

Network Diagram

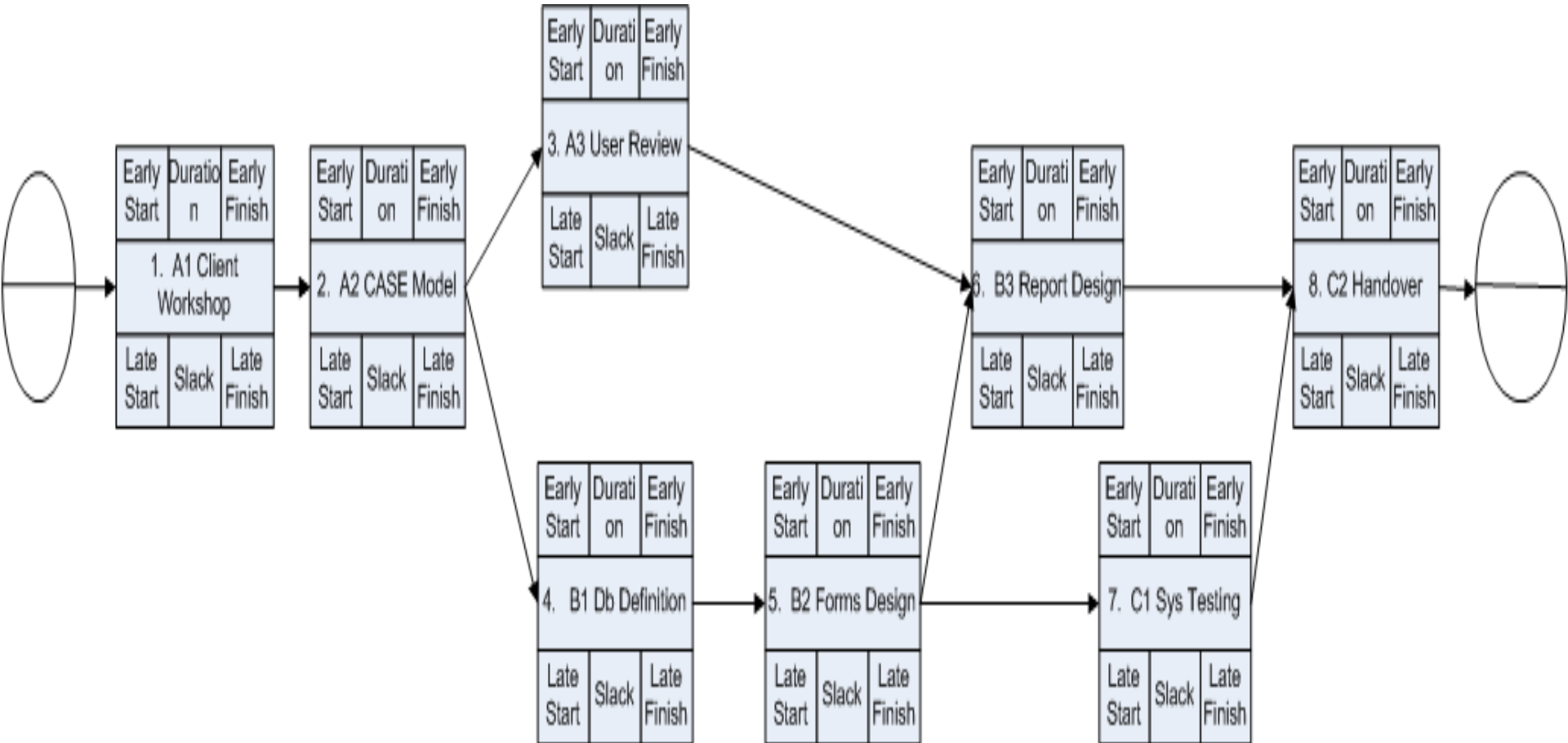
Week 9

Example using A-O-N

ID	TASK NAME	DURATION	PREDECESSORS
1	A1 CLIENT WORKSHOP	10	-
2	A2 CASE MODEL	15	1
3	A3 USER REVIEW	10	2
4	B1 Db DEFINITION	10	2
5	B2 FORMS DESIGN	20	4
6	B3 REPORT DESIGN	5	3,5
7	C1 SYSTEM TESTING	20	5
8	C2 HANDOVER TO CLIENT	5	6,7

EST	DUR	EFT
TASK NAME		
LST	FLOAT	LFT

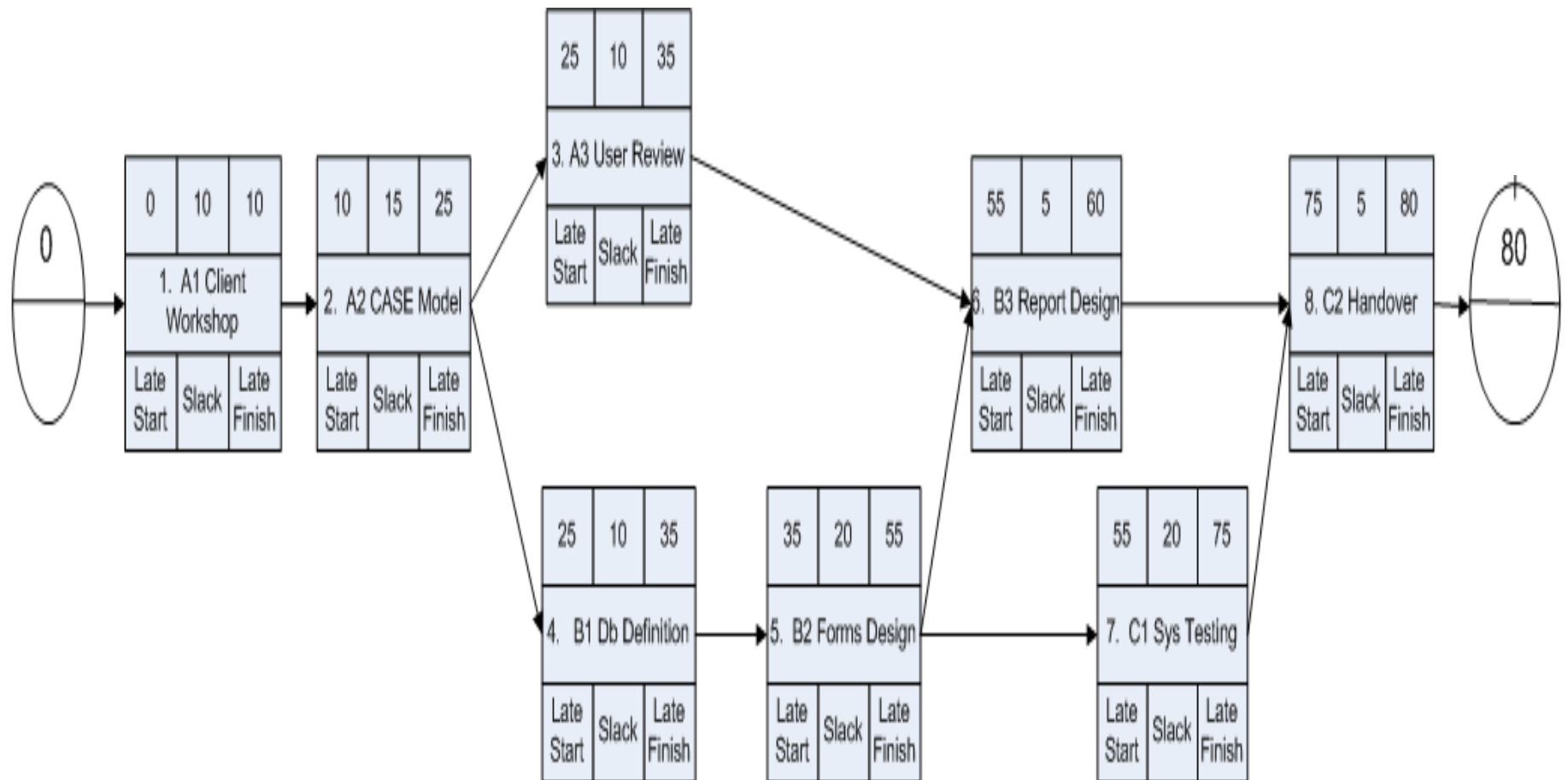
Network Diagram



Forward Pass to calculate EST and EFT

- The EST for the first activity is zero
- EFT for an activity is always found by adding its duration to its EST. i.e. **$EFT = EST + Duration$**
- The EST for all remaining activities is the same as the EFT of its immediate predecessor i.e. **$EST = EFT \text{ of preceding activity}$**
- In the case of convergence, **the EST is taken from the path having the highest EFT**
- The EFT of the last activity is the duration of the project

Forward Pass



Reverse Pass to calculate LST and LFT

- The LFT for the last activity is the same as its EFT
- The LST for an activity is always found by subtracting its duration from its LFT i.e.

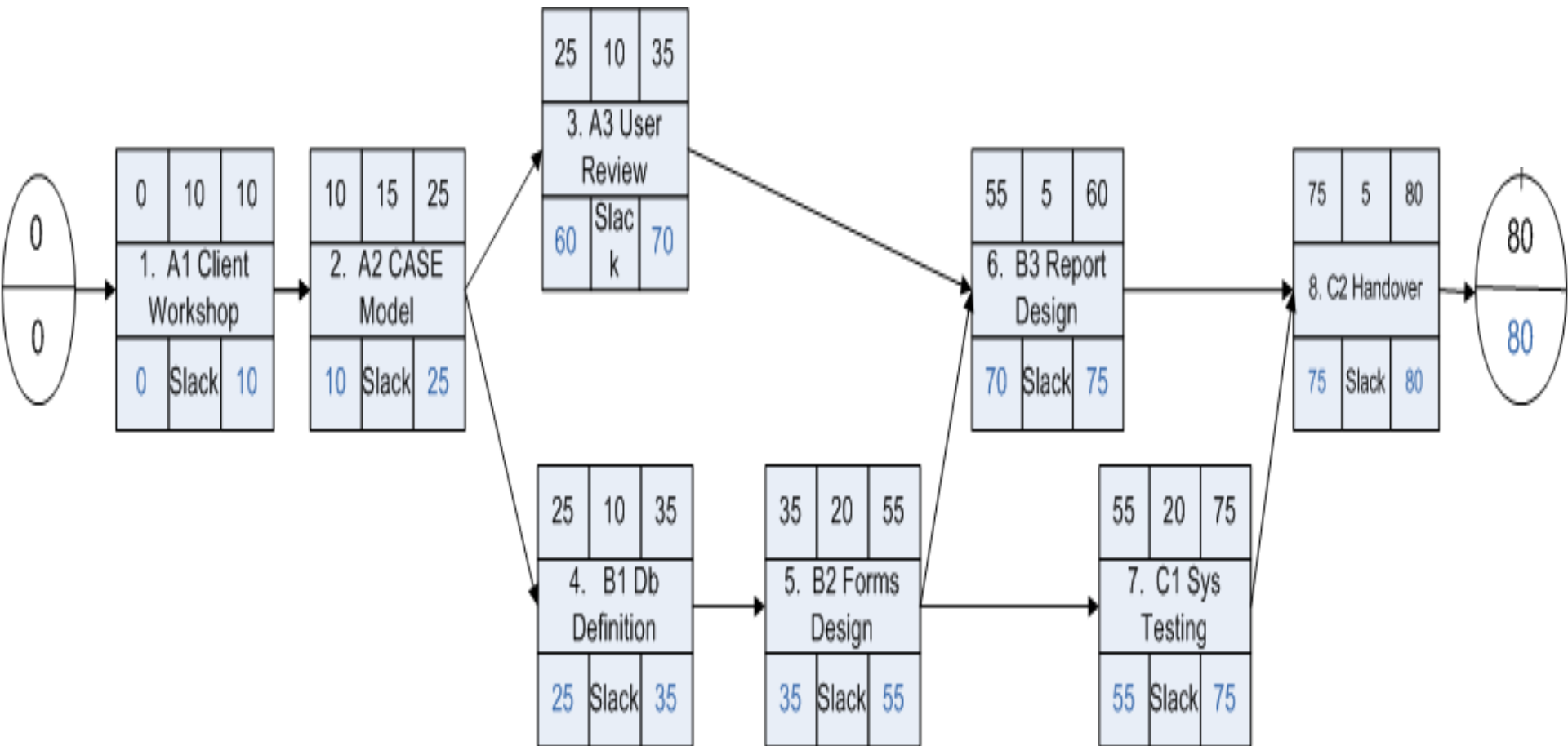
$$\text{LST} = \text{LFT} - \text{Duration}$$

- The LFT for all remaining activities is given by the LST of its immediate successor i.e.

$$\text{LFT} = \text{LST of the successor activity} \text{ (moving from start to finish)}$$

- In case of convergence, **the LFT is taken from the path having the lowest LST**

Reverse Pass



Float/Slack

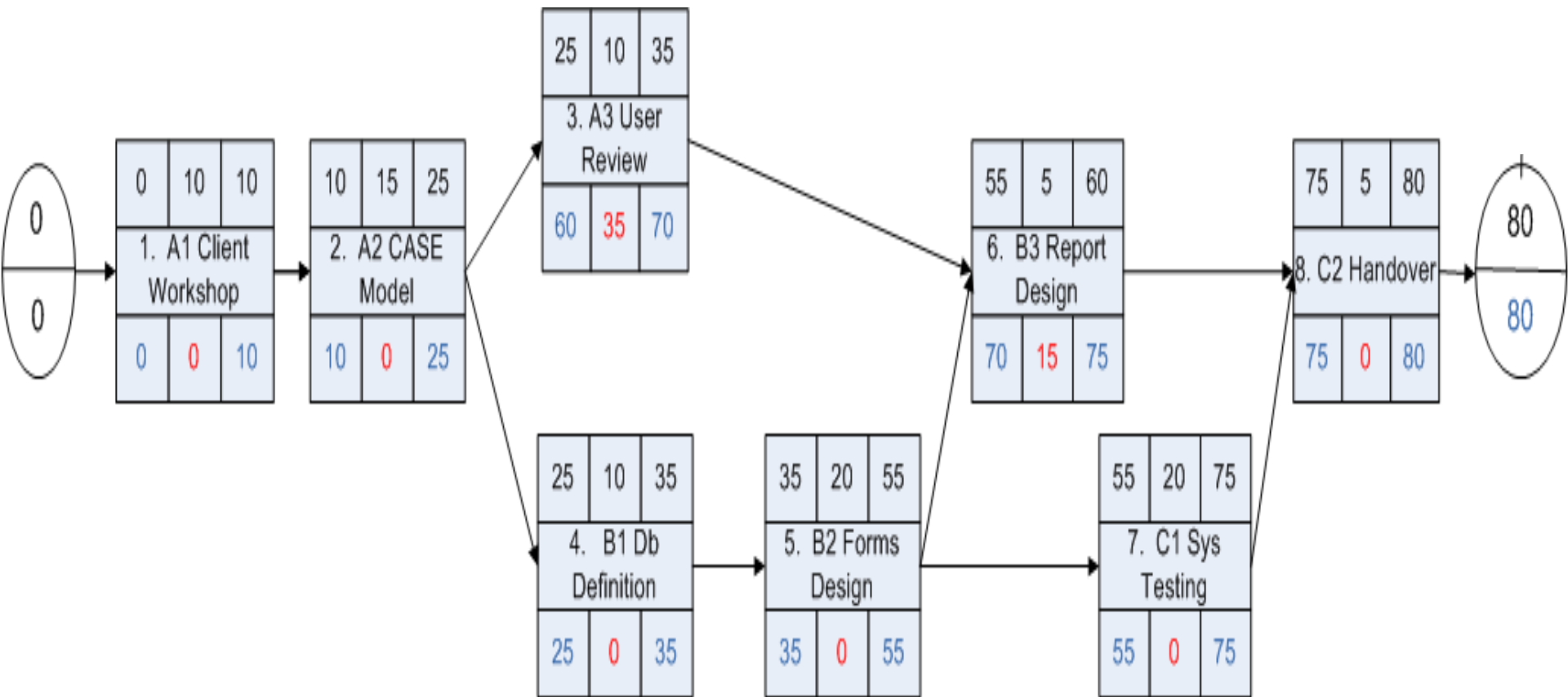
- A critical task is one where $EFT = LFT$. Thinking this through it means that the activity **MUST** start on that date, the EST or the entire project duration is affected
- **Simply put an activity is Critical when the Float = 0**
- A non-critical task is where $EFT < LFT$. This means that although the activity could start as early as the EST, providing it finishes by the LFT the project could still finish on schedule

- **Float/Slack** = LST – EST

$$\text{OR} \quad = \text{LFT} - \text{EFT}$$

- Critical activities must stay on schedule: knowing the float for non-critical activities will let the project manager know how long they can be delayed for before impacting the entire project.

Float/Slack



- **Critical Path-** The critical path is the series of tasks (or even a single task) that dictates the calculated finish date of the project.
- That is, when the last task in the critical path is completed, the project is completed.
- It is identified by the series of task where the Float or Slack is 'Zero'