Method Selection and Planning

Group 9

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Outline and Justification of Teams Software Engineering Methods

Assessment 1

Programming Methodology

When we started working on the project, we thought about which software engineering method would work best for us. We looked at Plan-Driven Methods and Agile Methods. Plan-Driven is great if you know exactly what you need from the start, but it doesn't leave much room for change. Since our project was evolving, Agile was the better choice, as it lets you adapt as you go, encourages teamwork, and breaks the work into smaller, more manageable chunks. This approach fit our team perfectly, as we could work in sprints, check progress regularly, and stay on track with our goals.

We have divided our development into weekly sprints, which begin with a planning meeting. With these planning meetings we have been starting off with a scrum where all the members of the team report on what they have done in the last week, what they are going to do in the meeting/coming week and what risks/problems they anticipate running into. This is so we as a team can stay informed and connected as we work on differing parts of the project.

Collaboration and Development Tools

We used GitHub to develop and host our website as well as create a plan on what needs to be done, what is currently being worked on, and what has been completed using the Projects feature in GitHub. This means that we can easily track what each person has been assigned to do, and what else needs to be worked on. We also used GitHub, to create and easily share our code for the project, so that when working on the project we have access to the latest version of the code. This is a great thing to use since it aligns with the Agile Methodology as it allows for design improvements via refactoring and fast iteration.

We also set up a private Discord server to ensure we had a way to communicate with everyone in the group. This allowed us to be able to see what we have agreed upon in the past, for example meeting dates and locations. We also used this to share relevant links, files and images which we could refer back to at a later date.

When it came to brainstorming and designing the UI, we originally thought about using Google Jamboard, but it was being discontinued. Instead, we went with Canva, which turned out to be a great choice. Canva made it easy to collaborate on designs, and we could quickly adjust things based on feedback from the team. We also used a physical whiteboard during our in-person meetings, which was super handy for sketching out ideas and making plans on the spot. We did consider a few alternatives, like Trello for task management, but GitHub's built-in tools just made things simpler. In the end, the mix of GitHub, Discord, Canva, and our whiteboard gave us everything we needed to work efficiently and stay on the same page.

Assessment 2

When we moved on to Assessment 2 and inherited the previous team's code, we decided to keep some of their existing systems in place. GitHub was the obvious choice to continue using because it was already set up with the project's code and task management. This made it easy for us to jump in without wasting time setting up a new system. The GitHub repository gave us access to the latest code and helped us track changes, so we could quickly adapt to their way of working. Plus, sticking with GitHub kept everything streamlined, especially since we were already familiar with it.

However, when it came to communication, we didn't carry over the previous team's use of Discord. Instead, we stuck with our existing WhatsApp group. It worked well for us because we were already comfortable using it, and it fit into our routine. WhatsApp allowed us to quickly share updates, set meeting times, and discuss issues without needing a new platform. While Discord might have had some extra features, we found WhatsApp sufficient for what we needed.

By blending the old team's systems like GitHub, with our own systems already in place like WhatsApp, we were able to adapt to the project while keeping things simple and efficient.

Outline To Teams Organisation

Assessment 1

The approach our team chose to take for organisation was to split the workload across the whole group, with multiple members working on each section. This was done to increase the bus factor of each section of the project, therefore reducing the chance of failure due to absence.

In total there are seven members of the team, with two dedicated members for documentation and two dedicated members for implementation. In addition to this, the final three members of the team are flexible and are assigned to elements of both documentation and implementation; whilst being able to cover part of the workload of any of the dedicated members, if absence occurs. This is done to enable all group members equal workload, which prevents members being left out or taking too much work on as well as providing redundancy in the case of a team member being ill or elsewise unavailable.

We have had a minimum of two weekly meetings, one at the start of the week to allow us to set any goals or objectives. As well as one at the end of the week to allow us to check in and see how we are doing in regard to these and what needs to be done over the weekend. In some cases we also had midweek meetings to allow us to discuss various topics as a group. This has enabled constant communication between group members and allowed monitoring of how the project is progressing. Also, equal workload distribution has been made easier due to these, with task assignment being frequently adapted to suit the needs of the group.

During frequent periods over the course of the project, members working on the same tasks have online or in-person meetings to discuss and work on those tasks. This enables better communication and distribution of work, with a lower risk of conflicts between assigned members. It also allows members to work in parallel more efficiently, as various topics on the task can be discussed, improving the quality of work.

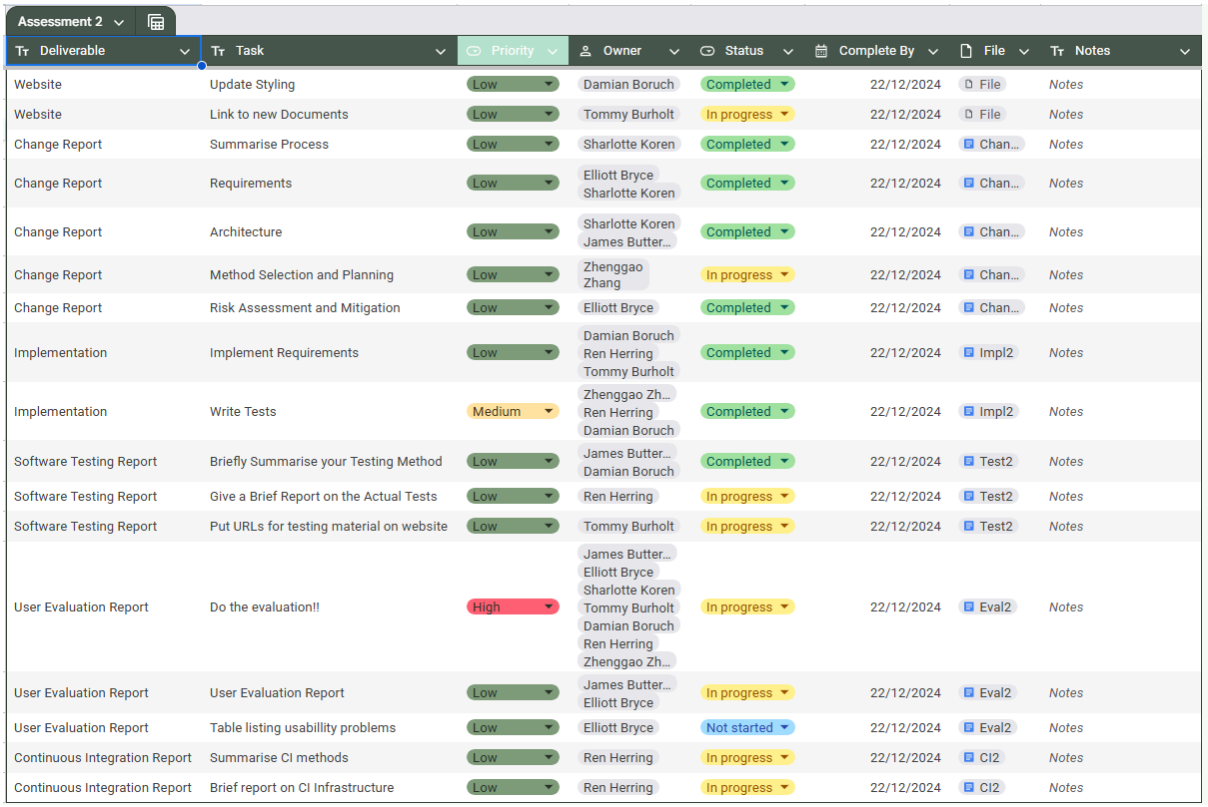
To summarise, the advantages to the team that this organisation of work brings are: a reduction of workload on individual members which in turn keeps morale of the team high and reduces the risk of select members with a higher workload coming across problems accrued from a build up of stress. In addition, this allows members to take time off in event of external circumstances, due to the increase of bus factor.

Assessment 2

When we started working on Assessment 2, we adopted a similar approach to team organisation as we had in Assessment 1. We continued meeting twice a week to keep everything on track - one meeting at the start of the week to set goals and objectives, and another at the end of the week to review progress and plan ahead. These regular check-ins helped us stay aligned as a team and ensured we could address any challenges quickly.

To make things even more efficient, we assigned team members to tasks based on the sections they worked on in Assessment 1. Since they were already familiar with their respective areas, it made the most sense to build on that knowledge. This meant we could spend less time distributing the roles and getting familiar with the content and instead focus on getting the tasks done. Having people continue with what they already knew also reduced confusion and allowed us to hit the ground running.

To keep everything organised, we created an Excel spreadsheet outlining all the tasks we needed to complete for Assessment 2. Each task was clearly defined, and we assigned the corresponding team members to it based on their previous work. This spreadsheet made it easy to see who was responsible for what and track our progress as we worked through the project. A snapshot of the spreadsheet is shown in Figure 1 below.



Assessment 2

Deliverable	Task	Priority	Owner	Status	Complete By	File	Notes
Website	Update Styling	Low	Damian Boruch	Completed	22/12/2024	File	Notes
Website	Link to new Documents	Low	Tommy Burholt	In progress	22/12/2024	File	Notes
Change Report	Summarise Process	Low	Sharlotte Koren	Completed	22/12/2024	Chan...	Notes
Change Report	Requirements	Low	Elliott Bryce, Sharlotte Koren	Completed	22/12/2024	Chan...	Notes
Change Report	Architecture	Low	Sharlotte Koren, James Butter...	Completed	22/12/2024	Chan...	Notes
Change Report	Method Selection and Planning	Low	Zhenggao Zhang	In progress	22/12/2024	Chan...	Notes
Change Report	Risk Assessment and Mitigation	Low	Elliott Bryce	Completed	22/12/2024	Chan...	Notes
Implementation	Implement Requirements	Low	Damian Boruch, Ren Herring, Tommy Burholt	Completed	22/12/2024	Impl2	Notes
Implementation	Write Tests	Medium	Zhenggao Zh..., Ren Herring, Damian Boruch	Completed	22/12/2024	Impl2	Notes
Software Testing Report	Briefly Summarise your Testing Method	Low	James Butter..., Damian Boruch	Completed	22/12/2024	Test2	Notes
Software Testing Report	Give a Brief Report on the Actual Tests	Low	Ren Herring	In progress	22/12/2024	Test2	Notes
Software Testing Report	Put URLs for testing material on website	Low	Tommy Burholt	In progress	22/12/2024	Test2	Notes
User Evaluation Report	Do the evaluation!!	High	James Butter..., Elliott Bryce, Sharlotte Koren, Tommy Burholt, Damian Boruch, Ren Herring, Zhenggao Zh...	In progress	22/12/2024	Eval2	Notes
User Evaluation Report	User Evaluation Report	Low	James Butter..., Elliott Bryce	In progress	22/12/2024	Eval2	Notes
User Evaluation Report	Table listing usabillity problems	Low	Elliott Bryce	Not started	22/12/2024	Eval2	Notes
Continuous Integration Report	Summarise CI methods	Low	Ren Herring	In progress	22/12/2024	CI2	Notes
Continuous Integration Report	Brief report on CI Infrastructure	Low	Ren Herring	In progress	22/12/2024	CI2	Notes

Figure 1: Team 2 Work Distribution Board

Overall, this method of organisation worked well for both our team and the project. By leveraging the familiarity from Assessment 1 and maintaining regular communication, we kept the project moving forward efficiently while ensuring everyone had a manageable workload.

Systematic Plan For Project

Assessment 1

Project Organisation

- **Delivery Team**: our delivery team consists of: Antonio Tiron, Toby Rochester, Ethan Spiteri, Henry Sanger, Remi Shaw, Lewis Ramsey and Will Timms. Antonio is the team leader, Ethan is the second in command and each other team member is assigned particular tasks.
- **Customer**: the Customer is Tommy Yuan. Discussion was undertaken upfront with the customer and involved the creation of a requirements specification.

Resources

The client requires the use of Java 17 as the programming language. Ultimate submission needed to be in a zip file named team-9.zip. The zip file needed to contain: url1.txt, Req1.pdf, Arch1.pdf, Plan1.pdf, Risk1.pdf, Impl1.pdf, the code and the executable JAR.

The customer's requirement included that the game should "load reasonably quickly on the user's machine" which was assumed to be a PC running Windows 10 or better.

Project Schedule

The work can be broken down into the following activities which have been identified using plantUML.com. The activities are as follows:

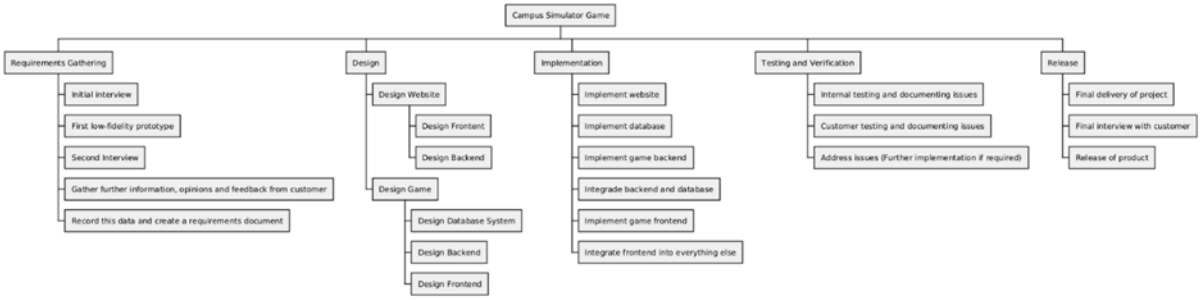


Figure 2: task breakdown for the project

Tasks were then allocated to team members in the form of a Gantt chart. An example for one of our plans:

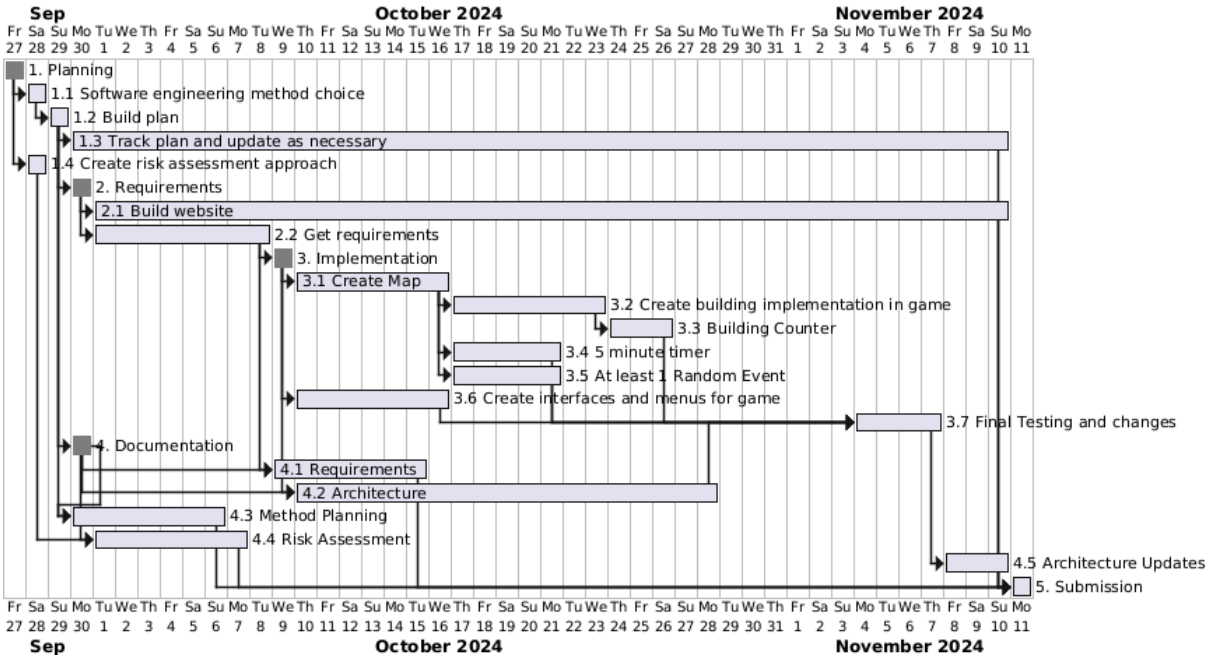


Figure 3: Initial Gantt Chart

In particular, this identifies the key tasks, their starting and finishing dates, as well as task priorities and dependencies.

How the Plan Has Changed Over the Duration of the Project

The initial plan was high level and based on our first views of what was needed. Once we had interviewed Tommy, we were able to add more items to the plan and to move tasks between people. Where we assigned more than one person on a task, those people would

agree between themselves how to achieve the joint task. (We could not assign tasks to more than one person on GitHub, so named one person as lead.)

Meetings were held twice a week, Monday and Friday. The first meeting (in week 0) was about meeting each other and understanding how each of us worked best. We used this meeting to understand the scope of the assessment and the tasks involved. We also agreed the timing of when the meetings would happen and booked a room and set up a Discord.

Week 1

We identified the tasks needed for the website, which could be created before we had a detailed understanding of the client specification.

Week 2

We had agreed on the use of the GitHub site after looking at the project brief. We also used this time to brainstorm the interview questions needed for the project specification. At this stage, we only knew the deadlines for the project, and meeting schedules, but did not have a task list or allocation to people.

Week 3

We involved finalising the questions for the client requirements meeting and then, after the meeting, converting these requirements into tasks. These were then agreed to by people and put onto GitHub.

Week 4

At the end of Week 4, we reviewed together the implementation and this provided us with the chance to check that our timing for the project was still ok. We concluded that we could carry on as we had planned.

Week 5

We involved reviewing the website and the first drafts of the buildings, and allowed us to review how we were developing against the plan. At this stage, we realised that we needed to speed up in order to be able to deliver on time, and focused attention on the key tasks. We reported to each other as to what was the current state and what was needed to finish.

Assessment 2

Project Schedule

This is our Gantt chart for the overview of Assessment 2 and how we were planning to get everything done:

Figure 4: Assessment 2 Gantt Chart

Week 7

Week 8

Week 9

Week 10

Week 11

Christmas Holidays