish → Project Website

# Project Website



The screenshot displays the Primavera P6 Professional R15.1 software interface. The title bar reads "Primavera P6 Professional R15.1 : EC00515-2 (City Center Office Building Addition)". The menu bar includes "File", "Edit", "View", "Project", "Enterprise", "Tools", "Admin", and "Help". The "Tools" menu is open, showing various options such as "Schedule...", "Level Resources...", "Apply Actuals...", "Update Progress...", "Recalculate Assignment Costs...", "Summarize", "Store Period Performance...", "Disable Auto-Reorganization", "Global Change...", "Monitor Thresholds...", "Issue Navigator...", "Visualizer", "Reports", "Report Wizard...", "Publish", "Set Language...", and "Top Down Estimation...". The "Publish" option is highlighted, and its sub-menu is open, showing "Project Web Site...", "Activity Layouts...", and "Tracking Layouts...".

The "Activities" pane on the left shows a hierarchy of activities for "EC00515-2 City Center Office Building Addition". The activities are listed in a table:

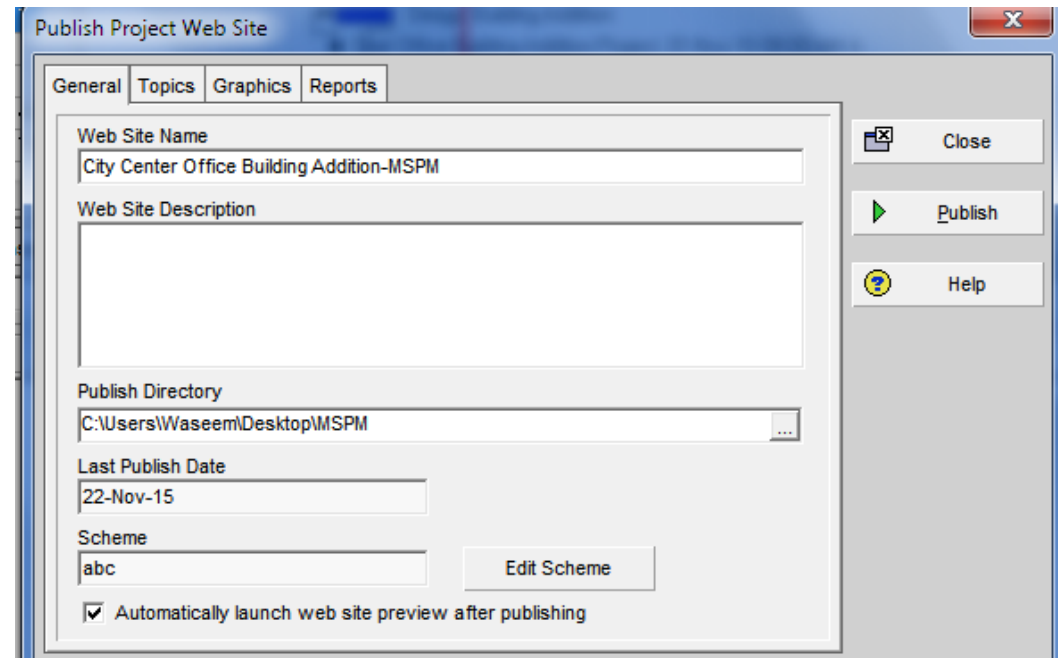
Activity ID	Activity Name
<b>EC00515-2.D&amp;E Design</b>	
EC1000	Design Building
EC1010	Start Office
EC1030	Review and
EC1050	Assemble
EC1160	Review Te
<b>EC00515-2.Foundation</b>	
EC1090	Begin Build
EC1100	Site Prepa
EC1230	Excavation
EC1320	Install Und
EC1330	Install Und

The main workspace shows a Gantt chart with columns for "Q3" and "Q4". The "Publish" menu item is highlighted in blue, and its sub-menu is open, showing "Project Web Site..." as the first option.

# Project Website

- Use *General (Tab)* for Website Name, Description, Publish Directory (Path)
- Use *Topics (Tab)* to include topics of your choice
- Use *Graphics (Tab)* to include layouts
- Use *Reports (Tab)* to add Reports in your website

- Press *Publish (button)* to launch the website in the publish directory



Publish Project Web Site

General Topics Graphics Reports

Web Site Name  
City Center Office Building Addition-MSPM

Web Site Description

Publish Directory  
C:\Users\Waseem\Desktop\MSPM

Last Publish Date  
22-Nov-15

Scheme  
abc

Automatically launch web site preview after publishing

Close  
Publish  
Help

# Project Website



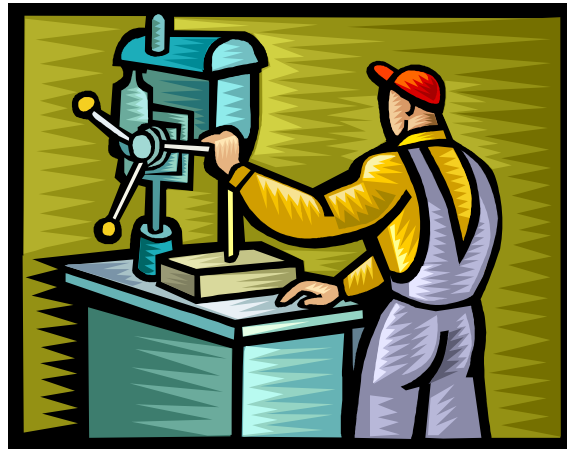
## City Center Office Building Addition-MSPM

*Published February 20, 2016*

*Click to Enter*

# WORKSHOP

## Project Website



# Lesson Review

- The project website feature is used to publish a project plan as a website on an intranet or in internet.
- The website can include activity layouts, tracking layouts, project reports, and global data dictionaries
- You can use default scheme or create your own scheme by adding graphics, fonts, and colors
- You can also save activity layouts as HTML files that are not linked to any project website you previously created. These layouts represent a static picture of the project

# CONGRATULATIONS

