

Refer to the table below, which shows normal and crash (speeded up) activity duration and cost values for a number of activities involved in one of the work packages involved in the project.

Activity	Normal duration (weeks)	Normal cost (£)	Crash duration (weeks)	Crash cost (£)
A-B	6	100,000	4	120,000
A-C	2	150,000	2	150,000
A-D	2	200,000	1	300,000
B-E	5	50,000	4	80,000
C-E	3	40,000	2	140,000
C-G	1	20,000	1	20,000
D-E	3	150,000	2	250,000
E-F	2	30,000	1	40,000
E-G	6	90,000	5	170,000
F-H	1	150,000	1	150,000
G-H	7	200,000	6	240,000
H-I	2	100,000	1	250,000
H-J	6	40,000	5	110,000
H-K	1	400,000	1	400,000
I-L	3	100,000	2	200,000
J-L	5	20,000	4	80,000
K-L	2	30,000	1	50,000
L-M	2	40,000	1	80,000
L-N	4	30,000	3	120,000
M-O	2	100,000	1	500,000
N-P	8	200,000	7	250,000
O-P	3	160,000	2	260,000
P-Q	4	60,000	3	80,000

- Develop a project schedule for the activities given. Show the start and finish date and duration of each activity. State the overall work package duration and show the critical path.
- management require to shorten the project duration by at least 15%, to finish it earlier than originally presented. Show the crash sequence of cost against time using a suitable form of graphical representation. State the new total cost of the work package.
- Discuss the main sources of duration estimating data used by organizations when assembling project schedules. Demonstrate the use of one of them in this case.

Refer to table below, which shows the actual cost and schedule performance of two sections (each comprising two teams) working on one of the main computer work packages. Note the target production and cost figures given. It refers to the output figures of two sections (each comprising two teams) of IT division operatives who are working on one of the main computer work packages in the project. The figures for the operatives cover the first 6 weeks of the package. The teams are installing components at a planned rate of 1000 units per week per team over a 10-week total period. Each unit has an estimated cost of £100

Week	Section	Team	Number of units installed	Actual cost incurred (£)
1	1	1.1	1,000	100,000
1	1	1.2	900	100,000
1	2	2.1	1,100	90,000
1	2	2.2	1,000	120,000
2	1	1.1	2,000	200,000
2	1	1.2	1,800	210,000
2	2	2.1	2,100	180,000
2	2	2.2	2,000	230,000
3	1	1.1	3,000	300,000
3	1	1.2	2,800	310,000
3	2	2.1	3,200	260,000
3	2	2.2	3,000	320,000
4	1	1.1	4,000	400,000
4	1	1.2	3,700	450,000
4	2	2.1	4,300	350,000
4	2	2.2	3,500	420,000
5	1	1.1	5,000	500,000
5	1	1.2	4,600	550,000
5	2	2.1	5,400	460,000
5	2	2.2	3,800	500,000
6	1	1.1	6,000	600,000
6	1	1.2	5,500	650,000
6	2	2.1	6,500	570,000
6	2	2.2	4,200	600,000

- (a) Comment on the performance of each team, each section and on the performance of the work package as a whole over the 6-week period. Support your comments using EVA variables such as CV/SV or CVI/SVI.
- (b) Calculate estimate at completion (EAC) for each team at week 1, for Sections 1 and 2 at week 4, and for the work package as a whole for each week 1–6.
- (c) Discuss the concept of estimated cost to complete (ECTC) and calculate ECTC for each section and for the work package as a whole at week 6.