

Project Scheduling

- Why are projects delayed?
 - Simple under estimation
 - Changing requirements
 - Unforeseen human difficulties
 - Unforeseen technical difficulties
 - Miscommunication
 - Impossible or unrealistic deadlines
 - Failure to recognize slippage, no corrective action

Scheduling

- Activity of distributing resources and effort, across time and tasks
 - Schedules evolve over time
- 2 ways schedules are created
 - A strict end-date is handed down
 - A general time frame is given, software team sets the actual end-date

Guiding Principles

- Compartmentalization – break project into smaller manageable pieces
- Interdependency – identify sequential tasks and concurrent tasks

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- Compartmentalization – break project into smaller manageable pieces
- Interdependency – identify sequential tasks and concurrent tasks
- Time allocation – identify tasks, assign “appropriate” times, must have start and stop dates
- Effort validation – don’t allocate resources beyond your resource pool

Principles

- Defined responsibility – every team member needs to get a task, every task needs to be assigned
- Defined outcomes – each task should have a clear outcome (result) [usually a work product]
- Defined milestones – every task should be associated with some project milestone

People vs Effort

- As complexity increases, the # of people and effort increases
- Benefit from delaying a project
 - Fewer people required, some cost savings
- L = lines of code
- E = effort in person-months
- T = time in calendar months
- P = productivity (2k – 12k)
 - $L = P * E^{1/3} * T^{4/3}$
 - $E = L^3 / (P^3 * T^4)$

Effort Distribution

- 40 - 20 - 40 rule
 - 40% of effort spent on analysis and design
 - 20% of effort spent on coding
 - 40% of effort spent on testing

Scheduling

- Using tools and techniques to develop a “timeline” for a project
- 2 approaches:
 - PERT – program evaluation & review technique
 - CPM – critical path modeling (method)
- Estimate of effort
- Decomposition of functions
- Selecting models and tasks
- Decomposition of tasks

Requirements

- Determine the critical path – determines duration of project
- Establish “most likely” time estimates
- Calculate “boundary times” that define a window

Timeline Chart

- Also known as a Gantt Chart
- You can see all tasks
- Can see overlap of concurrent processes
- Can track progress

TOOLS

- AMS Realtime
- Microsoft Project – most widely used
- ViewPoint

<http://www.infogoal.com/pmc/pmcswr.htm>

Schedule Tracking

- Periodic status meetings
- Evaluate results
- Determine if milestones are met
- Compare start dates to end dates and durations
- Meet with team to get their assessment
- Do earned value analysis