



Université d'Ottawa · University of Ottawa

School of Electrical Engineering and Computer Science

ELG 5100: Software Engineering Project Management, Fall 2014

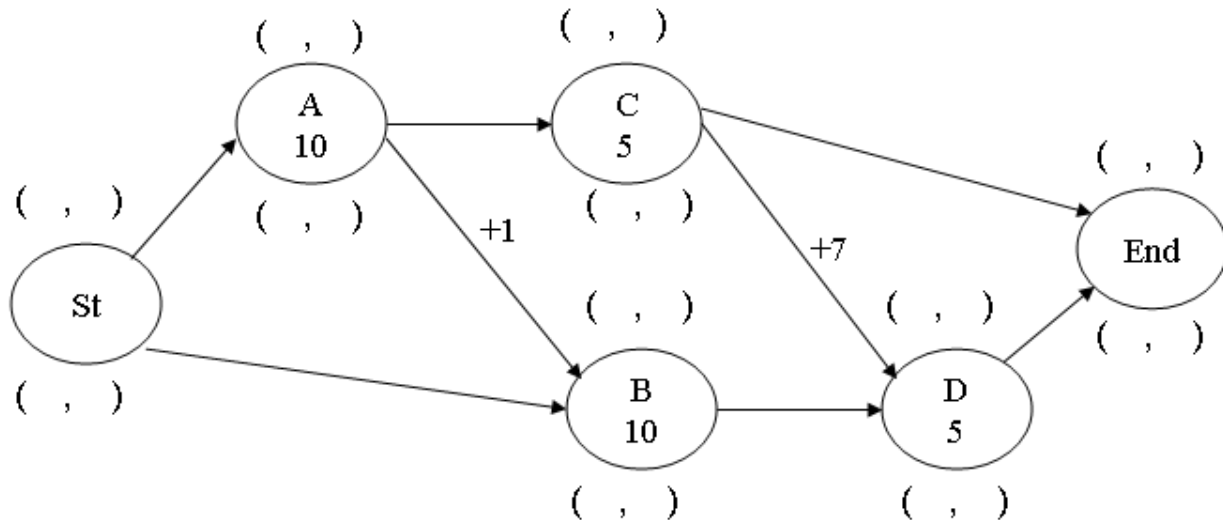
Assignment 1

Due: October 3 2014 via email to the TA

**Q1. (15 marks)** In your project planning as a Project Manager for Madeup Inc., you have reached a stage where you need to estimate the size of the most important component of the software to be built. You use three approaches for estimating, each of which gives you a different result: beta distribution (5000 LOC), Blitz (4000 LOC), and Delphi (3000 LOC). Assuming you use the Incremental and Iterative Development Process, explain which estimate you will use and why?

**Q2. (10 marks)** A Basic Semiattached software project has been estimated, using COCOMO, to require 200 staff-days. What is the size of this software? Given adequate resources, how long will it take to complete the development of this software? Finally, how many staff will you hire to finish this project in time?

**Q3. a)** In the network diagram below, activity durations and lag/lead times are given in months. Find the Critical Path, filling all the early and late start/finish times. **(20 marks)**



**b)** Use the table on the right and fast-track the above project as much as possible to find the shortest finishing time and the total extra cost. Assume idle staff cannot be assigned to other tasks, due to expertise limitations. **(15 marks)**

Activity	Maximum Crashing (months)	Cost per Month Crashed (\$)
A	0	N/A
B	3	1000
C	2	800
D	1	500

**Q4. (30 marks)** The following estimates are given by members of your development team for the next iteration:

<b><u>Task</u></b>	<b><u>Developer</u></b>	<b><u>Estimate</u></b>	<b><u>Dependency</u></b>
1. Finalize design of the AI engine	Mike	3 man-days	none
2. Implement AI component 1	Chen	7 man-days	1
3. Implement AI component 2	John	6 man-days	1
4. Implement frontend UI	Liu	5 man-days	none
5. Implement backend UI	Mustafa	10 man-days	none
6. Test AI	Nancy	3 man-days	2, 3
7. Test UI	Pierre	3 man-days	4, 5

Nancy and Chen will be on vacation in the first week of the iteration, and Liu is a part-time employee working 15 hours a week.

- a) Use Microsoft Project to schedule the iteration, coming up with the earliest finishing time. Include a screenshot of the Gantt chart with your answer.
- b) If iteration lengths are 3 calendar-weeks each, what can you deliver, from the above table, in this iteration?

**Q5. (5 marks)** In Software Project Management, what does the term “Death March” refer to? What is a rule-of-thumb for determining if a project is a Death March?

**Q6 (5 marks)** At the beginning of most software projects, detailed requirements are either not well known, or will change drastically by the time the final version of the software is released. Why then do we bother to go so carefully through all the stages of requirements gathering, WBS, estimation, planning, etc if we know things are going to change anyway?