## Rock'n Bands

## A Project Management Decision-Making Game

Your company, Planners 'R Us, specializes in effectively managing projects. Previous experience has involved conference management systems, commercial construction, and software development projects.

A new, intriguing project offers another opportunity to apply your project management expertise. The university you are graduating from, Bahria, wishes to put together a music festival, "Rock'n Bands". This will feature a number of top music groups, and should attract interest from students, local residents, and music fans throughout Islamabad.

Your company has met with University officials to develop a list of activities required to make *Rock'n Bands* a reality. The table blow includes twelve activities as well as their durations and immediate predecessors. The project plan is to draw a network diagram. The subscripts on each activity denote the number of weeks of work that activity is expected to require. Arrows denote the order of activities. For instance, activity E cannot be started until activity A is completed, and activity H cannot be started until both C and D are complete. The start and end nodes are dummy nodes and do not need to be worked on. Note that at the beginning of the project, activities A, C and D are available to start working on, as they have no predecessor activities. *Be sure to understand the diagram before reading further*.

Activity	Duration (weeks)	Immediate predecessors		
A	3	-		
В	5	С		
С	2.	-		
D	3	-		
Е	1	A		
F	4.	D		
G	1	Е		
Н	3	C, D		
I	. 5	F, H		
J	4.	E, B, H		
K	5	G		
L	2	F		

Your job is to allocate workers to tasks each week during the project in such a way that you complete the project in minimum possible time. Planners 'R Us has also agreed to minimize the costs associated with the project. All tasks A-L must be completed. You have four (4) workers, although you do not need to use all of them every week – there are other tasks they can do in your company.

For bookkeeping purposes, your company will charge \$200 per week for each worker that you use. If you happen to need an additional worker, there is one (1) available, but that person would then not get their other work done; thus, you will be charged \$300 per week for the additional worker.

The final cost to consider involves expediting tasks. You can assign an extra worker to a task in any given week in order to finish it in less time. For instance, if a task requires 2 weeks but you assign two workers, it will be completed in one week. However, putting two workers on a task is not quite as efficient as having one worker complete it from start to finish. Doing this requires additional coordination (by you) and may require some overtime by the workers. These costs total an additional \$100 per week. The most workers that can be assigned to any task in a week is two (since having 3 or more requires so much additional coordination that no reduction in time is achieved). To summarize, the most workers on any given task is two (2) per week, and the total number of workers you may employ for any week is at most five (5).

	Work Sheet: # of Employees Assigned											
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Wo	rk S	heet	:: # 0	of En	nplo	yee	s Ass	sign	ed		
Α	В	С	D	E	F	G	Н	1	J	K	L
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