

PERT (Program Evaluation & Review Technique) Diagram

Lecturer 4

Pert Diagram

- A ***PERT chart***, sometimes called a ***PERT diagram***, is a project management tool used to schedule, organize and coordinate tasks within a project.
- It provides a graphical representation of a project's timeline that allows project managers to break down each individual task in the project for analysis.

PERT Diagrams : Basic Rules

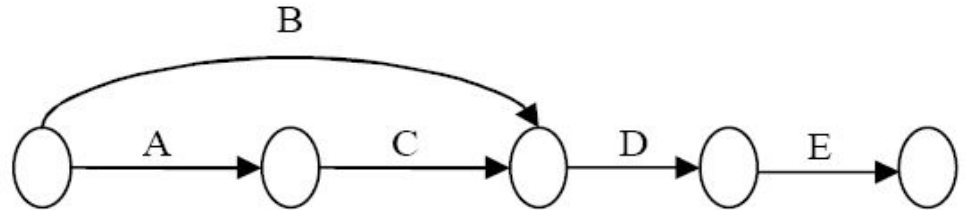
- Tasks are represented as arrows
- Nodes represent the start and finish points of tasks
- There is **only one** overall start node
- There is **only one** overall finish node



PERT Diagrams

Example of PERT diagrams:

Task	Precedence
A	
B	
C	A
D	B,C
E	D

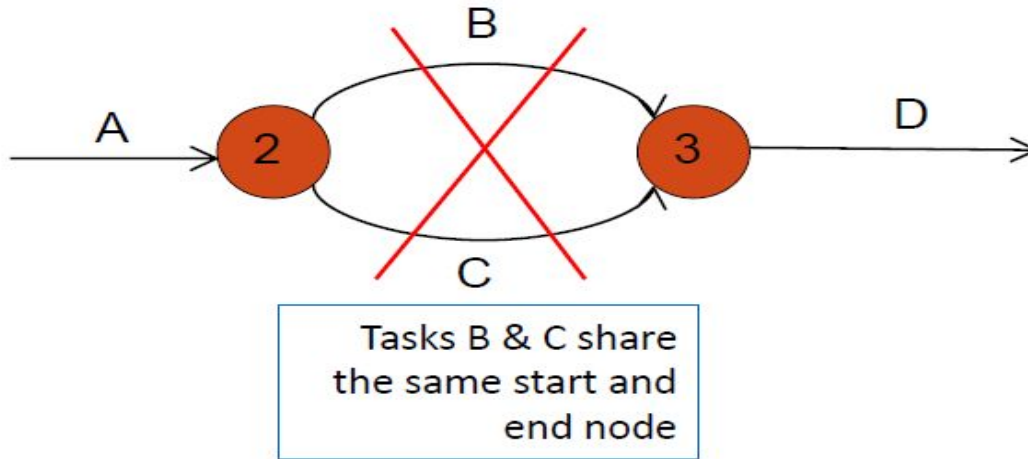


Dummy Activities

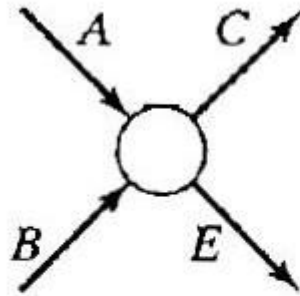
- ▶ Sometimes it is necessary to insert **dummy activities** (duration zero) in order to maintain the clarity of the diagram and the precedence relationships between activities.
 - ▶ In activity-on-arrow PERT diagrams, each activity **must be uniquely identifiable** by its start and end nodes.
 - ▶ However, sometimes multiple tasks have the same predecessors and successors.
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PERT Diagrams: Dummy Activities

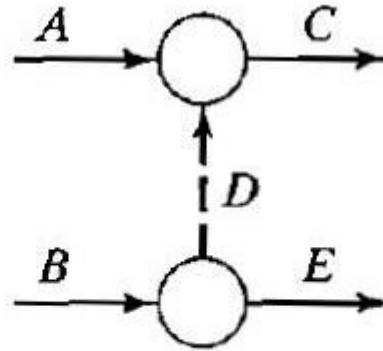
- ▶ Two tasks cannot share the same start and end node.



PERT Diagrams : Dummy Activities



(a)

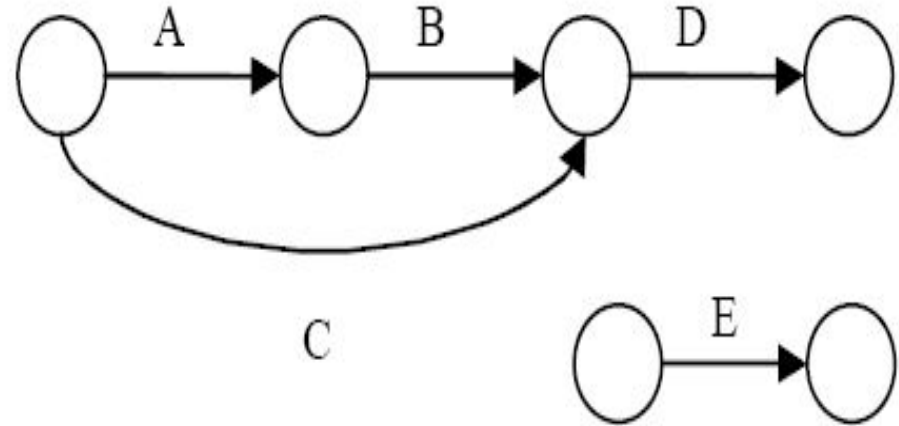


(b)

FIGURE Use of dummy activity to ensure correct precedence relationship

Dummy Activities

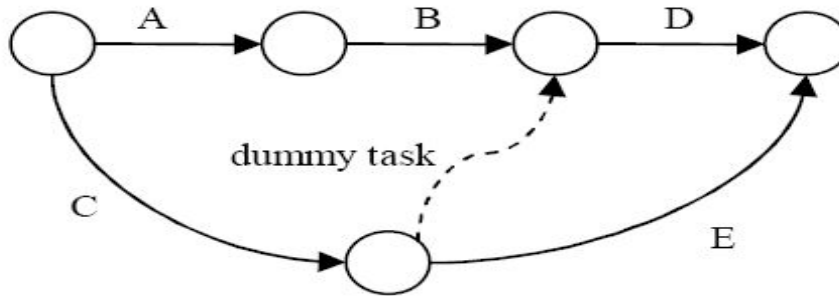
Task	Precedence
A	
B	A
C	
D	B,C
E	C



Dummy Activities

Correct Solution!

- ▶ The solution is to insert a dummy task so that the precedence of E is preserved and activity C remains uniquely identifiable.



Example

EXAMPLE 2

Develop the network for a project with following activities and immediate predecessors:

<u>Activity</u>	<u>Immediate predecessors</u>
A	-
B	-
C	B
D	A, C
E	C
F	C
G	D,E,F

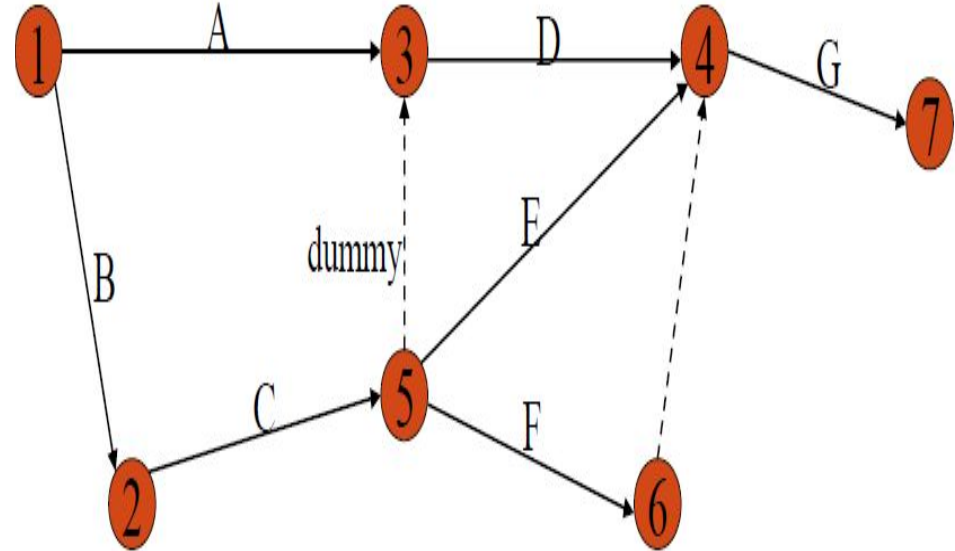
Try to do for the first five (A,B,C,D,E) activities

Solution

EXAMPLE 2

Develop the network for a project with following activities and immediate predecessors:

<u>Activity</u>	<u>Immediate predecessors</u>
A	-
B	-
C	B
D	A, C
E	C
F	C
G	D, E, F



Try to do for the first five (A,B,C,D,E) activities