# Final Report

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## 1. Introduction

This report will focus on three main areas in working in a project. Firstly, the report will describe about the development framework that we chose, which is the Agile development. Then, working in team will be mentioned in the second part. Finally, the quality of the application in terms of its design will be discussed.

## 2. Agile development practices

In this assignment, our team have tried to follow the agile software development with one one-week-length cycle to produce a web application which is acted as a Morse Interpreter.

For product backlog, we added into it all of the user stories provided in the assignment description, which can be considered as user requirements, along with non-functional requirements, which can be considered as product owner requirements. We prioritized the functional features over non-functional features and server-side features over client-side features.

In sprint planning, we have practiced designing the system. We used sequence diagram to decide which entities will be in the system and how those entities working together in some important scenarios that the system will come across.

During a sprint, some refactoring has been made to deal with the growth of the application. At first, the application is small. The codebase did not have model class for each data on firebase. But then, the project growth there are more needs to have a consistent design for each data. Therefore, model classes were implemented. This help increasing vastly the consistency throughout the whole project.

Our group also adopts test-driven development by creating unit test for “Motion Translator” and “Morse Decoder”. Although the unit tests were created after defining those classes, the tests were made independently and were tent to upgrade those classes, not just for testing the old functions.

Continuous integration is another thing that we apply a lot in this project. The practice happened throughout the whole sprint when one of us pulled the code from Github and then resolved the conflicts to make the application works properly. This way will prevent one member from breaking the parts assigned to another member.

There are Agile practices that we have not applied which are planning game and scrum daily meetings. Because of the small size of the team, the consent between team members can be easily gained. Thus, it will be tedious to apply the planning game. However, if the team size grows, we absolutely need planning game.

Regarding to scrum daily meetings, it was really a big mistake that we did not adopt this practice. The reason is because we were all busy with other units and did not have time to work on the project daily. Since we did not have daily meetings, it was hard for us to keep track of what the other member is working on or stuck in to provide support and push the project progression correctly as planned.

Thinking back, if we adopted daily meetings into our project, it would have been finalized sooner.

The feature that academic environment has support us the most may be the material resources. All the tool that we need to build this application was provided fully with many supports in how to use it from lecturer, tutor as well as other groups that were doing this assignment.

## 3. Working in teams

Communication among the team, in general, is quite good. Our communication mean includes Facebook messenger and face-to-face. Most of the conversation between us about the project went quite smoothly. The reason is because we know each other for

quite a long time. Each of us understands the character and the working style of the other quite clearly. Therefore, most of the arguments happening between us went quite positively and constructively. Also, we are very open to share ideas and thinks which help improve the quality of our project. Although, our communication was not so efficient as we did not use anything to record back what we planned. This caused the duplication of topic in two different conversation.

Regarding allocating tasks, this generally happens as followed. Firstly, we read the assignment description and discuss about what need to be done including functional and non-functional requirements. Then we decide in what way the assignment will be done. After gaining consent on the two previous discussions, we will have a to-do list of tasks for the assignment. Next, we will arrange tasks between us depending on each member preference. Because of the mentioned way of assigning tasks, I think we were both satisfactory with what we were assigned to.

In a small company where each other need to understand about the others, thanks to these practices, I will know how to push conversations or arguments into constructive and positive way. Conversely, we will have to change a lot of things when working among quite a medium size of a group. We need to plan, discuss and work in a more systematic way where we will need planning game, Trello, and tools to gain consent between team members and document what we have discussed about after each meeting.

## 4. Quality of the design of the application

Our application is designed so that it has a clear structure. Each component solves a separate problem in the assignment. Also, the codebase is documented quite carefully. In the situation that there is a new group pick up our application to improve it or modify it to server other variations of the Morse Code App, they will easily find out where to modify and understand the code. Although the codebase has not been implemented for a big application when there are different kind of requests and each request required a complicated process. In this case, the codebase will need to be refactored. Still, it is easy to find where to refactor.

In terms of finding and fixing bugs, since the codebase is well-documented and is implemented with loggers appearing almost everywhere so finding bugs will not be a problem. Fixing bugs is, on the other hands, depending on how critical the bugs are as the application includes quite a lot of external modules.

Personally, I think that the visual design of our application is quite simple. If user is someone with general understanding about Morse code, the website will be easy for them to learn. However, for the one with no understanding about the Morse code, it will be hard to understand because the website is not self-explanatory about Morse code. In that case, we will have to add introduction to the website.

In the case that you want to add new features to the website, you just need to go and add it in because the interface system for the application is very simple. One more thing about the visual design is that we use bootstrap framework for most of the styles. Thus the overall style for each component is quite nice.

## 5. Conclusion

With respect to development framework, we have now have a clear understanding about how Agile development framework work and have successfully adopted some Agile practices. About teamwork, we have lean how to construct a positive argument between team members. Regarding the design of the application, it is not at the highest quality but it works well in the context of this assignment and has well-documented and clearly-structured codebase.