10520CS446100 Software Engineering

Homework5

(Notes) For those who go the business visit to 富邦 on May 5, please take exercise of part 1 and group question. If you do not join the business visit, please do exercise of part 2 and group question.

(註)有出席參訪的同學，請完成第 1 部分。若沒有出席參訪，請完成第 2 部分。

Part I (40%)

Please give the feedback of the business visit to Yahoo. Detailed descriptions about what you've learned from this business visit are encouraged to get higher score. Photos or drawings may also be added. The report should be at least one page but no more than three pages.

請同學寫富邦金控的參訪心得，內容除了包含參訪時的所見、所聞、所學以外，若能寫下任何自己的想法，附上活動當天照片並且連結老師的上課內容，或是連結任何與本程相關的資訊尤佳 。內容至少一頁 ，最多三頁。

Part II (40%)

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

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-rty/

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

Group question (60%)

軟體開發流程有許多階段：需求分析、設計、實作、測試和維護。然而並非所有的開發流程都是依照這個程序，有許多其他的開發方法陸續被提出來，如 Scrum 會在實作部分功能之後回到需求分析，直到專案結束再進行測試和維護。在執行的過程中，我們可能會用到許多專案溝通的工具。

上課時有簡介過 Microsoft Project，是由微軟開發的一款軟體專案管理工具，可用於協助專案經理發展專案計劃、分配任務資源、追蹤專案進度、管理預算和分析工作量。

One Page Project Manager (OPPM) 為最近幾年流行且被業界公認為是簡單易用的最佳溝通專案績效的工具，它可以將原先大而複雜的專案簡化為單頁的表格，並且能具體表達專案中的各項任務及資源分配。

請選擇上述其中一種工具，回答題組一或題組二

一、 Microsoft Project

1. 請選擇一個程式專案（如之前寫過的 project、open source），並簡述此專案的用途與架構。(5%)

2. 請選擇一個軟體開發方法，簡述此方法（如定義、成員配置、執行流程）、說明為何選此方法。(10%)

3. 連結(https://www.tutorialspoint.com/ms_project/ms_project_create_new_plan.htm)附有 Microsoft Project 的 tutorial，請利用第二題選擇的開發方法來規劃第一題描述的程式專案，將專案分成三個摘要任務、規劃子任務填入甘特圖中、分配資源(負責人)、成本估算(35%)

4. 試舉出一個 OPPM 和 Microsoft Project 以外的專案溝通工具，並比較 Microsoft Project 與其之異同。(10%)

二、OPPM

1. 請選擇一個程式專案（如之前寫過的 project、open source），並簡述此專案的用途與架構。(5%)

2. 請選擇一個軟體開發方法，簡述此方法（如定義、成員配置、執行流程）、說明為何選此方法。(10%)

3. 附件(OPPM.pdf)提供了製作 OPPM 表格的步驟，請利用第二題選擇的開發方法來規劃第一題描述的程式專案，並將規劃依照步驟填入 OPPM 表格。(35%)

4. 試舉出一個 OPPM 和 Microsoft Project 以外的專案溝通工具，並比較 OPPM 與其之異同。(10%)

※註：OPPM 表格可以在 https://www.oppmi.com/index.cfm 下載

Format

You are required to hand in a pdf file. For example:

   SE_HW5_Group_0.zip
      SE_HW5_Group_0.pdf
      SE_HW5_105062550.pdf
      SE_HW5_105062551.pdf
      SE_HW5_105062552.pdf
      SE_HW5_105062553.pdf
      SE_HW5_105062554.pdf
      SE_HW5_105062555.pdf

1. **Deadline: 2017/5/20 20:00**

2. Font: 12pt, 1.5 lines

3. Language: Chinese or English

4. File type: pdf