

Managing Object-Oriented Projects: CPA

Chapter 21A

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In this Lecture you will Learn:

- Construct a small network diagram
- Understand the use of 'float' to improve resource management
- Identify project failure factors
- Suggest strategies for success
- Explain and justify the contents of a project plan

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Misunderstanding for Planning

- Two 'folk wisdom' sayings among Information System development people:
 - ◆ Failing to plan is planning to fail
 - ◆ If you can't plan it, don't do it



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Why Plan?

- Systems development is complex and dynamic
- May need to bid for resources
- Skills and careers
- Estimates and understanding the work
- Management and professionalism
- Meeting client requirements

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Why Plan?

- Failure can be spectacular:
 - ◆ LSE Taurus project
 - ◆ £480M
 - ◆ London Ambulance Despatch System
 - ◆ £43M (and suspicion of some deaths)
 - ◆ Mull of Kintyre Chinook crash
 - ◆ 29 dead, including high-ranking police and military intelligence officers
 - ◆ Pilots blamed by RAF Board of Enquiry, but many suspect software was at fault

What To Plan for

- Big Picture
- Tasks, dependencies and allocation to staff
- Control, performance management
- Quality
- Client liaison
- Procurement
- Installation, testing, training
- Contingency planning

What To Plan for

- Three slogans maybe sum it all up:
 - ◆ Plan for Success
 - ◆ Manage Change
 - ◆ Manage Risks



Creating and Managing a Plan

- Basic Techniques
 - ◆ Product (or Work) Breakdown Structure
 - ◆ Network Analysis
 - ◆ Gantt Chart
- Specify tasks, dependencies
- Estimate duration, cost
- Resource smoothing

Monitoring the Plan

- Regular control checks
- Report progress regularly to:
 - ◆ Project Manager
 - ◆ Project Board
 - ◆ Information System Steering Committee
- Exception and problem reports
- Corrective action

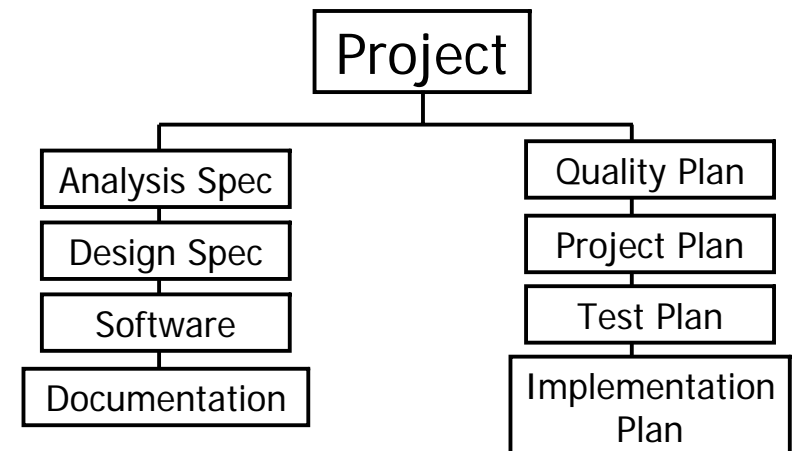
Resource Smoothing

- Level out human resources to avoid peaks and troughs of activity
- Typically done by rescheduling some non-critical tasks (i.e. tasks with float)

Worked Examples – PBS

- Product Breakdown Structure (PBS)
- A hierarchy of products or tasks
- Useful for:
 - ◆ Identifying tasks and products
 - ◆ Estimating total costs

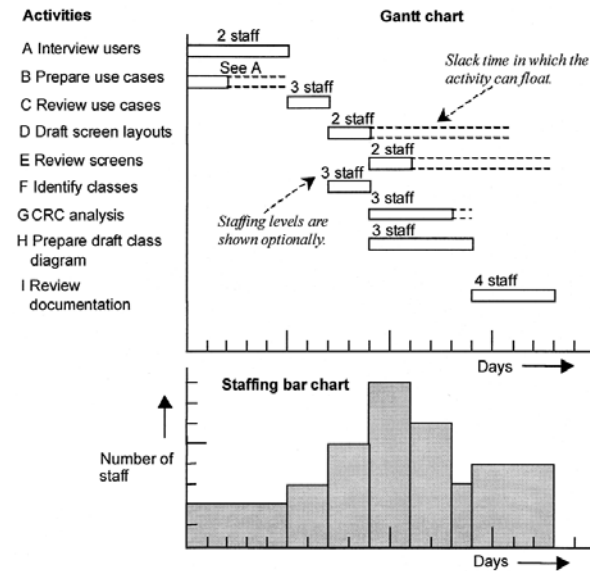
Product Breakdown Structure



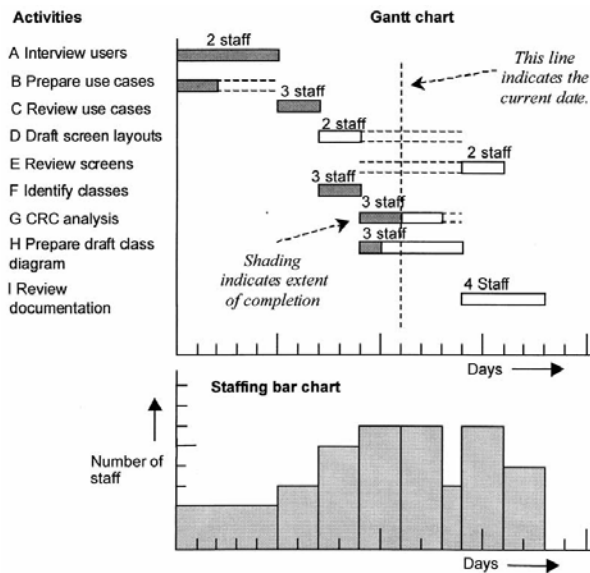
Worked Examples – Gantt Chart

- Gantt Chart (or common bar chart) shows sequence and time of tasks
- Useful for:
 - ◆ Overall plan of simple projects
 - ◆ Identifying need for smoothing
 - ◆ Monitoring progress

Unsmoothed Gantt Example



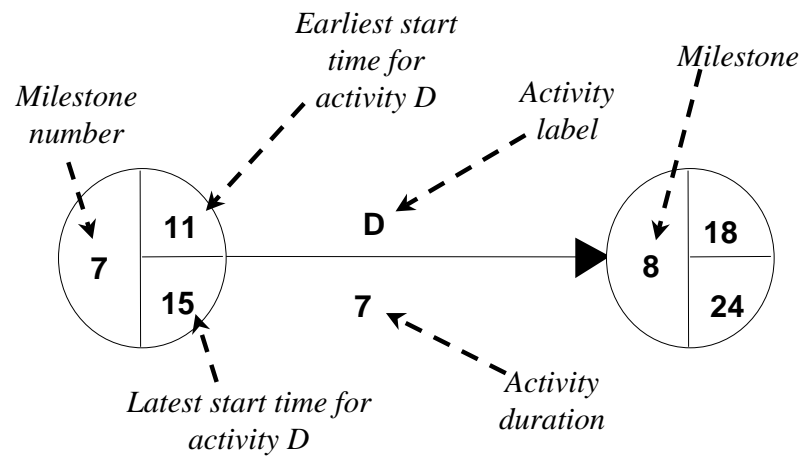
Smoothed Gantt Example



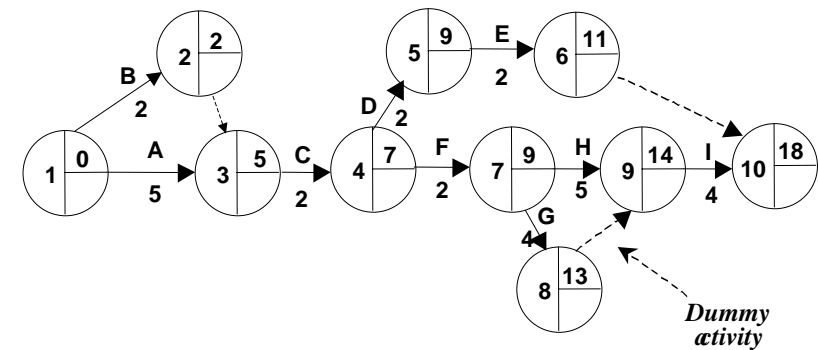
Worked Examples – CPA

- Network/Critical Path Analysis (CPA)
 - ◆ Also known as Program Evaluation and Review Technique (PERT)
- Useful for:
 - ◆ Scheduling complex projects
 - ◆ Finding overall project time
 - ◆ Identifying dependencies
 - ◆ Identifying critical tasks

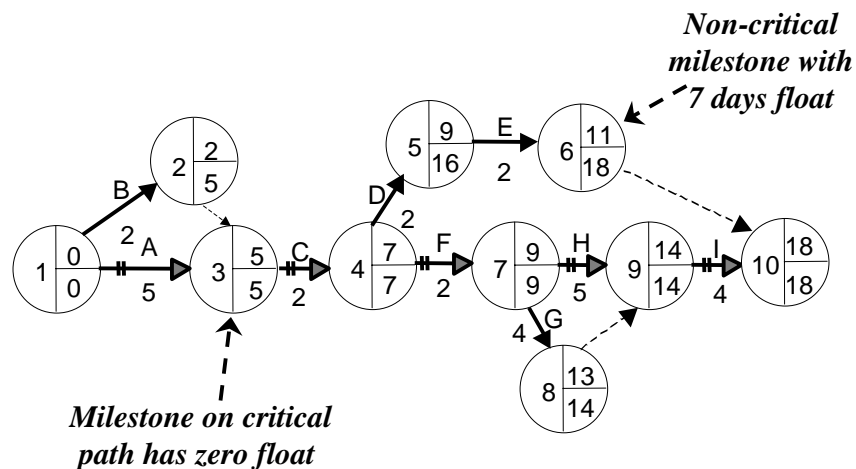
PERT Chart Notation



PERT Chart Illustration – Dummy Activities



PERT Chart Illustration



Constructing a PERT Chart

- Usually done in three stages:
 - ◆ Draw the network
 - ◆ Forward pass finds earliest finish time
 - ◆ Backward pass finds critical path
- Critical activities need more attention from project manager
- Delay in a critical task delays completion of the whole project