TUTORIAL 7

Exercise 1:

Consider Table 1. All duration estimates or estimated times are in weeks, and the network proceeds from Node 1 to Node 8.

A. Draw an AOA (activity-on-arrow) network diagram representing the project. Put the node numbers in circles and draw arrows from node to node, labeling each arrow with the activity letter and estimated time. Use Figure 1 as a guide.

B. Identify all of the paths on the network diagram and note how long they are. Use Figure 2 as a guide.

C. What is the critical path for this project and how long is it? Hint: critical path is the longest path through the network diagram.

D. Calculate the shortest & longest possible time needed to complete this project? Use Figure 3 as a guide.

E. Draw the Gantt Chart for this project. Use Figure 4 as a guide.

Activity	Initial Node	Final Node	Estimated Duration
A	1	2	10
B	1	3	12
C	1	4	8
D	2	3	4
E	2	5	8
F	3	4	6
G	4	5	4
H	4	6	8
I	5	6	6
J	5	8	12
K	6	7	8
L	7	8	10

Table 1 – Network diagram data for a large project
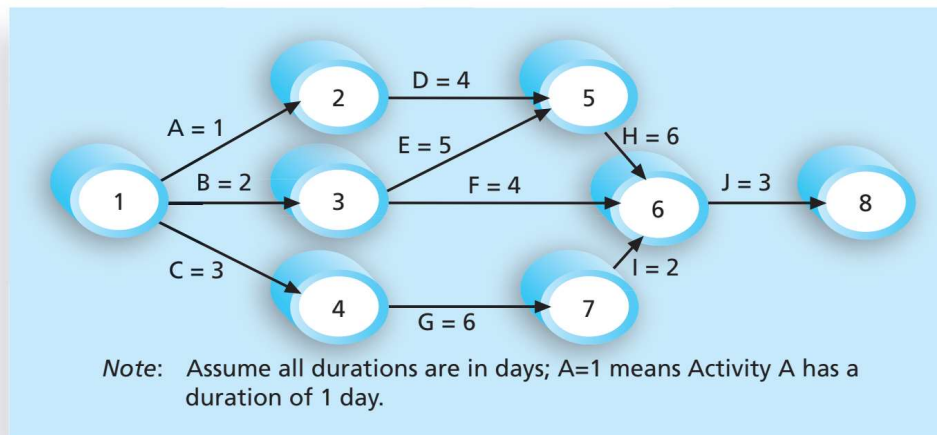
Figure 1 – Sample AOA diagram for project X

Path 1:	A-D-H-J	Length = 1+4+6+3 = 14 days
Path 2:	B-E-H-J	Length = 2+5+6+3 = 16 days
Path 3:	B-F-J	Length = 2+4+3 = 9 days
Path 4:	C-G-I-J	Length = 3+6+2+3 = 14 days

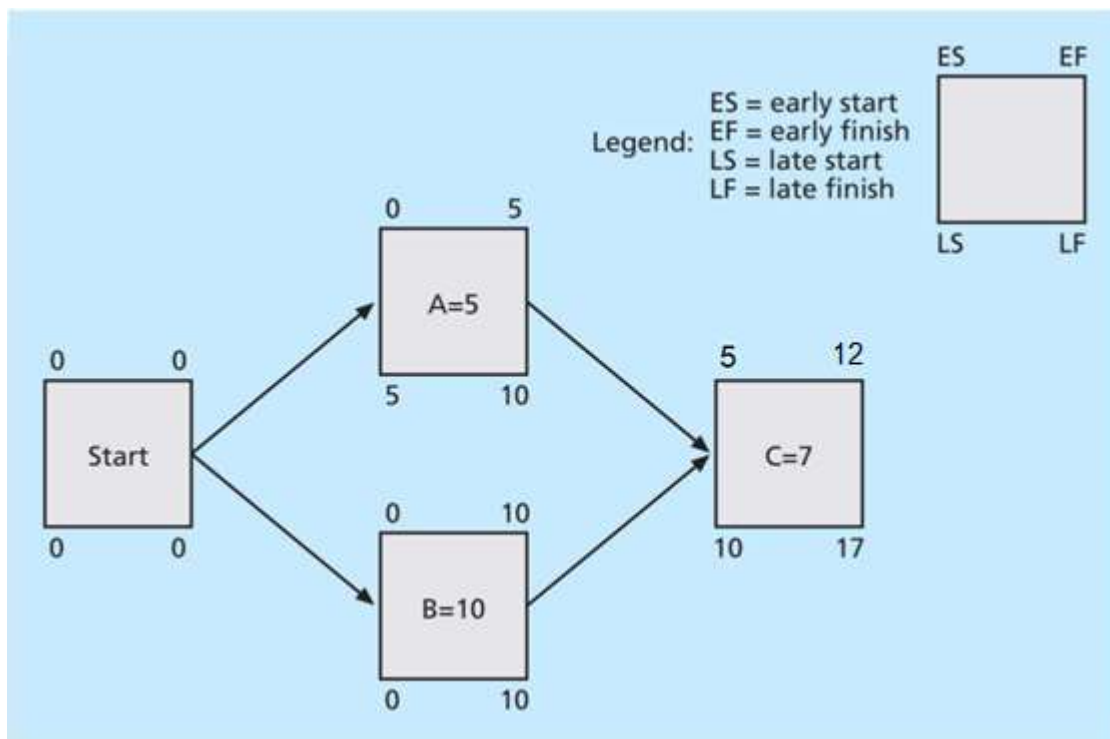*Figure 2 – Identify all the paths for project X*

Figure 3 - Calculate early, late start & finish dates for project X

Definition:

- The *early start date* is the earliest possible time an activity can start based on the project network logic

- The *early finish date* is the earliest possible time an activity can finish based on the project network logic

- The *late start date* is the latest possible time an activity might begin without delaying the project finish date

- The *late finish date* is the latest possible time an activity can be completed without delaying the project finish date
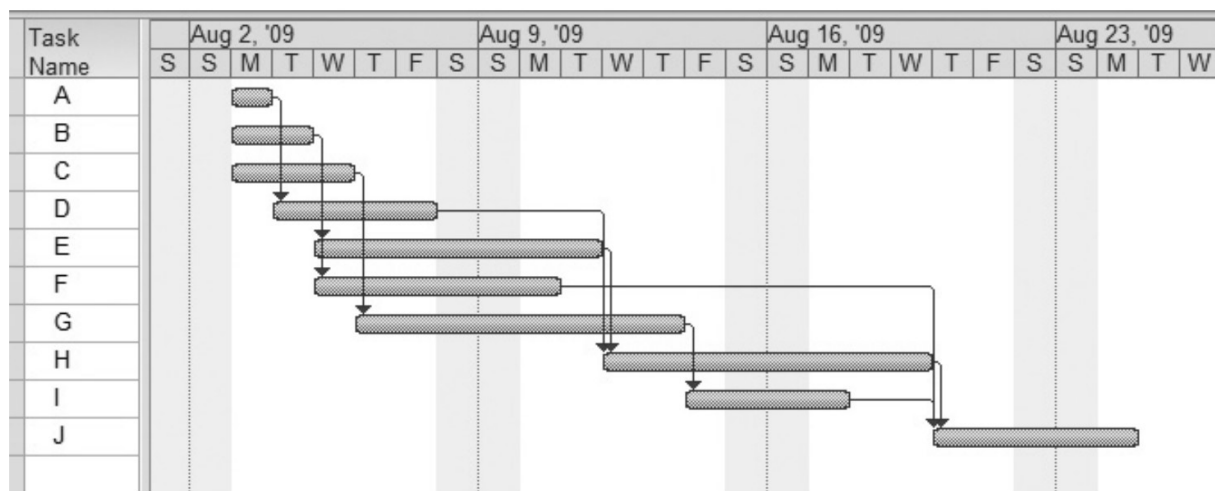

Figure 4 - Gantt Chart for project X

Notes:

- Select a random date as the start date for this project

- Determine the end date for each activity based on the estimated duration

- You can use either offline tool (such as Microsoft Project) or online tool (such as Visual Paradigm Online) to draw Gantt Chart

- Export the Gantt Chart as image then insert into Word document (your answer)