FIT3140 Assignment 5 Morse Code Decoder Project – Report

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There are three aim for this report. First is revise our development process and compare our own process with the process that describe in the lecture and the process in the “Scrum Primer Document” to express how we implement those processes and the pro and cons when we implemented. Second is express the experience of working with team. Third is evaluates the design of our Morse code project.

Firstly, revising our development process. We developed this Morse Code Decoder app using agile development process, which is widely be used in the modern industry. team develop the Decode app in an incremental process. This project has 2 iterations. In each iteration(sprint) l, we apply a lot of agile practices. For example, the user stories, product backlog, agile design, sprint planning meeting, test-driven, refactoring, and continuous integration. According to the Scrum Primer Document written by (Peter Deemer, Gabrielle Benefield, Craig Larman, Bas Vodde, 2012), before each iteration, we need a Spring Planning and Product Backlog to be understanding what the product owner wants and why they are needed, and looking for a solution to implement the items that team decides to take on. We adopt Spring Planning into our own process, in order to get a clear classification of the requirement, we will meet with our product owner who is our tutor before each iteration. After we get a clear project requirements, the product backlog is made my team members, to do this we first come up a list of user stories and estimate their size, then priorities them. As a result of doing the sprint planning, every team member doing their allocated tasks according to the planning, our development process went very smooth. In the lecture, it mentions that we need to do the design first before construction and good design enhances agility, so our team also implemented the agile design practice. We draw a sequence diagram and an activity diagram before an iteration starts, and in the development process we will review our diagrams make some change of it, to meet the new requirements that we need to be adopted. In the end of each iterations, the debug and refactoring was also being used in our development, in the debug process we use Mocha and Chia framework to doing the unit testing, it is very helpful to us to find the bug that existing program’s methods, reduce the time for us to pick up and fix some essential bugs. Though our project is a very small, we still perform the refactoring, it helps us to reduce the code redundancy, make to program easy to maintain. We also using GitHub platform to do the continuous integration, we commit our new project file into the version control system, every team members are able to see it, if the code need to be improved, we can just change the integrated parts rather than multiple different versions.

There are few agile practices we did not adopted, which is the Scrum daily meeting. Because this project is a small project, and our team member is study multiple units as well, so it is impossible and unnecessary to meet with team member every day. Because we have allocated the tasks in the tutorial, team can report their progress on the Trello Board, if addition communication is necessary, we can still communicate using Facebook or arrange another meeting. Another thing that we haven’t adopted is in our actually project development is Scrum Master, because the team member is group by two people, there is no big conflicts between two of us, therefore we can always share our opinions with each other, and find a best solution.

Due to the academic environment is has some difference compare with real world industry. For example, in our software development process, the product owner is tutor, so team member no need to arrange a meeting with product owner, we can always ask question about uncleared requirement in the tutorial, and also tutor can be considering as I professional people in this field, so tutor can express the requirement very clearly, this is very helpful for team to understand the requirement. In the real-world industry, it is very different.

Think back to the development process, the there is one things we might change is we might set up a Scrum Master, because if there is some conflict raised between team member, and cannot be solved. The Scrum Master can do the decision, to avoid the project delay.

Secondly, team working experience. For this assignment, the project group up by two students who have similar knowledge background and from same tutorial, but the challenge still exists between team member. for example, in the start for the project, there are two newly introduced technologies (socket.io & firebase) that team member need to learn and implemented in the assignment. When we are doing the assignment in the start of the semester, there is a knowledge gas exists. so, compare the process record in the Product Backlog, there are some delay exists. at that time, if I didn’t finish the tasks that original allocated on me, my team member will help me to solved the problem, to keep the assignment move forward. Therefore, in the later stage, when everyone gaining sufficient knowledge, our team work become more and more efficient.

Our team member also has sufficient communication, as a mention in the revising development process part, there are only two people in the team, so we did not choose a Scrum Master to lead the whole project development process. Therefore, communication become more and more important in our group. in each tutorial, I work with my team member to understand the requirement, revised last week’s work, allocate new tasks, if there is some issue raised in the middle of an iteration, I will use Facebook to chat with my team member to make sure everyone understand what their partner doing or arrange an extra meeting if there is a major conflict between team. We will also use Facebook to inform our own process with team member, especially when we get stuck or confuses. By doing this, our team help each other, adjust the schedule, so we always finish the assignment on time.

We allocated the individual task in the tutorial after we get a clear requirement from product owner. By doing this we can doing our assignment more efficiency, because the task allocation follow the get requirement, it avoid allocate the wrong task by reduce the misunderstanding in the requirement gathering. In the task allocation, we will normally divide the task into two parts, one is coding, one is document. In the most of time, I was doing coding, my partner was doing the documentation, because I was holding the Arduino board, it is easy for me doing the coding and test. We are both satisfied the task allocation, because the allocation is done in the tutorial, both team members are there, not one people doing the decision.

if this project is developed in a small company, I will arrange more meeting between team member and product owner, because in a company the team size should be large than the current team size, so more people means more opinions, more opinion may cause more conflict, by simply using online chat tool such as Facebook message is not enough delivery idea to every team member, and this also seems not professional. And the Scrum Master also requirement in a small company, after he/she hear the opinion from every team member, he/she can do the final decision.

Lastly, the project design need to be consider. in our design and coding for the application, add function to the project are quite easy. Because for the main function of our application such as Morse code decoder function and motion length determine function, we are coding them using object oriented programming. If we want to change one function or add another function, the other function will not be effect by the changed we made. So, the potential bug will be reducing, and the program is much more maintainable compare with the write the application as a whole.  
As I mention above, with are using OO design and programming, so each function has a dependency, and we can use the test framework such as Mocha and Chia to perform unit testing. This is reduced the difficulty of find exist bugs. in my experience, I think add more comment and using sensible variable is easy for me to find the bug, because debug is happened in almost last step of coding, so if the comment is not detail enough, and the variable don’t have a meaning in their name (e.g. flag1, a, b etc.), I may forget what I write, so I need to re-understand my own code, in order to find exist bugs. for my partner, he may feel worse if a program wrote by me don’t have comment and meaningful variable name.  
I am happy with the current visual design for our application, we use a table to organize all the element in the HTML page and using assorted colour to represent the different section of the control panel. In the HTML, I also using the plain English world to initialize the section that are reserved for display the message that received form server, make people easy to understand what does the section intend to display. If the application is design for using the young children, I may add more element that close to the real life, for example change the start/stop to a cartoon switch, change the display section of a TV etc. in my HTML design it is very easy to add new functionality. It uses table to organize the element, and using the CSS code to enhance it. if the new functionality need to add to the HTML page, we can easily add new row to the table, without change the CSS code, the CSS design will automatically apply to the newly added row.