

Project Time Management

Learning Objectives

- Understand the importance of project schedules and good project time management
- Define activities as the basis for developing project schedules
- Describe how project managers use network diagrams and dependencies to assist in activity sequencing
- Explain how various tools and techniques help project managers perform activity duration estimating and schedule development
- Use a Gantt chart for schedule planning and tracking schedule information

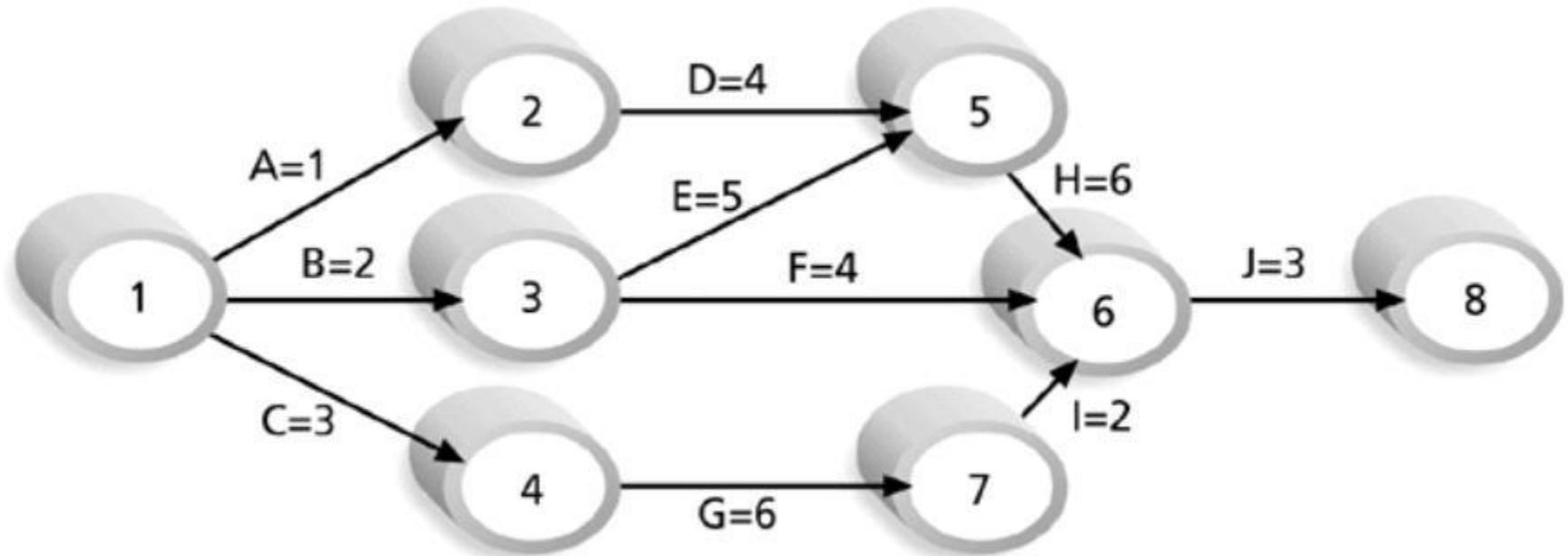
Learning Objectives

- Understand and use critical path analysis
- Describe how to use several techniques for shortening project schedules
- Explain the basic concepts behind critical chain scheduling and Program Evaluation and Review Technique (PERT)
- Discuss how reality checks and people issues are involved in controlling and managing changes to the project schedule
- Describe how software can assist in project time management

Project Network Diagrams

- Project network diagrams are the preferred technique for showing activity sequencing
- A project network diagram is a schematic display of the logical relationships among, or sequencing of, project activities

Figure 6-2. Sample Activity-on-Arrow (AOA) Network Diagram for Project X



Note: Assume all durations are in days; A=1 means Activity A has a duration of 1 day.

Arrow Diagramming Method (ADM)

- Also called activity-on-arrow (AOA) project network diagrams
- Activities are represented by arrows
- Nodes or circles are the starting and ending points of activities
- Can only show finish-to-start dependencies

Gantt Charts

- Gantt charts provide a standard format for displaying project schedule information by listing project activities and their corresponding start and finish dates in a calendar format
- Symbols include:
 - A black diamond: milestones or significant events on a project with zero duration
 - Thick black bars: summary tasks
 - Lighter horizontal bars: tasks
 - Arrows: dependencies between tasks

Milestones

- Milestones are significant events on a project that normally have zero duration
- You can follow the SMART criteria in developing milestones that are:
 - Specific
 - Measurable
 - Assignable
 - Realistic
 - Time-framed

Sample Tracking Gantt Chart

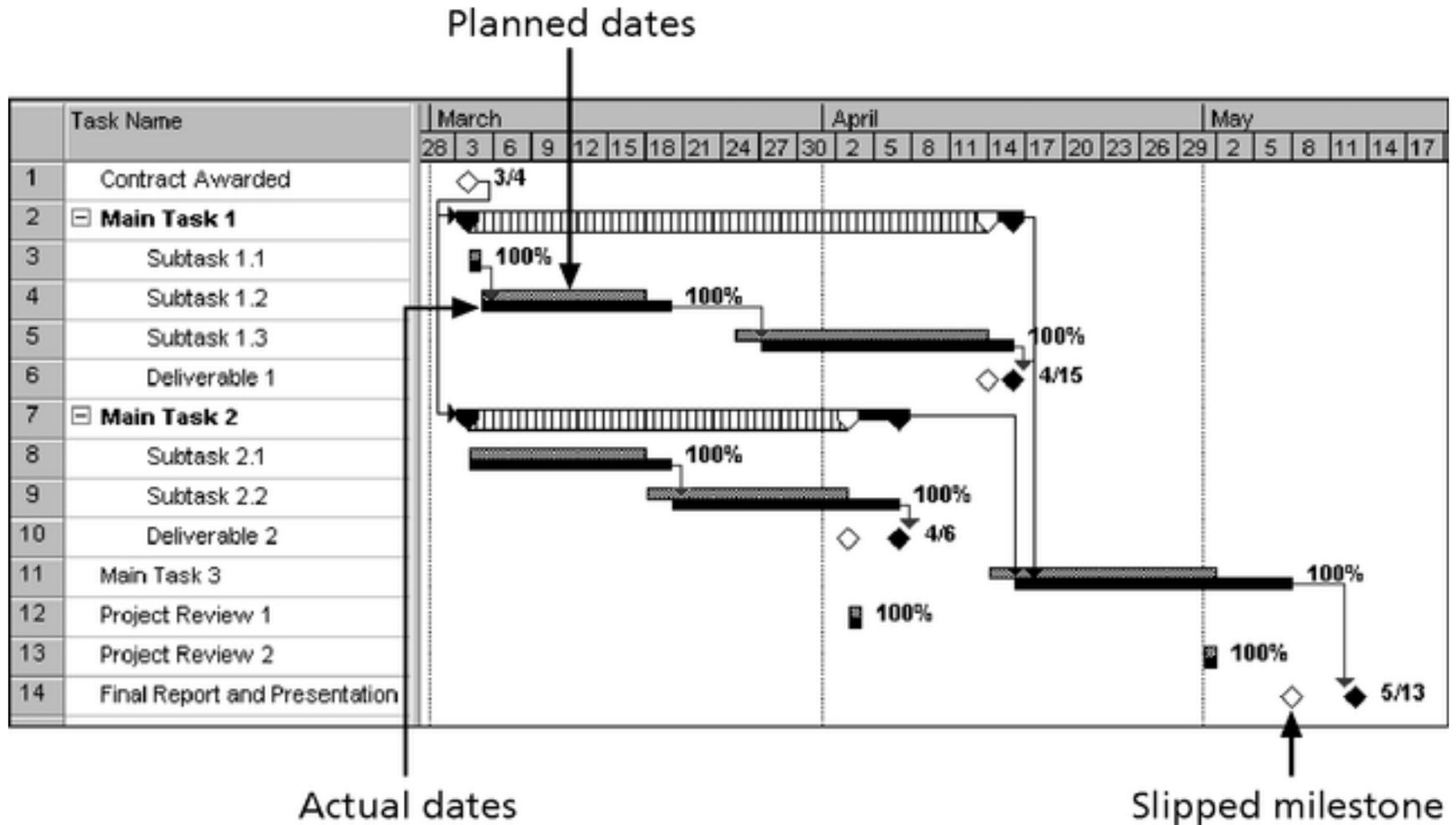


Figure 6-7. Sample Tracking Gantt Chart

Critical Path Method (CPM)

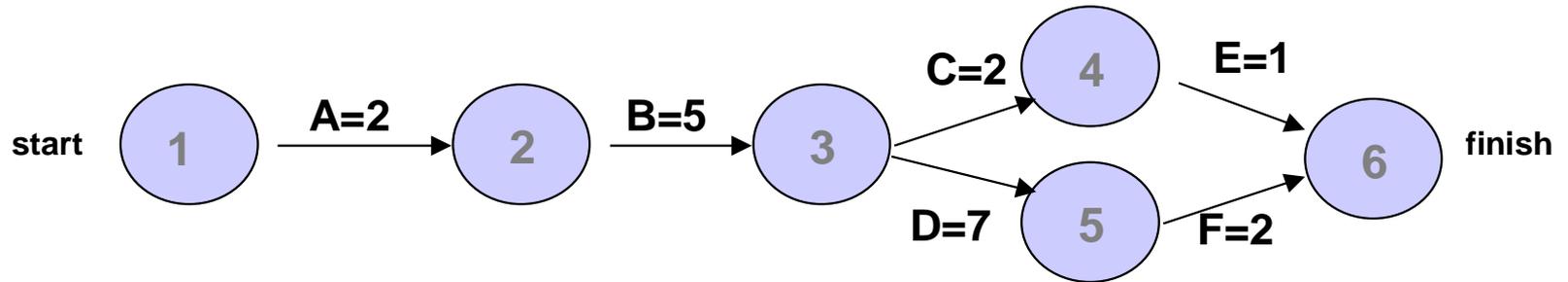
- CPM is a project network analysis technique used to predict total project duration
- A critical path for a project is the series of activities that determines the *earliest time* by which the project can be completed
- The critical path is the *longest path* through the network diagram and has the least amount of slack or float

Finding the Critical Path

- First develop a good project network diagram
- Add the durations for all activities on each path through the project network diagram
- The longest path is the critical path

Simple Example of Determining the Critical Path

- Consider the following project network diagram. Assume all times are in days.



- How many paths are on this network diagram?
- How long is each path?
- Which is the critical path?
- What is the shortest amount of time needed to complete this project?