

## CS446102 Software Engineering Homework 2 (Individual)

(Notes) Students should hand in each report for each business trip. For those who did not attend the visit, they should deal with other tasks. Students who did not attend the business visit to Yahoo please finish part one. Students who did not attend the business visit to GSS please finish part two. **Total number of documents is two and please package them in a zip file.**

(註) 若有參加參訪的同學，請繳交該次參訪的心得報告。未參訪雅虎的同學，請寫第一部份，未參訪叻揚的同學，請寫第二部分。共繳交一份壓縮檔(內含兩份文件)，自行上傳並請參照最後的格式說明。

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### Part One: Scrum Project Proposal

Please write a proposal to design a 3-month project with Scrum. The content of the proposal requires:

- Introduction of your project
  - Motivation
  - Project detail
  - List and analyze the stakeholders
- Workload distribution
  - Number of involved people and their roles
- Methodology
  - Project workflow
  - Scrum workflow
  - Explanation in details
- Milestone
  - Work Breakdown Structure (WBS)

### Part Two: Software Quality with Six Sigma

In the class, we have learned about the concept of CMMI. On the other hand, there is also another quality measurement called "Six Sigma" which is usually used in the industry. The link below shows the relationship between them and how they can integrate to provide a standard for the execution of every project throughout its life cycle. <http://www.sei.cmu.edu/reports/05tn005.pdf>

After reading the article, please answer the following questions.

1. Describe Six Sigma for software in detail.  
Hint: [https://en.wikipedia.org/wiki/Six\\_Sigma](https://en.wikipedia.org/wiki/Six_Sigma)
2. There is a project called X-Project containing eight files. Table 1 shows the

information about lines of code for each file and number of defects in each file. Six Sigma can be applied to the software and ensure the quality. There are many tools for it. One of the tools is called DPMO.

a. Please describe what DPMO is.

Hint: <http://www.sixsigmadaily.com/dpu-dpmo-ppm-and-rtv/>

b. Please calculate the DPMO for this project.

c. What are the Sigma level and remarks for X-Project?

d. Every company pursues the world-class quality, which is the highest level of the sigma. Please explain your method to improve X-Project in detail.

**Table 1 Information of X-Project**

LOC	Number of Defects
1234	2
911	0
9527	6
5408	0
5566	0
7788	7
183	1
9453	6

**Table 2 Six Sigma Metrics in Software**

Sigma Level	DPMO	Remarks
6	3.4	World-Class
5	233	Significantly above average
4	6210	Industry average
3	66800	Industry average
2	308500	Below industry average
1	691500	Not competitive

### **Format**

You need to hand in two reports totally:

- <student\_ID-1.pdf>
  - <student\_ID-2.pdf>
- e.g., 104062615-1.pdf

These two documents should be packaged into <SE\_HW2\_student\_ID>.zip

E.g., SE\_HW2\_104062615.zip

**Notice**

**COPY will get zero!!**

**Deadline: May, 14, 23:59**

If you write a lot of words without any constructive ideas, you will get fewer score.

If there are some wrong-spelling, it will lead to the deduction of your score.

If you have any questions, please feel free to contact TAs 😊