Software Engineering

CMP3111M

Group 10

1. A list of your group members.

2. The artefact.

3. A log style report that gives the following information:

4. A Critical Reflection

5. Open Source and SCRUM tools

Group Members:

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Logs:

* SPRINT Logs
* Own Contribution
* Pair Programming Logs
* SPRINT Charts

Critical Reflection

Reflection of the use of SCRUM

The development of Scrum consists of three processes, the first, specifying the project plan (backlog), including some of the product's features, customer needs, etc., and then prioritising according to the importance of the task. This is followed by the sprint, which includes the product analysis, design and development, and testing. This step goes through multiple cycles, during which the product is gradually refined. Finally, the delivery of the product can be completed after the final version of the product has been tested.  
  
Scrum development is more than a waterfall development recovery delivery project, which means that customers can convert to see part of the project's effects and then specify the requirements. Agile development gradient waterfall development is better. Agile development allows customers to make changes to requirements at any time. Better meet the needs of customers. The waterfall model begins programming after the project initially determines the requirements, which causes the waterfall model to increase the budget if it changes requirements during development to later stages. Scrum needs to have a fixed meeting during the development process, develop the development progress of the discussion project, and the developer will supervise and discuss the difficulties encountered in project development and the next plan. So, in summary, scrum's choice of waterfall model development can improve the productivity of developers and then deliver products.

Comparing other methodologies with Agile (like Waterfall)

Iterative Advantages:

1. Reduce risk, iterative development can reduce the risk that the project cannot be completed on time.

2. Get feedback from early customers. Some customers have no clear requirements for the project at the beginning of the project, so quickly make an incomplete project for customers to give feedback.

3. Continuous improvement and modification, as iterative development will complete an imperfect result very quickly, and then improve through the customer's request until the project is completed and meets the customers’ needs.

4. Improve developer productivity, iterative development allows developers to clearly understand the current work tasks, developers only need to concentrate on the current tasks.

Iterative Disadvantages:

1. Highly competent project managers and high-tech development teams are needed.

2. Since iterative development is gradually incorporated into functionality, later optimization is an important and arduous task.

3. It is important to coordinate the cooperation between members during iterative development. If one of the members does not complete the task, it may drag down the progress of the entire project.

Compare iterative to Waterfall:

Iterative development is suitable for use when the requirements are not clear. Iterative development is more about project management than guiding developers how to develop programs. The waterfall methodology emphasizes that system development should have a complete life cycle, while iterative development divides a large life cycle into many small life cycles. Iterative development is faster than waterfall development, with an impractical result in the shortest time and with the least amount of loss, continuous improvement and modification through user feedback, which reduces the risk of late problems and develops compared to traditional waterfall development. In which the progress is faster

Advantages and Disadvantages of SCRUM methodology. Also note how it differs from Waterfall, Spiral; in terms of implementation.

**Compare SCRUM to DSDM**

**Compare SCRUM to Spiral**

Evaluation of Tools Used

Open Source and SCRUM tools

A) An evaluation of tools used to facilitate the development of an open source project using SCRUM

B)

GitHub

Github was the main platform that as a group, we used to maintain work continuity; GitHub served as an open-source software development platform for all group members to upload work to throughout the project. GitHub was used to upload not only artefact work such as code files, but also theory work needed for this project. We utilized most of GitHub’s tools throughout the project, resulting in great work collaboration.

(import artefact and changes to artefact here)

GitHub has a useful number of tools such as work time flows/contribution charts to show how work is being developed. We also used workflow chart in order to look at who has been contributing work. GitHub’s ‘Insights’ feature allows the contributors/the team to access a plethora of tools such as Pulse. Pulse allows users to see how many authors have contributed to the repository. Not only this, but Pulse also shows changes to files, additions and deletions of files alongside showing a useful graph to see which users have done these actions. GitHub’s Insights also offers features like Commits and Traffic. Commits occur when a file is altered or changed. When a commit happens, a unique ID is given to the change to identify what change has happened and when. GitHub’s Traffic is also a feature that was used by us to see the amount of visits our repository has had.

(Import traffic, pulse and commits screenshots)

Advantages and disadvantages of Github

GitHub’s preview and edit tool has been extremely useful to the project as it allows the team to view other peoples work. For example when working on the artefact we have all been able to view and edit code all within GitHub; any changes made will be kept on GitHub for the whole team to see. With using GitHub’s insights, it gives you the advantage of using all the tools that are provided such as code frequency and commits. GitHub has a downloadable desktop version that allows users to upload or ‘push’ work to the desired repository. This is a tool that we used and found that it was extremely useful as the ‘push’ function as this keeps all changes that have been made to that piece of work. From this, we can reflect on all changes made to improve our work. Due to the fact that GitHub is a repository, it supports a plethora of programming languages, which gave us the flexibility of choosing which programming language we wanted to use for the artifact.

Considering the fact that GutHub has a considerable amount of advantages, it also has some downfalls. For example, you are able to edit code files on GitHub and keep them in one place, but with documents such as word and powerpoint, you are unable to edit/work on these within GitHub. Due to the fact that GitHub is a respiratory, GitHub has quite a steep learning curve as it is not as simple as other online file storage systems like Google Drive or Microsoft One Drive. Therefore at the start of the project, some of us found that GitHub was slightly difficult to use and navigate around.

Facebook messenger communication

Communication is extremely important in software engineering; without sufficient communication, a team would find it extremely hard to work together. For this project we used Facebook messenger in order to communicate with one another. We used Facebook messenger to organise meetings and to generally talk about ideas/work for the project.

(Screenshots of facebook messenger)

C)

Advantages and disadvantages of using Facebook Messenger

Considering that we used Facebook messenger for our main source of communication, we found that there were some advantages and disadvantages. An advantage that we found for using Facebook messenger was the ease of use. Facebook messenger platform is an extremely easy tool to use when messaging. It offers group chats, which is what we used for this project, it offers features such as polls which we used for quick answers to meetings, messenger supports images allowing us to show one another different images related to the project. Facebook messenger has a web client version and an app version of the application that supports Android/IOS which meant that each member of the team was able to access Facebook messenger from most devices.

Even though that Facebook Messenger comes with a plethora of useful advantages, it also has its downfall. Facebook messenger can be seen as unprofessional in the perspective of a business case due to the fact that Facebook is a social media platform. Therefore something like WhatsApp or Outlook email maybe a more professional platform to use to communicate. Using Facebook messenger requires users to create a Facebook account which is linked to the social media platform Facebook; this can be a distraction to users. Comparing Facebook Messenger to another means of communication like WhatsApp; WhatsApp provides encryption of conversations whereas Facebook Messenger does not, resulting in Facebook Messenger being less secure.

Impact the tools had on the process

GitHub’s work flow charts/contributor charts have impacted the project in a positive way. What is meant by this is by allowing the whole project team to see each other’s work and when it is uploaded, we can range whether the work is up to standard. This ultimately benefits the team to identify any potential problems/setbacks with other peer’s work which will help with the overall project. If this is the case then the project team can come together to collaboratively fix the problem, which also impacts the experience of problem solving within the group and any future problems.

Github’s service in which allows users to view and edit raw code online impacted the team by allowing us to keep the project all in one place. Moreover keeping the artefact in one place and one platform was extremely useful to the project as this allowed all team members to make changes to code if necessary. Making changes to the repository also meant that GitHub tracked the made changes.

Due to the fact that our project is an open source project, GitHub is an extremely useful system that allows such projects to be efficiently organized, tracked and worked upon in a collaborative manner. Not only is this a valuable tool to our project, but also to any other team wishing to work on a software development project. Github is free, open source and includes a wiki and an issue tracker which makes in-depth documentation easy to do and to get feedback for which will aid any software development project created. Not only is this an advantage of using Github but also a positive impact on the team.

Group Evaluation (Individual)

* How did each member contribute (not yourself) – Allocate % to each group member

|  |  |
| --- | --- |
| Student | Percentage |
| Tom Baldam |  |
| Graham Broadbent |  |
| Cathal Doherty |  |
| Huo Jiahui |  |