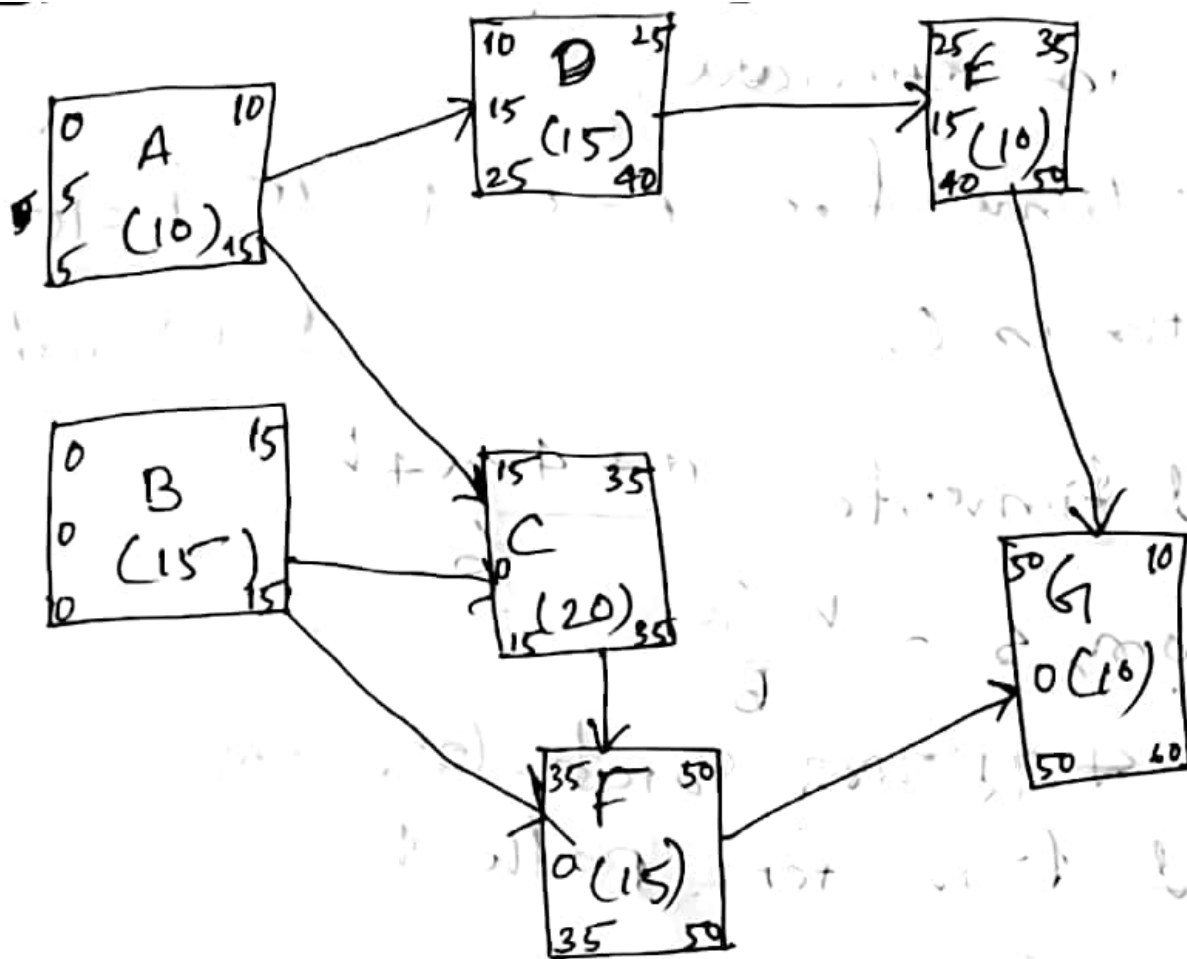


# Software/Project Scheduling

## CPM (Critical Path Method)

Task	Predecessors	Most likely time, m	Optimistic time, a	Pessimistic time, b
A	—	10	8	15
B	—	15	10	20
C	A, B	20	15	22
D	A	15	10	18
E	D	10	8	18
F	B, C	15	12	19
G	E, F	10	9	12

1. Draw the CPM Network.
2. Write down all the possible paths.
3. Find out the critical path.
4. Find out the slack time associated with each task.



2. a)  $A \rightarrow D \rightarrow E \rightarrow G$

b)  $A \rightarrow C \rightarrow F \rightarrow G$

c)  $B \rightarrow C \rightarrow F \rightarrow G$

d)  $B \rightarrow F \rightarrow G$

3. Calculate the sum of associated values —

a)  $10 + 15 + 10 + 10 = 45$

b)  $10 + 20 + 15 + 10 = 55$

c)  $15 + 20 + 15 + 10 = 60$

d)  $15 + 15 + 10 = 40$

the path with highest value is critical.

C path is critical.

4. slack time for  $A=5$ ,  $D=15$ ,  $E=15$

Others is 0.

PERT method

$$\text{expected time, } t_e = \frac{a + 4m + b}{6}$$

$$\text{Deviation, } s_i = \frac{b-a}{6}$$

সূত্রগুলি ~~সহ~~ জুড়ানোর পার্ট - এর জন্য

expected time for path b

$A \rightarrow C \rightarrow F \rightarrow G$

$$t_e^A + t_e^C + t_e^F + t_e^G$$

$$t_e^A = \frac{8 + 40 + 15}{6} = \frac{63}{6} = 10.5$$

total network - এর expected time এর  
বন্ধে বসানো প্রত্যেকটির path - এর expected  
time এর বন্ধে দেখাতে হবে।

$$\text{total deviation, } s_i = \sqrt{s_i^A + s_i^B + s_i^C + \dots}$$

PERT-এর জন্য ২য় path এর expected  
time বসে / Deviation বসে করে  
critical path.