Method Selection and Planning

Team 14 and Team 12

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4.(a)

Methodology we have chosen is waterfall. [9]
- This is because we have a clear idea of the aim of the project and the documentation needed from the beginning and therefore can plan the process in a linear way. - Waterfall's methodology is a better solution for small projects that have well-defined requirements that will not change, while Agile is preferred when continuous delivery and feedback are important, requirements are not well defined and time to market is more important than releasing a full feature version. [11]

For **Communication** we have chosen Discord [1] because:
- It is a resource that each team member has experience with already.
- It has multiple ways to communicate so all can be kept on the same platform. For example; instant messaging for when we are doing work outside of meetings. It is also easy to go into calls if we want to do a quick meeting if we decide it is needed without having to send a link like with Zoom for example.
- We used zoom for the first online meeting however we found it was less stable for those in the team with intermittent connection speed and the screenshare was frustrating and delayed meaning we wasted time that we could've spent working on the project waiting for it to reconnect. This is important for our chosen methodology because the linear approach means we are working together on most aspects of the project as only one section is happening at a time, so communication is important.
- Ipad Pro, Ipencil and the GoodNotes app are to be used for screen sharing so that we can draw the diagrams and notes for what we are discussing, saving time as opposed to doing it via typing or diagram programs that we are not as familiar with as drawing by hand
- In addition to the above, we (Team 12) found it useful to book rooms on campus where we could collectively discuss what needs to be done. We used this time as an extra way to communicate with one another, as we were able to look at a problem with more than one set of eyes.

For **storing our documentation**, we have decided to use Google Drive and Google Docs [4]
- This is because of the ability to work on the same document concurrently. This is important as we will all be working one each section one after another so the whole team could be writing in the same piece of documentation. This is also useful for the shadowing structure we discuss later, where one person monitors the work of another for mitigating risk.[6]
- Furthermore, the fact that Google Drive stores all files on the cloud and has a version control system mitigates the risk of losing files due to corruption or otherwise in Risk 12 [6].
- An alternative to this would be one drive or dropbox, however google drive is the system that each team member already uses.

Trello will be used as a **group organisation tool** and to set tasks for each member. [12]

- We have set it up so that we can decide what we want to do during that meeting and then

at the end of each meeting, we assign cards to each member of the team and set a deadline which is usually the next meeting. Although Kanban boards are usually used for agile development, we will use it for organising what team members should do in their own time between meetings. With the columns on the board being: - 'To do' - where we add cards at the beginning of the meetings of tasks we plan on doing during the meeting and tasks left at the end of our meeting in

- ○ this section (as shown in our trello screenshots) are tasks for team members to do before the next meeting.
- ○ - 'Doing' - where we list tasks that need to be done before the next meeting. - 'Done' - where all completed cards go.

- - For implementation, we will use a seperate board for tasks that need to be done so that team members can choose a task, mark at 'doing' then 'done'. As well as the documentation one [7]
- - In our initial meeting we tried using GitHub issues and Notion databases but found them too complex to use due to their interface and abundance of unnecessary features.

For our **version control system,** we have chosen GitHub as it allows us to collaborate with one another efficiently and as it is the industry standard, we decided that using GitHub would enable us to gain relevant experience from this project which we can then use in the future for our personal projects or when we work within the industry. GitHub also allows us to add issues into the project. We looked through the requirements of the game and added in those that hadn't been started or finished. After this, each member self assigned them to an issue that they could work on. Part of our planning was using this feature on GitHub.

For our **development environment** we chose **Intellij [5]** as it was primarily designed for Java (the programming language for our project). Based on our team members experience, we found that there were quite a few advantages of using Intellij, such as the keyboard shortcuts and integrated Version Control support such as Git. Using the shortcuts available and the ability to automatically find potential bugs and fix them, transform code, generate code,etc.,we will be able to increase our productivity and focus our time and energy towards further development of the game and the project as a whole. Intellij also enabled us to write and test our code easily.

4.(b)

In terms of **team organisation**, the team's approach is:

- To elect one member from the team as the group leader who would proactively lead the initial meetings, facilitate discussions, and take quick and meaningful notes so that none of our ideas/queries were lost/missed. Every member of the team in charge of sub-parts of the project (based on their strengths) this is because:
    - We want each member to feel the same level of importance and significance - Each member gains experience of leading meetings and discussions, hence avoiding any conflicts within the team and giving each member a sense of "taking-charge" of the project. .
    - Due to the waterfall approach, we are all working towards the same part of the project at the same time so a leader will be needed to ensure we stay on track but it would be too much work for one person to lead everything.
- As our project progressed, we moved from a Waterfall approach to an Agile approach for the remainder of our project. This is because we had limited time left with quite a few smaller finishing tasks to fulfill and so we split the team in 2 parts, where one handled the implementation of the project whilst the other focused on documentation.
- During this process we ensured that each member of the team would be up-to-date with the tasks being performed in the other team, which also ensured continuity between implementation and documentation.
    - This will help to keep the project on track and for example, if any of the members are ill/drop-out, then at least one of the members in the team will be able to continue from where they left off, hence it wouldn't be much of an issue as compared to if no one had any idea of what that person was working on. This helps to mitigate risk 4 and 7. [6]

We **planned** our project in gantt charts.
- These gantt charts can be seen on the teams website [8].
- The first shows the overall process and each of the following breaks the sections down into smaller tasks.
    - We did this so that everybody is aware of the order in which we should do things and so that meetings can have a clear aim each week.
    - As can be seen in the first overview Gannt chart however, we have chosen to add a review task that is constantly active.
        - This means that we plan to have a team member reviewing the work done while the rest of the team progresses in the project to ensure that the project isn't rushed or delayed, causing an estimation risk which is caused by technical debt as described in Risk 003 and an overall delay as described in Risk 004 [6]

4.(c)

For our **weekly plan** we used the idea of 'weeks' as the weeks we met up and worked as a group at least once. We did this because there were difficulties in meeting up and working as a group over the duration of the Christmas and Easter break due to clashing schedules and upcoming exams. The website contains a screenshot of the Trello boards we used in these weeks. [7]

With assessment 2, we started the project by creating a gantt chart with target goals for when certain tasks should aim to be completed by. It helped us plot the course of time over the requirements that needed to be met by the team to effectively create a fun game. We were able to understand fully what the requirements from our stakeholder were.
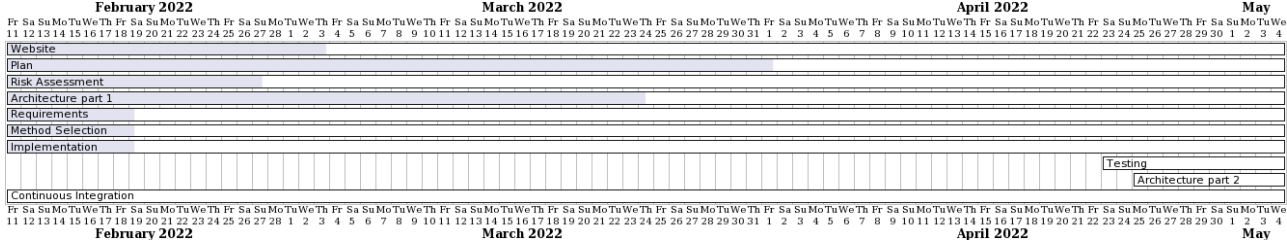
Week 1

Week 2

Week 3

Week 4

Week 5

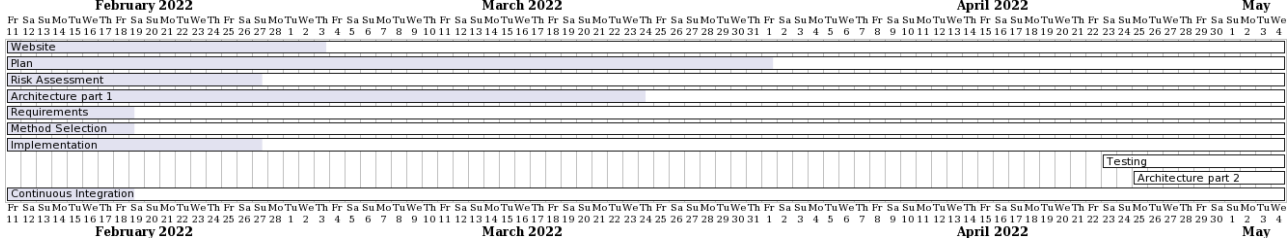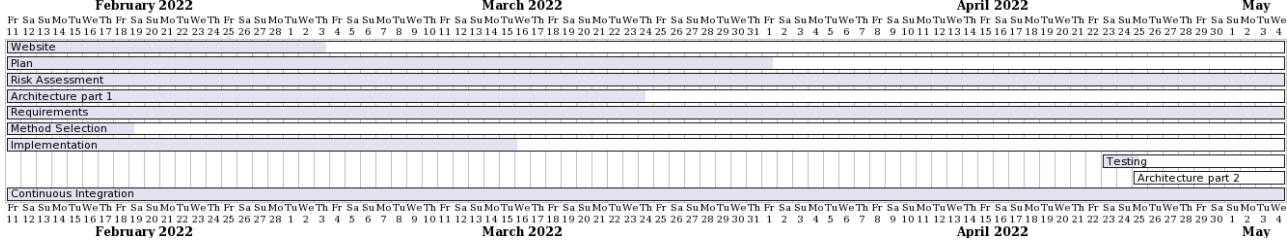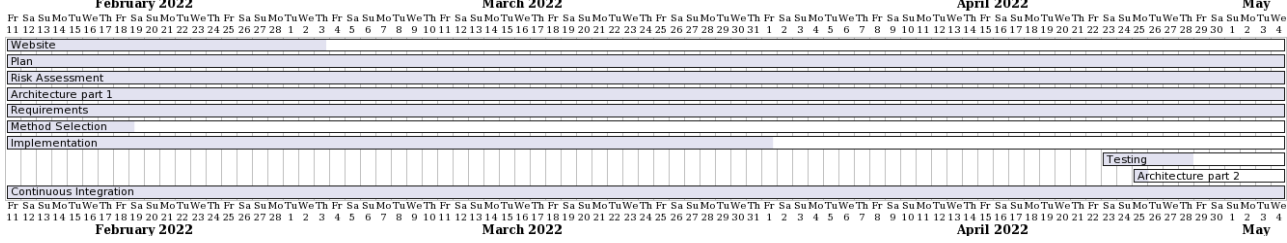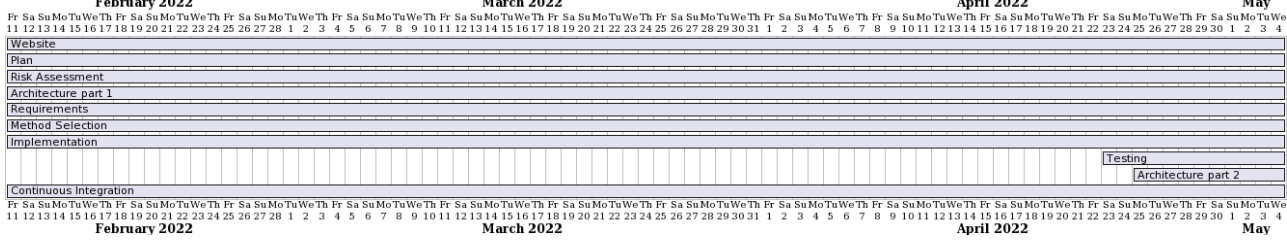## Week 6

Week 7

Week 8

Week 9

The above Gantt charts show the evolution of planning our project. The gantt charts allowed us to see where we were in the project and see what also needed to be done. It shows how much of the task is completed per stage. We decided that all members of the team would look over each task, so there was not one task owner per task. We had frequent meetings to discuss the progress through each task. Each of these is shown on our website [13].

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