



Université d'Ottawa · University of Ottawa
School of Electrical Engineering and Computer Science

ELG 5100, Fall 2014

Assignment 2

Due: Sunday November 16 2014 by email to the TA

Q1. The following Tracking data has been collected for a project as of month 25.

WBS Milestone	Planned Completion Date (month)	Actual Completion Date (month)	Planned Cost (\$)	Actual Cost (\$)
A	5	4	5,000	4,000
B	15	16	11,000	11,000
C	20	20	12,000	13,000
D	25	in progress	12,000	10,000
E	30		11,000	

Answer the following questions in terms of *Earned Value Analysis*:

- a) As a project manager, use CPI, SPI, and CR to give and justify your opinion about the progress of the project in terms of **i) budget ii) schedule iii) overall health** of the project.
b) If the current trend continues, when do you estimate the project to finish, and with what cost?

Q2. The table below shows parameters that were recorded during a software development project, and published at the end. The software ended up with 15,000 SLOC and required an effort of 300 man-days to develop.

Parameter	Value	Broken SLOC	Effort to Fix
Critical Defects	20 defects	500	5 man-days
Normal Defects	100 defects	5000	30 man-days
Improvements	20 defects	300	15 man-days
New Features	10 features	500	20 man-days
Usage Time	720 hours	N/A	N/A

Determine the following quality metrics

- a) Modularity
b) Adaptability
c) Maturity
d) Maintainability

Q3. You are the project manager for a team of 7 developers, and you have decided to use XP because of the small size of the team and the project. At the end of iteration 1, the following information has been collected for the total work done by each developer:

Developer	Original estimate	Actual time needed
Mike	3 days	5 days
Chen	7 days	10 days
Dan	6 days	10 days
Liu	5 days	8 days
Nancy	10 days	10 days
Mustafa	10 days	7 days
Pierre	8 days	9 days

- If 2-calendar-week iterations are used here, what is the project velocity? Assume there were no holidays (other than weekends) in iteration 1.
- You want to schedule iteration 2 from the work repository below. Using the project velocity from iteration 1, and assuming 1 long weekend (3-day weekend) in the next 2 weeks, which tasks will make it to iteration 2? Ignore actual assignment of the tasks to specific developers.

Task ID	Task	Original Estimate (days)
A1	Frontend UI Implementation	8
A2	Backend UI Implementation	10
B1	Selection Algorithm Implementation	7
C1	Computation Algorithm Implementation	9
D1	Reporting Module Implementation	5
D2	Networking Support	6
D3	Database Integration	6

Q4.

- What is the recommended maximum team size and iteration length for **i)** Scrum **ii)** Extreme Programming **iii)** Crystal method?
- If we want to use Scrum but our project requires a team of 50 people, can we still use Scrum? Why?