

# Chapter Two

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# Bar Chart

# Bar charts

- In 1917 Henry Gantt developed a method of relating a list of activities to a time scale.

Bar charts are simple representation that show how major work activities are scheduled .

- The widespread use of bar charts can be attributed to the ease and its advantages:

allows one to grasp schedule information quickly and easily.

Time-scaled

# Bar charts (cont.)

- Some times bar charts fail to provide the type of information that is often so valuable for planning and scheduling so the disadvantages of bar charts are :

Don't show clear dependencies between activities .

- The actual status of the project cannot be readily determined.

# Other network modeling Technique

- There are two other network modeling technique that were developed independently ,but simultaneously:
- 1- the critical path method (CPM)
- 2- program evaluation and review technique (PERT)

# Critical path method

- In This technique, each activity is assigned a specific duration , and calculations , specific duration for the project as a whole.
- When reviewing CPM data, it is important to recognize the distinction between duration and event.

# Some definitions about CPM

- An event: is the point in time or an instant at which the status of completion of project or activity can be defined.
- Starting time: it is the point in time at which an activity can begin.
- CPM's: those chains of activities in the project that control how long the project will take.

# CPM

- There are two variations of CPM:

1- the traditional technique called Activity-on-Arrow (A-on-A) → arrow diagram.

2- Activity-on-node (A-on-N) referred to as the precedence diagram.

# PERT

- The major difference between the approaches is that PERT assumes that an activity's duration cannot be precisely predetermined.
- It requires the planner to specify three separate duration for each activity :
  - 1- the most likely
  - 2- the optimistic.
  - 3- the pessimistic duration estimates

# Work breakdown structure

- The work breakdown structure : is convenient way to group activities in a rational manner into work packages.
- In other words , the work breakdown structure divides and subdivides a project into different components.

# Reasons for planning and scheduling in construction

- Examine the trade-off between the time and cost required to carry out a project.
- Monitoring and control the project.