Submitted by:

Tenzin dendup  u3149399

Individual reflective report – software engineering practice

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# Executive Summary

# Individual Self-assessment & Growth

From my current course at the University of Canberra, I have acquired technical skills both in terms of using software applications and also in software programming languages. I am comfortable using Office productivity suits, and Integrated Development Environments like Dreamweaver, Eclipse and Visual Studio. I also have intermediate skills in HTML, CSS and Java programming languages.

Learning these technical skills has mainly been on an individual level and I have not worked in a group to carry out software development activities. As such, I do not have any formal experience in software engineering processes and related skills like managerial and inter-personal skills.

In view of my skill level as describe above, I decided to enrol for the unit primarily to learn and experience:

1. software development lifecycle and methodologies,
2. tool and techniques for collaborative software development in a group
3. People management
4. Communication skills
5. Schedule management
6. Risk analysis and management

Professional software development is rarely an individual undertaking. Today, almost all the software development work is carried out by teams rather than individuals. Hence, the skills mentioned above are required if I am to succeed in my aspiration to become a software developer or an engineer.

Following are some of the specific skills that I gained throughout the unit:

1. Project scheduling in the planning phase – The unit highlighted various schedule representation techniques which takes care of duration of activity, to whom the activity is assigned and its dependencies. When my group first submitted the Initial group project plan, we are not able to make a satisfactory schedule because we did not factor in these aspects. I used the schedule representation technique to update an improved version of the project schedule which was included in the mid-semester report.
2. Better understanding of Personality Types – Understanding personality types and having a healthy mix of people with different personalities is found to be very important during the course of the group project. All the group members are task oriented. We were more concerned about doing the individually assigned tasks rather than looking at the overall project scope and goals. I personally made an effort to initiate communication between group members, both online and face to face, to discuss general project progress and issues.
3. Communication skills – Working on a group project with people we have never met before is hard. It becomes harder when the common language all the members speak is not our first language. In an effort to improve my social and communication skills, I proposed and initiated our line of communication which included online instant messaging, face to face meeting on weekends and other meetings to practise group presentations.
4. Report Writing skills – As the person assigned with the task of preparing and writing the group report, I had to learn how to write professional and formal reports. I used the skill I gained to write the mid-semester and final group report and this individual report. I am glad I could improve my writing skills as I can use it in other units and also in work environment after completion of the course.
5. Risk Management – With better understanding of risk management processes like identification, analysis, planning and monitoring, the group was able to come up with an improved risk management strategy in the mid-semester report. Risk identification during the project development was also easier and clearer though the size and scope of the group project did not cover extensive risks.
6. Importance of version control system – Having a version control system to manage software code in collaborative software development is very important. Though the group decided not to use version control in our project (because of group members’ inexperience with version control), I quickly realized its importance once it became difficult to merge individual works together in the project.
7. Deployment to Production – I used software building and deployment skills to deploy the group project on a server on Amazon Web Services. This task entailed building, configuring and deploying a dotnet application on a public server.

At this point of the unit, apart from the above mentioned skills, I have acquired an understanding of various concepts and skills, some of which are not directly applied to the group project. They are:

1. A general understanding of the software engineering cycle
2. Agile development methodologies
3. Software engineering ethics
4. Change management
5. System security
6. Software testing and
7. Software reuse

While there are many aspects of software engineering discipline in which I would like to improve and have practical experience if possible, I would like to highlight the following specific areas which I feel are important in actual work environment:

1. Hands on experience in Agile development methodologies: Agile is considered the standard methodology in most of the software development projects. Practical experience and skill in agile is therefore considered necessary requirement. I could get this skill by attending Agile courses or working as an intern in a company that uses agile.
2. Improve Communication and group work skills: As mentioned above, the software development is carried out as a group endeavour. To be able to work in such environment, communication and group work skills are essential. One potential way to gain this skill could be through participating in more group works in my course at University.
3. Software Reuse: A software product is not always built from scratch but existing software components are reused to save cost and effort. I would therefore like to learn software reuse in little more detail. Taking an advanced software engineering course might help me acquire this skill.
4. Effort estimation: During the group project, I have not been able to properly estimate effort required to implement a task. This has resulted in the group project’s schedule being estimated mostly based on consensus amongst the members. I would like to acquire more experience in effort estimation techniques.

# What I did well in the Group Project

Personally, I was involved more in preparing the group project plan, project reports, arranging group meetings and deploying the final product on a public server.

I was able to come up with a fairly tidy project schedule with enough room to accommodate change. This was also helped by the fact that we chose to do a website as our project. I feel I also did well in managing and arranging group meetings for regular status updates, reminding the group members on upcoming deadlines and arranging time for the group to practice presentations. This has helped the project be on track.

# What I could have done differently in the Group Project

One main thing that I could have done differently is the planning phase of the project. The group wasted some time unable to decide what to do for the project. I think I should have put in a little more effort in arranging few more group meetings which could have resulted in less time being wasted in the beginning of the project.

Another is the decision on use of version control. If the group has spent some time learning a version control system, we would have been able to work more effectively with less issues in integrating each other’s work.

# How else could I use things I have learnt in the unit