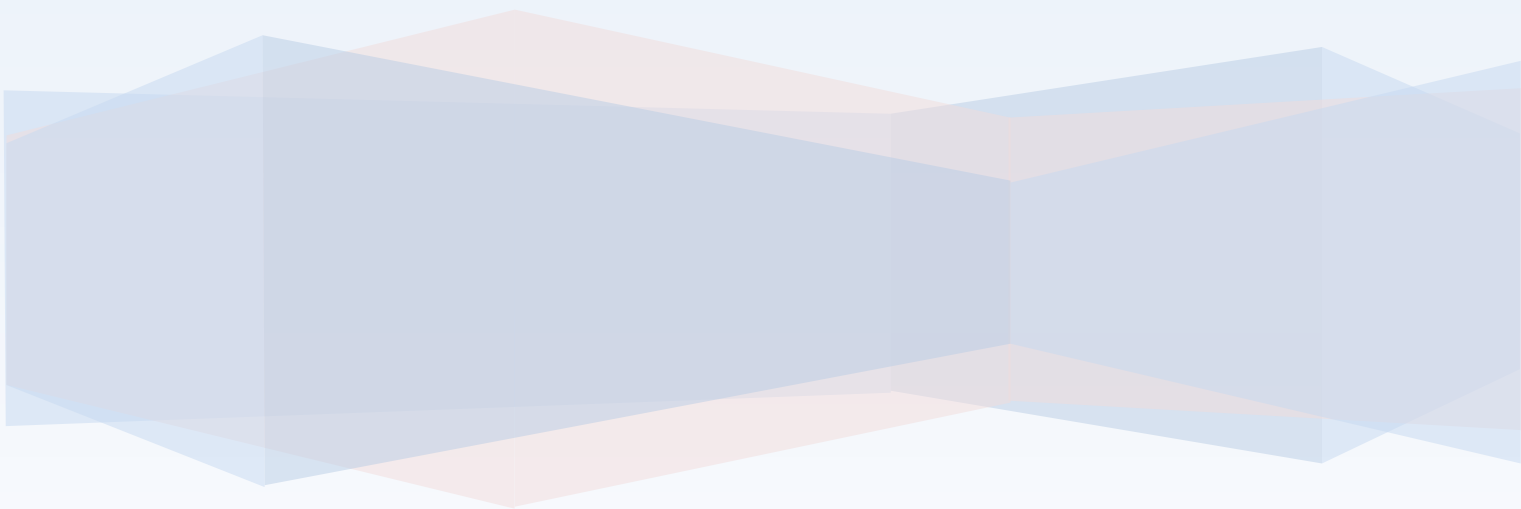


SWE20001 – Development Project 1: Tools and Practices

Learning Summary Report

Aldalton Choo Chien Khin (101212783)



Self-Assessment Details

The following checklists provide an overview of my self-assessment for this unit.

| | Pass (D) | Credit (C) | Distinction (B) | High Distinction (A) |
|----------------------------------|-------------|---------------|--------------------|-------------------------|
| Self-Assessment (please tick) | | ✓ | | |

Self-assessment Statement

| | Included (please tick) |
|--|------------------------|
| Learning Summary Report | ✓ |
| All Pass Tasks signed off in Doubtfire | ✓ |

Minimum Pass Checklist

| | Included (please tick) |
|---|------------------------|
| Pass Tasks done, and Progress on Credit Tasks | ✓ |
| All Pass Tasks signed off in Doubtfire | ✓ |

Minimum Credit Checklist, in addition to Pass Checklist

| | Included (please tick) |
|--|------------------------|
| Credit and Pass Tasks done, and Progress on Distinction Tasks. | |
| One or both of the Final Project reports - meeting Distinction standards | |
| Final Project meets Distinction criteria | |

Minimum Distinction Checklist, in addition to Credit Checklist

| | Included (please tick) |
|--|------------------------|
| All Tasks (P/C/D/HD) signed off in Doubtfire | |
| Portfolio consisting of research report (if applicable), and associated pieces | |
| At least two of the three reports (the Final Project reports + Research report) - meeting High Distinction standards | |
| Final Project meets High Distinction requirements | |

Minimum High Distinction Checklist, in addition to Distinction Checklist

Declaration

I declare that this portfolio is my individual work. I have not copied from any other student's work or from any other source except where due acknowledgment is made explicitly in the text, nor has any part of this submission been written for me by another person.

Signature: _____

A handwritten signature in black ink, consisting of a stylized 'A' followed by a horizontal line and a small flourish.

Introduction

This report summarises what I learnt in SWE20001 Development Project 1 – Tools and Practices. It includes a self-assessment against the criteria described in the unit outline, a justification of the pieces included, details of the coverage of the unit's intended learning outcomes, and a reflection on my learning.

Overview of Pieces Included

This section outlines the pieces that I have included in my portfolio...

1. Pass task 1
 - Pass task 1.1: Team Formation and To Do Process
 - I was asked to find 2 other friends to make a group and complete the task given in the lab as a group
 - Pass task 1.2: Slack
 - I was asked to try slack for the first time with my group members
 - Pass task 1.3: Team Scenario Discussion
 - My group was given a few scenarios and we were asked to discuss together on how we would provide a solution to each scenario
2. Pass task 2
 - Pass task 2.1: Version Control with Git
 - We were asked to use GitHub to store the card game that was given to us to be fixed and enhanced.
3. Pass task 3
 - Pass task 3.1: Wikis and Design Documents
 - We were asked to create a wiki page on GitHub about the chess game that we were planning to make.
4. Pass task 4
 - Pass task 4.1: Battleship Project Meeting
 - We were asked to have our first meeting for the Battleship project where we had to find a way to convert the Battleship VB Code to C# code
5. Pass task 5
 - Pass task 5.1: Battleship Project Meeting
 - We were asked to have our second meeting for the Battleship project where we split the task to convert, document and test the battleship code if it is working as intended. We were asked to use Trello to manage the tasks and Toggl to track the amount of time we spend on the Battleship Project.
6. Pass task 6
 - Pass task 6.1: Battleship Sprint
 - We were asked to have our first sprint for the Battleship project. We were asked to conduct daily scrum meeting to check up on each other's progress for the Battleship project by using Slack.

7. Credit task 6
 - Credit task 6.2: System Modelling
 - We were asked to design a domain model, explain what models in software development project are, explain what common and domain vocabulary is, design a UseCase, design a Class Diagram based on the scenario given and design an Activity Diagram based on the UseCase that we designed.
 - Credit task 6.3: Version Control
 - In this task we were asked to research what is version control and discuss about the various version control available and how are they different amongst each other. We were then asked to explain how does version control work. Lastly, we were asked to compare 3 different version control software and state each of their advantages and disadvantages
8. Pass task 7
 - Pass task 7.1: Sprint Retrospective
 - We were asked to have our first Sprint Retrospective as a group for the Battleship project where we looked back on our first battleship sprint and discussed what can be added to enhance the Battleship game and search for any problems or mistakes during the sprint and reflect on them.
9. Pass task 8
 - Pass task 8.1: Battleship Sprint 2
 - We were asked to conduct our second sprint for the battleship project where we discussed about what can we improve more on the battleship project since most of the bugs are solved. We then split the tasks evenly and conducted daily scrum meetings on slacks to check on each other's progress.
10. Pass task 9
 - Pass task 9.1: Sprint 2 Retrospective
 - We were asked to have our second Sprint Retrospective as a group for the Battleship project where we looked back on our second battleship sprint discussed what can be added to further enhance the Battleship game and search for any problems or mistakes during the sprint and reflect on them.
11. Pass task 10
 - Pass task 10.1: Unit Testing
 - For part 1 of the task we were asked to conduct a unit testing based on the function given to us and fix the function accordingly to meet the expected outcome of the unit testing method. For part 2 of the task, we were asked to create a unit testing method for the Battleship project to make sure each function is working as intended and if any bug is found during the unit testing we were asked to fix it.

Coverage of the Intended Learning Outcomes

This section outlines how the pieces I have included demonstrate the depth of my understanding in relation to each of the unit's intended learning outcomes.

ILO 1:

Explain the lifecycle of a software development project, and describe associated objectives of different activities.

The following pieces demonstrate my ability in relation to this ILO:

- Pass Task 4.1: In this task we were asked to have our very first meeting for the battleship project where we had to plan and discuss ways to convert the Battleship from VB code to C# code. I believe this task helped me to achieve ILO 1 because planning is part of the early stages of a software development project lifecycle and I believe the aim for this activity is to provide a backbone for the project so that we can carry on our next software development stage as planned.
- Pass Task 7.1: In this task we were asked to have our very first sprint retrospective after our first sprint process for the battleship project. This task has helped me to achieve ILO 1 because this activity basically marks that my groupmates and I are in the middle stages of a software development project lifecycle. I believe the aim of this activity is to ensure that my groupmates and I reflect on the changes that we have made on the battleship project and make sure that everything done up till now is according to plan.
- Pass task 10.1: In part 2 of this task, I was asked to create a unit testing method for any function of the battleship project to make sure that it is working as intended. This task has helped me to achieve ILO 1 because this activity indicates that the battleship project lifecycle is almost reaching its end. I believe the aim of this activity is to test out the battleship project to make sure that it meets the objectives of the battleship project and the battleship project can run with zero bugs.

ILO 2:

Apply techniques to analyse, document, extend, and test an existing software solution.

- Pass task 3.1: In this task I was asked to create a wiki page on GitHub with my groupmates about the chess game that we were planning to make. This task helped me to achieve ILO 2 because it has taught me to analyse how the chess game should work and then document the result on the GitHub wiki page like the purpose of the chess game, the function of the chess game and so on. My groupmates and I also included a list of extension that we can add to the chess game on the wiki page.
- Pass task 4.1: In this task my groupmates and I are asked to analyse the battleship project given to us and find ways to convert the battleship project from VB to C# code. This task helped me to achieve ILO 2 because it has taught me how to analyse the battleship project to find if it has any bugs, any functionality missing and so on. This task also taught me how to document the result of our findings as we created a wiki page and stored the list of bugs and functionality missing on the wiki page.
- Pass task 10.1: In this task I was asked to create a unit testing method to test any function in the battleship game to see if the specified function is working as intended. In this task I was given two different choices to test for the battleship project either use the Xamarin IDE or the Visual studio IDE and I decided to go with Visual Studio because it is the only IDE I have on my personal computer. I had no idea how to do unit testing on this version of Visual Studio because it is the 2019 version as to compared to the one in the university's open lab which is 2010. So, I had to do my own research on how to conduct unit testing on the Visual Studio 2019 version and because of this I learned a new technique on how to conduct testing on the battleship project as I managed finish the pass task 10. This is the reason why I think this task has helped me achieved ILO 2.

ILO 3:

Utilise contemporary software development tools for version control, issue tracking, documenting software designs, and unit testing; and explain their role in a software development project.

- Credit task 6.3: In this task I was asked to write a report on the various version control systems available in the market. I believe this task has help me achieved ILO 3 because I had to conduct various research on the web about what version control is for example there are 2 types of version control which is centralized version control system and distributed version control system. Other than that, while conducting my research for the report about version control, I learned that version control plays an important role in a software development project as it helps to keep track of issue tracking because every time someone commits a certain changes to the repository there is a time stamp stating when is it committed and this is really beneficial to a software development team. Another reason why version control plays an important role in software development is because it helps to prevent merge conflicts to happen and this in return will help save the software development team a lot of time and money trying to fix the merge conflict.
- Pass task 6: In this task my groupmates and I were asked to conduct a sprint process on the battleship project. This task has helped me achieve ILO 2 because we were asked to use Slack to conduct our daily scrum meeting. Slack plays an important role in our battleship project as it is our main communication method. During our scrum meetings, each member of our group would share with the team about what they have achieved for the day and if they have any issues with any part of the battleship project they can share it with the group and we will try to solve it together as group. Slack has made issue tracking a non-issue during the battleship project for my group as it keeps a timestamp of when a message is sent and every time an error appears we can just refer back to Slack to see who is responsible for the task that caused the error, and this helped save time to fix the error.

ILO 4:

Apply and use tools and techniques to work effectively as a member of a software development team and reflect upon group work experience.

- Pass task 8: In this task we were asked to do the second sprint process for the battleship project. This task helped me achieve ILO 4 because we were asked to use Trello to create a list of tasks that is needed to be done before this week's second sprint process is over. If the task has not started yet, then the card containing the task is put on the To-Do section and if someone is currently doing a task, then the card that contains that task will be put into the Doing section. Once someone is done with a task, the card that contains the task will be moved to Done section. This has helped working as a team in the battleship project much more effective as everyone in the group won't mix up the task given to them. Trello also helped me to work effectively as a member of the battleship project by helping me not waste time doing a task that is currently being done by someone. The reason for this is because when I see a task on the Doing section, I won't bother with it instead I will take a different task from the To-Do section where clearly all the task on that section has not been started yet.
- Pass task 9: in this task we were asked to do the second sprint retrospective for the second sprint process conducted in week 8. This task helped me achieve ILO 4 because we were asked to discuss as a group and mention our experience working with each other during the second sprint process. Through sprint retrospective 2, we were also able to reflect about what task that we have done and contributed individually to the battleship project and try to improve the on the mistakes that each of us has discovered about ourselves during the second sprint. Other than that, through the second spring retrospective we were able to reflect upon the extensions that we have added to the battleship project and come up with new ideas about what type enhancements or improvements can be further added to battleship project and this helped us to work with each other more effectively as brainstorming together is much better than doing the brainstorming for new ideas alone.

Reflection

The most important things I learnt:

The most important things that I have learned from this unit is about how to work together as a team. This unit has taught me about how important it is to communicate with your teammate and rely on them as they can help you in the areas that you are weaker in. Other than that, this unit has taught me the importance of writing a proper documentation for your code. This is important because it helps other people to have a much easier time to understand the code you are writing and help them understand it better. This unit also taught me about the importance of version control and why we need it as a software development team. Version control is important because it helps a software development team to avoid merge conflicts. Version control also allows two or more developers to work on the same project at the same time which helps save time and cost when working on a project. Overall, I am satisfied with what I have learnt from this unit and all the expectations that I have for this unit has been met.

The things that helped me most were:

One of the things that helped me the most were online resources. Websites like google, Stack Overflow and Reddit has helped me out a lot when I have trouble understanding a concept or when I have trouble fixing the errors in my code. The community on Reddit and Stack Overflow has been friendly and supportive and would always answer the questions that I posted up on the websites. Other than that, my lecturer for this unit which is Dr Lau has helped me out a lot when I have trouble with this unit. She would always answer the questions that I present to her about the unit in a manner that I can understand easily and for this I am grateful for all the help that Dr Lau has provided to me. Other than that, my friends are also one of the things that helped me when I have trouble with this unit. They would always answer my questions regarding this unit and help me to improve the areas that I am weaker in for this unit.

I found the following topics particularly challenging:

One of the topics that I found particularly challenging is the topic about version control system. I find it challenging because there is a lot to read and understand about version control as there are different types of version control systems and each has their own advantages and disadvantages. Other than that, merge conflict is also a topic that I find difficult because I am not familiar with the ways to fix merge conflicts as this is my first-time using Git Hub to store a group project.

I found the following topics particularly interesting:

One of the topics that I found particularly interesting is unit testing. I found this topic interesting because I think it's a more convenient way to test the code that you are writing for any bugs or errors before releasing it to the public. Other than that, through unit testing I felt that I can understand better how a function in a code should work and discover new ways to manipulate the code so that it will function in the way I want. Another topic I found interesting is the sprint retrospective topic. This is because through sprint retrospective, I can recognize the mistakes that I have made during the sprint processes and able to receive feedbacks from my teammate on what they think I should improve on and so on. I believe through the sprint retrospective process it can help me to improve as a software developer and as a person overall.

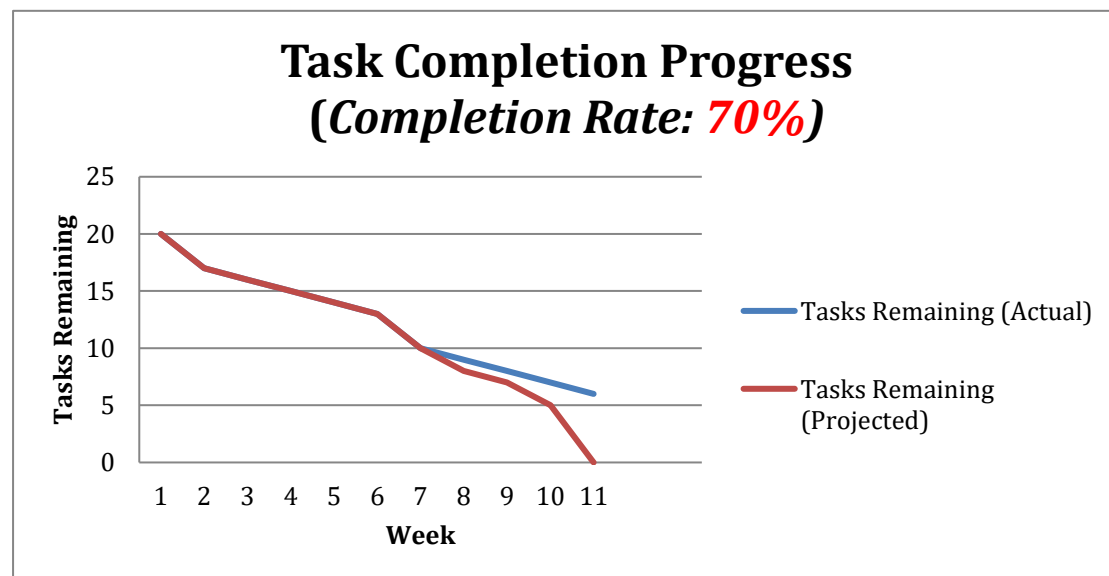
I feel I learnt these topics, concepts, and/or tools really well:

I feel like I learnt the topic version control well because I have been using Git Hub since week 2 to store projects that me and my teammates have been doing work on like the Battleship project that was given to us on week 4. We were asked to convert the VB version of the battleship code to C#, fixed the bugs found after conversion and improve the Battleship game. All progress or changes made to the Battleship project individually is pushed to Git Hub with comments stating who did what changes so that we can keep track on each other's work. Through this process, I have learnt about network graphs which basically shows who is doing work on which repository branch and also shows when did the branch got merged with the main branch, contributor graphs which shows how many commits that each of us has made individually to the project and also how to use Git Hub's wiki page to store the documentation that we have made on the project like each meeting's meeting minutes, meeting agenda and the tasks given to each of us by the team leader is also store on the wiki page. Through repeating this process from week 2 until week 10, I feel like I have a firm grasped on this topic.

I still need to work on the following areas:

I still need work on the unit testing area. This is because my knowledge in C# syntax is not extensive and there are a lot of different ways to conduct unit testings that I still have not discovered yet. Other than that, I will also try to improve on the documentation area. My skills in documentation is not really good because it is my first time doing documentation for a project so I would like to practice writing documentation more outside of this unit as I believe it will be very beneficial for me in the future.

My progress in this unit was ...:



Based on the progress graph above I did and submitted most of my work on time. The reason why the graph started to fall off starting from week 7 because I did not attempt the Distinction tasks and High Distinction tasks.

This unit will help me in the future:

This unit will definitely help me in the future as I believe it will make my learning experience much better and easier as I have a grasp on what to expect to units similar to this. Other than that, this unit has taught me how to work better as a team and I believe this is really important when it comes to the working life where I would have to work with a larger number of people when compared to the number of people I worked with in this unit for the Battleship project. This unit has also taught me about the importance of documentation and I believe this aspect of the unit will bring a lot of benefits to me when it comes to my studies and also my career. This is because documentation makes understanding a person's work much easier and also backtracking to fix an error in a code is much easier due to the practice of documentation.

If I did this unit again I would do the following things differently:

If I had to do this unit again I would prepare myself earlier on before doing the tasks given to me. For example, when converting the VB code to C# code, my groupmate and I had many difficulties trying to fix the bugs after the conversion, we even had to ask the lecturer to give us a guideline on how to fix the code. This experience has left a bitter taste in my mouth and to avoid making the same mistake again in the future I would make a thorough research on how to properly conduct a particular task before actually trying to do it. Other than that, if I did this unit again, I would like to attempt to do the Distinction tasks. The reason why I pulled out last minute from the distinction task is due to the fact that I believed if I went through with this I would not have enough time for the other units but turns out I was wrong. Unable to handle pressure and a tight due date is another particular area I would like to improve on if I were to do this unit again.