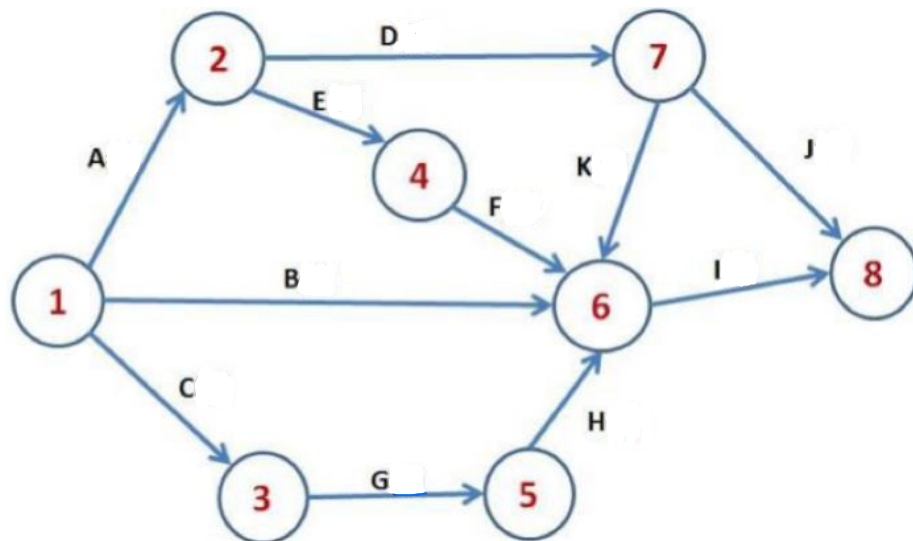


PERT CPM

JASPAL SINGH
(EX IES)



CONTENTS

1. PROJECT

2. PERT

3. CPM

4. CRASHING

5. UPDATING

6. AON NETWORK

PROJECT

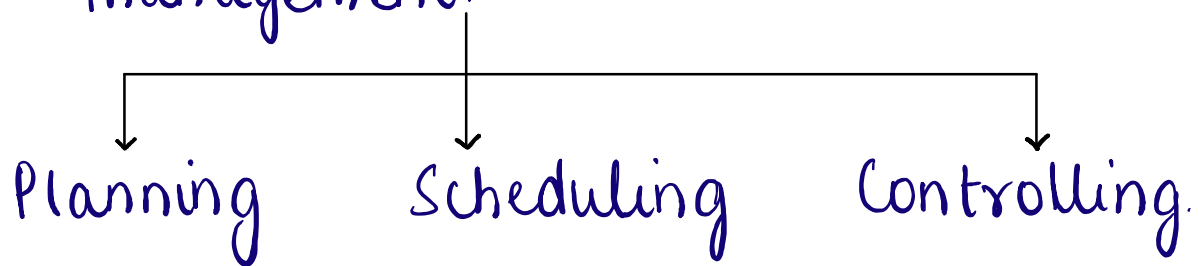


- Any work which we do is termed as Project.
- To execute the project, resources are required.
Ex : Manpower, machine (equipment), money, material, time.
- Engg. deals with technology where as project management deals with synchronisation of the technology with manpower.
- Every project has 3 - Basic objective.
 1. Project should be completed in least time.
 2. Project should be completed in least cost.
 3. Project should be completed by optimum use of resources that are available.

ELEMENTS OF PROJECT MANAGEMENT



- There are 3 basic elements of project management.



1. Planning

It is the process of defining objective of project and to identify resources required for its completion.

2. Scheduling

It is the process of arranging the objective define during planning in sequence and allocation of resources to these activities.

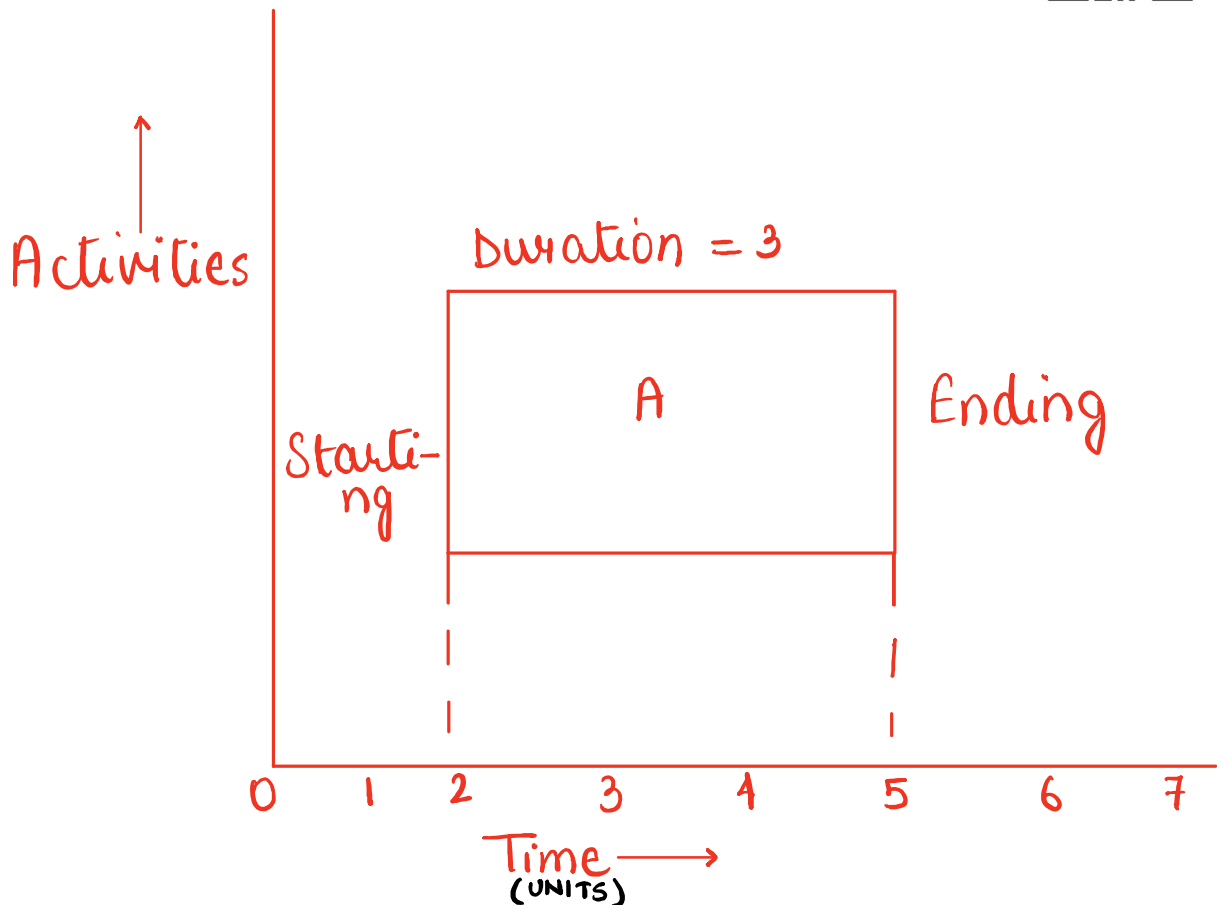
3. Controlling

It involves execution of planning and scheduling.

- If there is any deviation from original plan it also includes rescheduling.

METHODS OF PROJECT MANAGEMENT

1. Bar chart / Gantt chart



Bar chart is graphical representation of activity vs time.

- Here time durations are marked on x-axis &

Activities are marked on y-axis.

- Length of bar represents duration of activity.

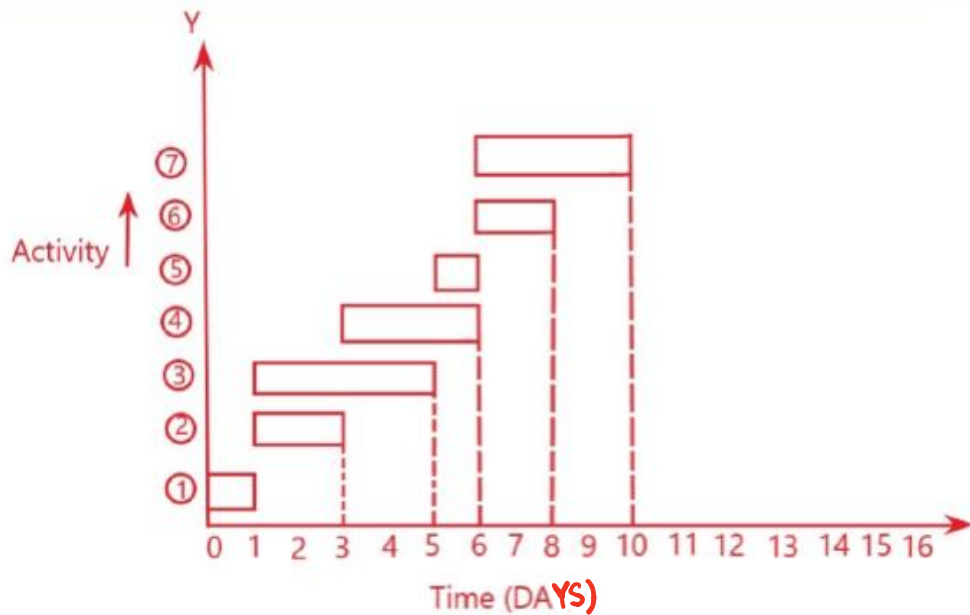
- Activities are shown with the help of bar.
- Start point of bar represents starting time of activity and end of bar represents finish time of activity.



Question : Draw a bar chart for certain project

Activity(No.)	1	2	3	4	5	6	7
Duration(days)	1	2	4	3	1	2	4

- Activities 2 and 3 can be done concurrently and both must follow Activity 1.
- Activity 2 must precedes activity 4.
- Activity 5 can not begin until both activity 2 and 3 are completed.
- Activity 6 and 7 can be started only after activity 4 and 5 completed.
- Find the project completion time.



Advantages of bar chart.

1. It is simple to draw and understand.
2. No skilled manpower is required.
3. It provides usual representation of the project, where starting and finishing can be observed clearly.

Limitations of bar chart.



(i). Lacks degree of details

(ii). Review of project progress. Hence, it is not used as tool for controlling the project. This drawback of bar chart eliminated by hatching the half width of the bar upto the extent it represent project progress.

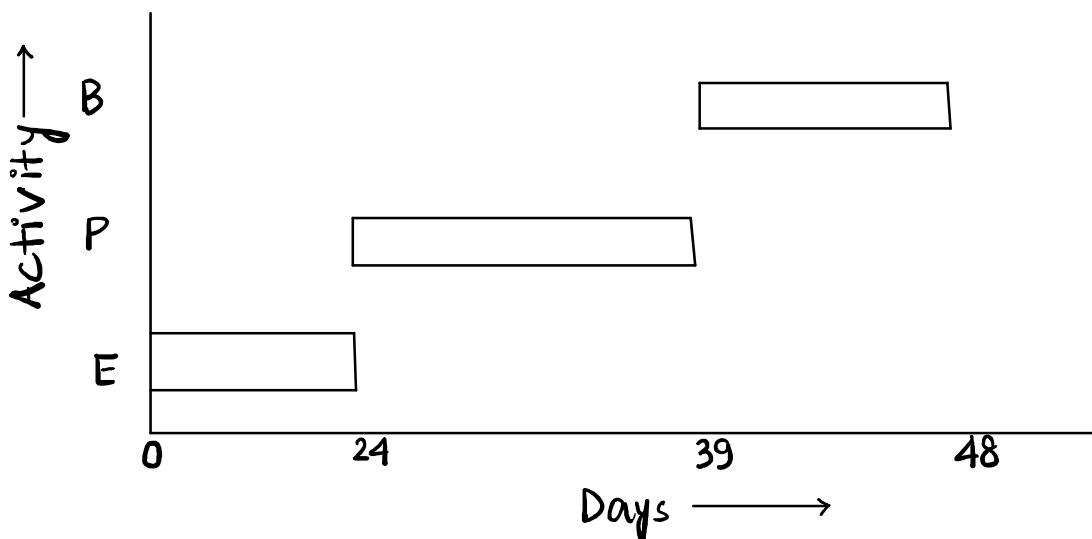
(iii) Activity Inter-relationship

Example: Project- laying of Pipeline

a) Excavation (24 days)

b) Placing the pipe line (15 days)

c) Backfilling (9 days)



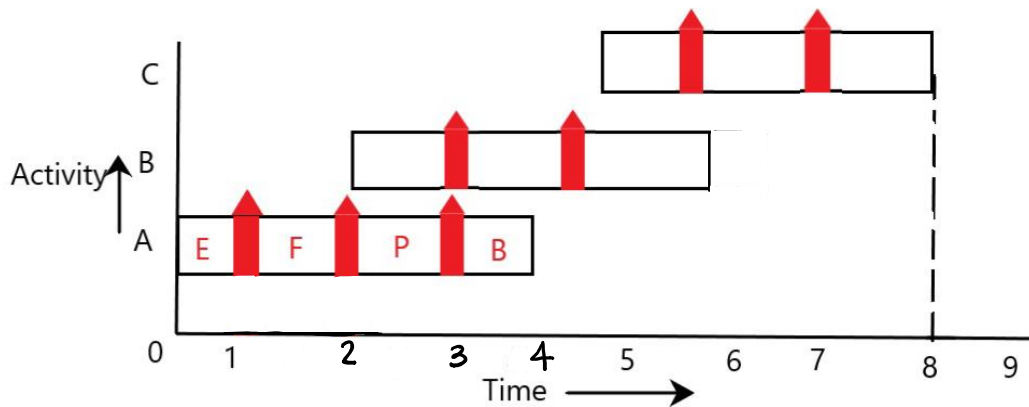
(iv) Time Uncertainty.



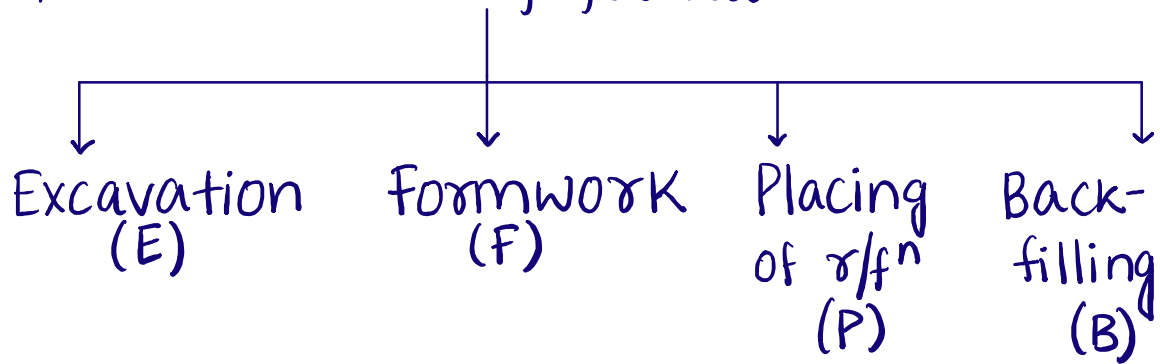
(v) No cost optimisation.

2. Mile Stone chart.

- It is an improvement of bar chart. In this case certain portion of the activity, that is completed in terms of mile stone.
- Milestone can be shown or drawn with the help of arrow, circle or square.
- Each milestone can be considered as an event of main activity.
- Here interrelationship between sub activities of a particular activity is established but different activities still not established.



A = construction of foundation.



NOTE:
Hence mile stone chart is event oriented
and bar chart is activity oriented.