Critical Path

“Pert” Charts

A Project Management Tool

• If you’re not doing Critical Paths, you’re not doing project management.
• Shows the time sequence of events, including parallel efforts.
• Determines length (calendar time) of a project.

Required Data

• List of Activities
• Activity Duration (best estimate)
• Sequential Activity Relationships
  – what precedes a task
  – what can be done at the same time
  – what follows a task
Output Information

• Activity and Project Completion Time
• Critical Path / Critical Activities / A delay here will delay the entire project
• Activity Slack – a single activity not in the critical path has extra time to complete

Advantages

• Shows activity relationships and dependencies
• Aids coordination of activities
• Facilitates contingency planning

Disadvantages

• Complex
• Time consuming
• Hard to Maintain
  – Project Management Tools (e.g. Microsoft Project) help
Pert Chart
• tasks a and b can start simultaneously
• task c can start after a is complete
• task d can start after b is complete
• c and d must complete before e can begin

How to...

Draw a Pert Chart for this job:

<table>
<thead>
<tr>
<th>Task</th>
<th>Title</th>
<th>Duration</th>
<th>Precedence</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>start</td>
<td>0</td>
<td>-</td>
</tr>
<tr>
<td>b.</td>
<td>think</td>
<td>1</td>
<td>a</td>
</tr>
<tr>
<td>c.</td>
<td>plan</td>
<td>2</td>
<td>b</td>
</tr>
<tr>
<td>d.</td>
<td>procrastinate</td>
<td>5</td>
<td>a</td>
</tr>
<tr>
<td>e.</td>
<td>assign to someone else</td>
<td>1</td>
<td>c,d</td>
</tr>
<tr>
<td>f.</td>
<td>hide</td>
<td>3</td>
<td>e</td>
</tr>
<tr>
<td>g.</td>
<td>finish</td>
<td>1</td>
<td>e</td>
</tr>
<tr>
<td>h.</td>
<td>grab credit</td>
<td>1</td>
<td>f,g</td>
</tr>
</tbody>
</table>
Critical Path = A, D, E, F, H    slack in B, C, G