IIT ROORKEE

NPTEL ONLINE CERTIFICATION COURSE

Project Management for Managers

Lec – 36

Project Time Management – PERT Networks

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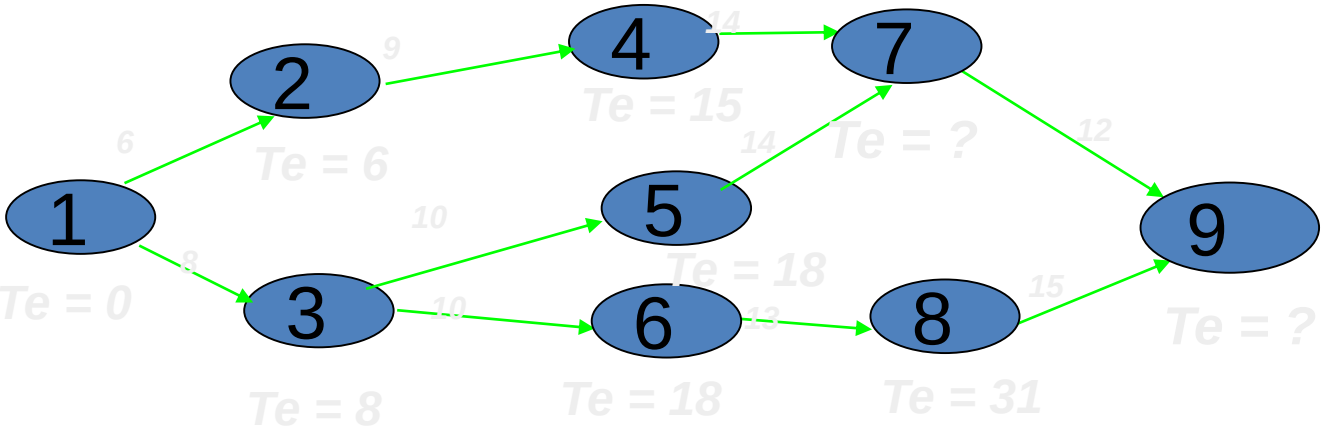
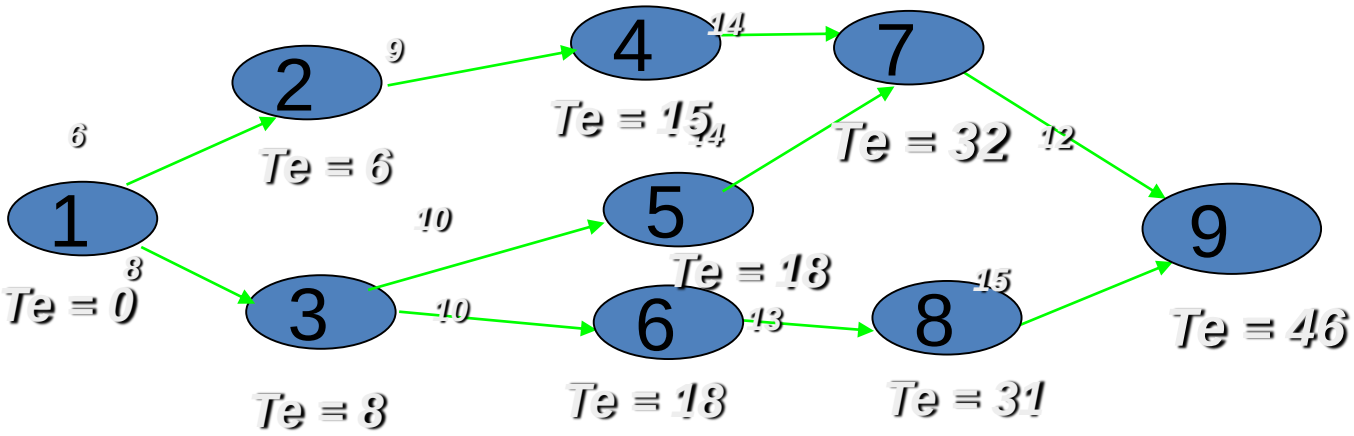
Earliest expected time/ Earliest start time (Te).



We calculate "Te" in forward pass.

Earliest expected time/ Earliest start time (Te).

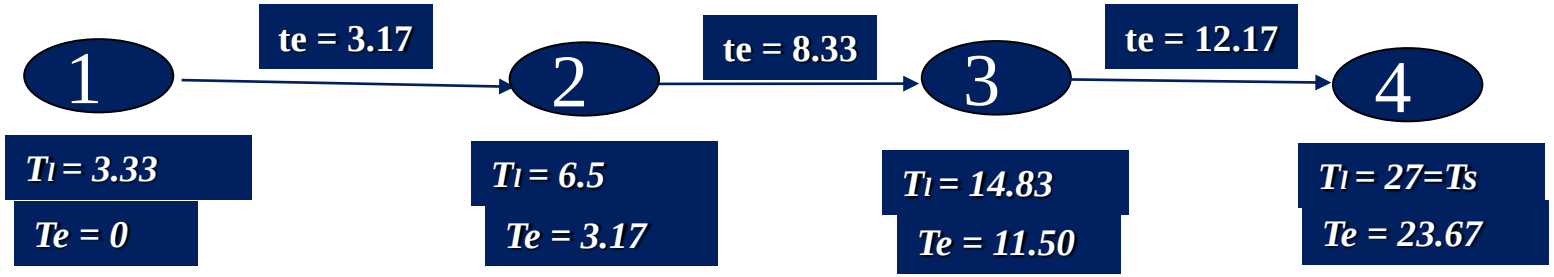


We calculate "Te" in forward pass.

Latest allowable occurrence time (Tl) / Latest completion time:

The latest time by which an event must occur to keep the project on schedule is known as latest allowable occurrence time.

To explain this, consider contractual obligation time (Ts)= 27



We calculate "Tl" in Backward pass.

Single Vs. Multiple Time Estimate.

Networks used in process and construction industries where vast experience has provided the basis for reliable and accurate time estimates, a single time estimate appears to be more reasonable.

We can appreciate the multiple time estimates in projects where research and development (cryogenic, nano tech, bio medical,) activities, technological breakthroughs have a considerable effect.

PERT Network and Time Estimates.

1. The Optimistic Time Estimate: This is the estimate of the shortest possible time in which an activity can be completed under ideal condition. (better than normal conditions are assumed to prevail during the execution of the project). This is represented by ‘to”.

2. The Pessimistic Time Estimate: This is the maximum possible time it could take to accomplish the job. If everything went wrong and abnormal situations prevailed, this would the time estimate for that activity. This is represented by‘tp’.

3. The Most Likely Time Estimate: This is the time estimate which lies between the optimistic and the pessimistic time estimates. This is represented by ‘tm’.

Multiple Time Estimate- By experts

Optimistic (to)

Pessimistic time(tp)

Most likely time(tm)

$te = (to + 4tm + tp)/6$

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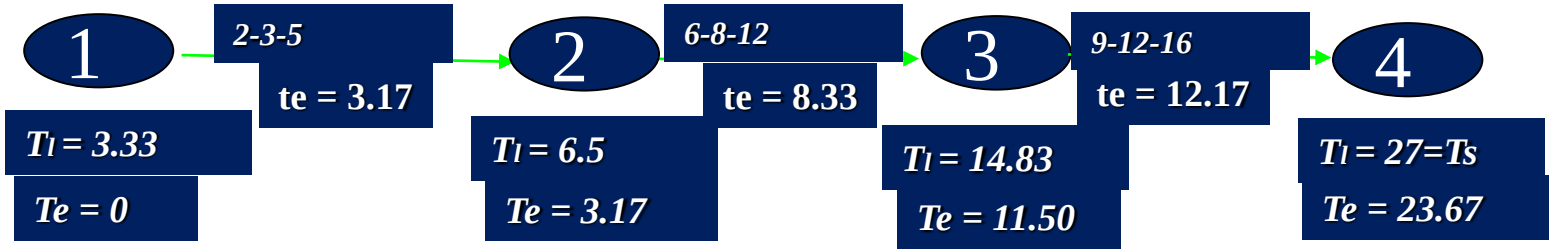
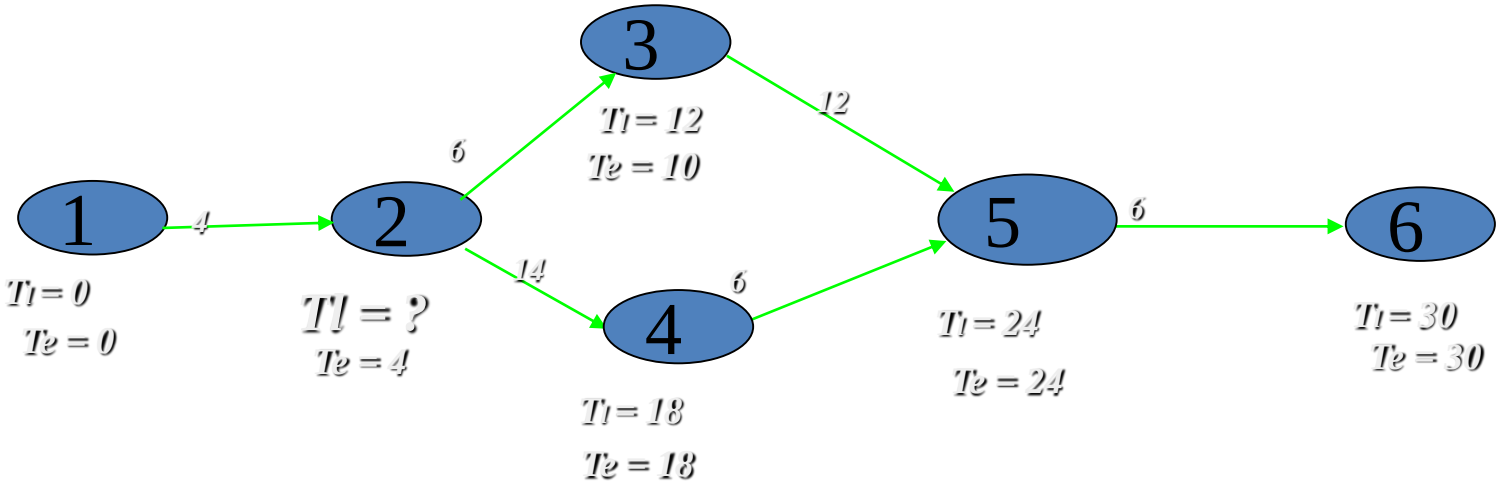


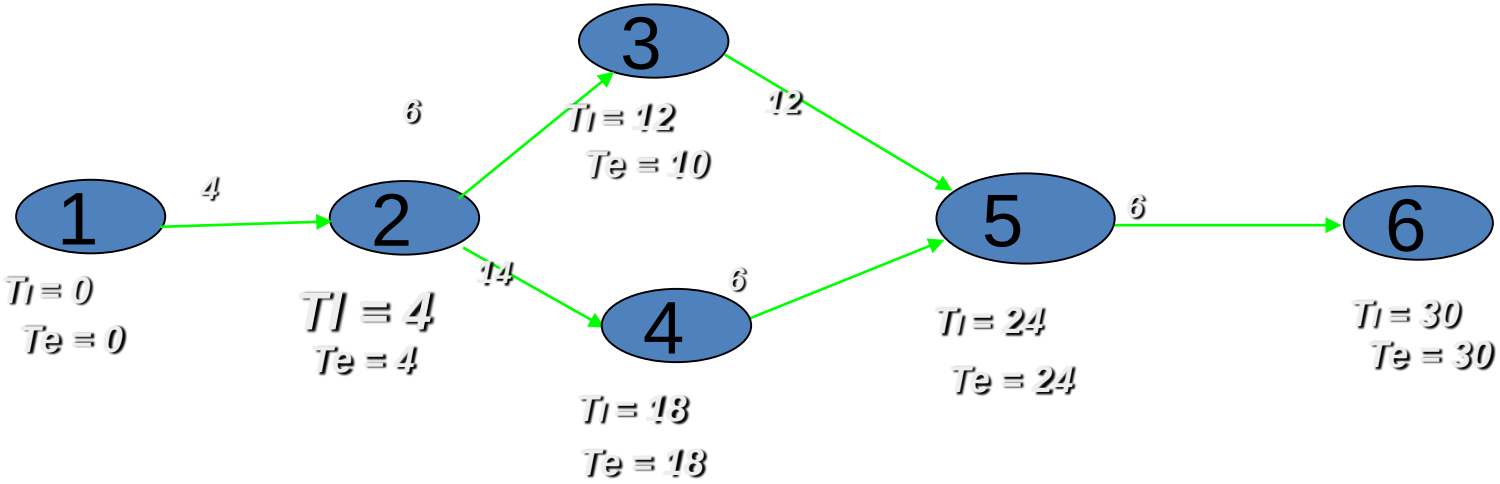
We calculate "Tl" in Backward pass.

Latest allowable occurrence time / Latest completion time (T_l).



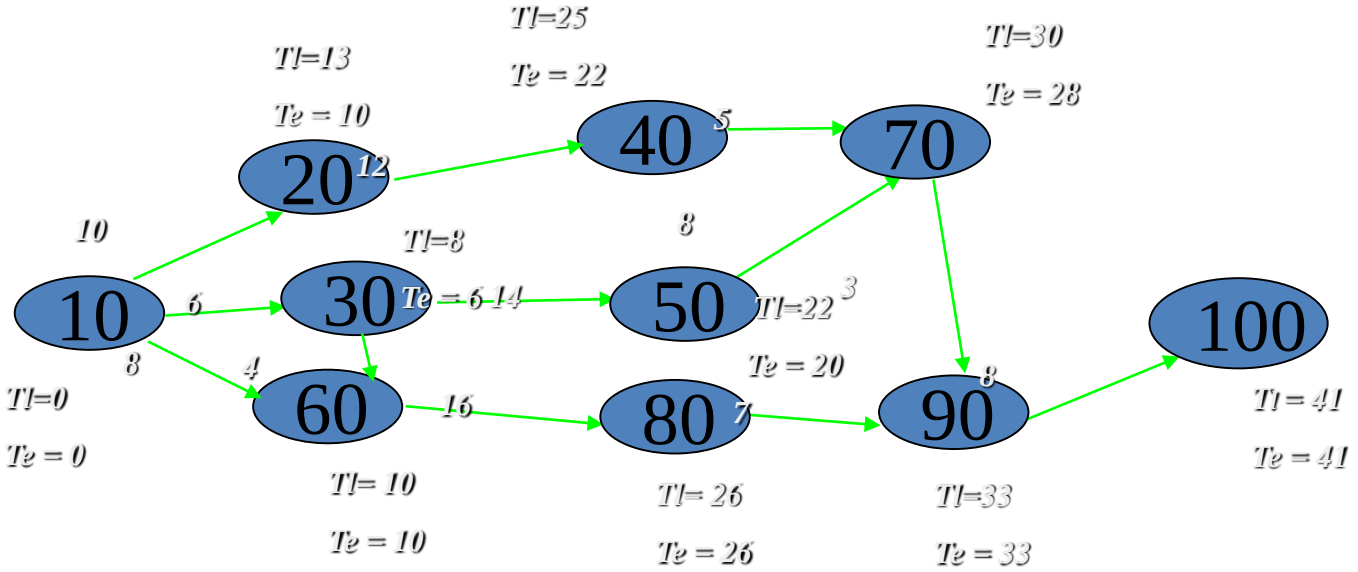
We calculate "Tl" in Backward pass.

Latest allowable occurrence time / Latest completion time (Tl).



We calculate "Tl" in Backward pass.

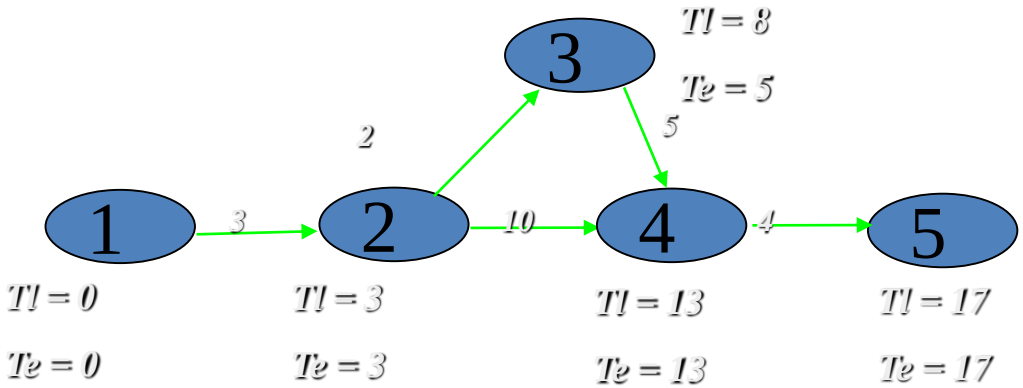
Example.



Nodes with Te = Tl form a critical path.

Critical path: Where Tl=Te

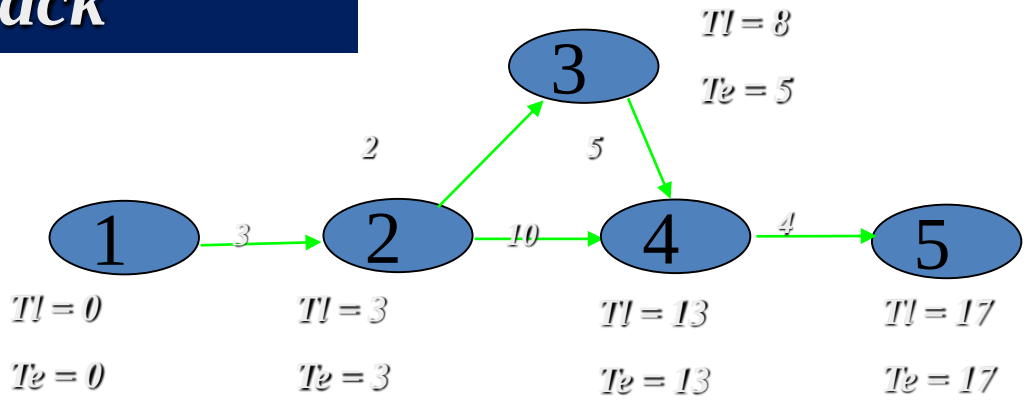
Slack - PERT



Critical path with zero slack

Node	Slack = Tl-Te
1	0
2	0
3	3
4	0
5	0

Slack



One can level men power and save cost also.