Risk assessment and mitigation

Cohort 4 Group 6

Javengers

Braithwaite, Max
Faruque, Amber
Fu, Zhuoran
Kocaman, Melike
McDermott, John
Rissen, James
Scott, Charlotte

Yellow highlight means changed, unhighlighted is unchanged from part 1

D5a - Risk Management Process

To ensure the team can effectively manage unexpected risks and mitigate their potential effects, we will follow the strategy outlined below.

Identify:

Every potential risk that is identified will be outlined in the risk register:

- Assign every risk an ID.
- List potential risks - Issues that could potentially impact the project.
- Categorising the risk for organisational purposes. Types of risk:
    - *Project:* affect project schedule of resources
    - *Product:* Affect product quality/completeness - flaky libraries, tool bugs
    - *Product and Project:* Requirement errors and changes, specification delays
    - *Business:* Affect the organisation procuring/developing the software
- Identifying the level of impact it will have on the project, to determine priority.
- Providing a brief impact description for other members to utilise.
- Listing the members involved in the risk so other members know which part of the project may be affected.
- Likelihood of occurring - this improves planning
- A brief description of ways to mitigate the risk at hand.

Analyse:

- Analysing whether or not the risk is occurring
- Analysing the likelihood of the risk occurring and the potential impacts
- Highlighted the potential consequences that the risk may cause with the category.
- Could the risk have been prevented? If so, for future tasks, take into consideration how this can be done for analogous risks.

Plan:

- Consider the task roles given to each member, and how secondaries can assist
- Organisation - Keep the team informed of who will take control of the risk, how they will do so.
- Ensure that each risk has multiple people aware of it and ready to identify and handle it

Action:

- Once all the above has been identified and managed, begin reversing the issue, whilst simultaneously updating all shared information for the team to also ensure the risk has been averted.
- Assess the action during in-person team meetings to receive feedback, as well as any solutions that may be easier to implement or more efficient.
- Add any mitigation strategies that were used to handle the risk to the register.

Monitor:

- Continue to oversee the risk that occurred using tools such as the Gantt chart/Backlog on GitHub.
- Just like the in ‘analyse’ section, if any other risks become apparent whilst amending the previous risk, immediately add it to the risk register and repeat all previous steps.

By following this risk management process, we will mitigate any potential risks for our team. The use of the risk register means that all members of our team understand what they are expected to do when certain things happen and allows the project to carry on as smoothly as possible. By analysing and planning in advance, we can deal with risks efficiently and therefore minimise their overall long-term impact on our project. The constant monitoring of the risks will also allow our actions to be as effective and realistic as possible as our priorities may change throughout the project.

D5b - Risk Register

ID	Risk description	Risk category	Impact level	Impact description	Likelihood	Member(s)	Mitigation
R1	Timescales	Product and project	5 - High	Meeting the deadlines of all tasks within the project is vital - as failure to do so would lead to reduced marks.	2 - Relatively low	Any member of the team Charlotte and Amber	Keep up the standard of organisation and communication throughout the entire project, e.g. if someone is falling behind on a task - let the sub-members know and also keep a log of it in GitHub.
R2	General illnesses or other circumstances leading to team members not being able to complete work temporarily or attend meetings	Business	4 - Relatively high	Team members may become unable to complete work if they become ill and other parts of the project may then become delayed.	2 - Relatively low	The secondaries of the sub-team All members	Have secondary team members assigned to each task so that if the primary becomes unwell then the secondary can carry on. Minutes are also taken in all meetings to ensure that any missing members are kept up to date.
R3	Staff availability	Project	2 - Relatively low	Unlikely case that the team needs important questions answering as soon as possible and staff are unavailable due to circumstances such as illness.	1 - Low	The secondaries of the sub-team All members	Don't leave any burning questions to the day of meetings with the staff, either Email earlier to get an idea of how to approach the task if it's urgent or, if they are unavailable, either make a work-around or wait until the next meeting.
R4	Hardware problems like personal laptops failing	Product	4 - Relatively high	Will mean that the team member will not be able to work when at home and may be less contactable.	1 - Low	Any member of the team All members	Ensure all work is uploaded to the centralised shared Google Drive and GitHub so that work can be continued by other members of the team. If the problem cannot be solved quickly then consider renting a university laptop and changing meeting rooms to accommodate the possible use of university PCs.
R5	Software problems like IDE's not working as expected	Product	3 - Moderate	Could make collaboration when coding difficult if code is not transferring easily.	2 - Relatively low	Any member of the team All members	Ensure all members of the implementation team are familiar with the IDE being used and have the most up to date version. We have also picked an

							IDE with a large community so there are plenty of resources online to aid us.
R6	Teams members may not complete tasks as expected	Business	3 - Moderate	Team members may not complete assigned tasks by the date expected or to the quality required.	2 - Relatively low	All members of the team	All tasks are on a centralised Kanban so we can all see what tasks we are expected to complete. There is also a review system so each task must be reviewed by another member of the team to ensure high quality work. Another team member will be ready to inherit work if required to.
R7	A team member becomes unavailable and was the sole author on a piece of code	Product	4 - Relatively high	If a team member becomes unavailable and they are the only person who understands where the implementation is up to then the whole project will be delayed as the rest of the team figure out what to do next.	2 - Relatively low	The other primary on implementation and the associated secondaries Charlotte, Amber, Zhouran, Max	All pull requests are reviewed by another member of the implementation team so there will always be another member of the team who is aware of where the code is up to and what needs to be completed next. In the event of this occurring, we will do our best to understand the written code as we should have stuck to conventions and written comments along the way. We will also share our planned out code before we begin coding.

Extension of the WHALES risk register for part2

ID	Risk description	Risk category	Impact level	Impact description	Likelihood	Member(s)	Mitigation
R8	Merge conflicts	Project and Product	2-Relatively low	This could result in errors If these are left unresolved	5-High	Charlotte, Amber, Max and Zhouran	Ensure that we are implementing new features within branches but frequently pushing to the main branch. When conflicts do arise, we will discuss the most appropriate solution.
R8	People may not prioritise the project as it is a university project and every student has other modules.	Project and product	4-Relatively high	This would create significant scheduling issues that could result in a lack of work completion.	3-moderate	Everyone	We will have weekly checkins to make sure people are being responsible with their time. If we notice that we are slipping behind schedule when there isn't much time left then we may look into reassigning work.
R9	Prioritising certain deliverables over others	Project and product	3-moderate	This would result in an overall poor quality work being produced	3-moderate	Everyone	Our Kanban boards will allow us to track our priorities and analyse if what we are prioritising is sustainable.
R10	Disagreements between team members	Business	2-relatively low	Disagreements can disrupt work flow.	3-moderate	Everyone	If a difference of opinion arises then the rest of the team should be involved in deciding on the best cause of action. If the disagreement escalates, people's positions within the project could be rearranged.
R11	We do not have a budget and therefore have to use free assets	Product	1-Low	A lack of budget could limit the quality of our end product.	5-High	John and James	The impact of this is quite low but if we need any assets to be made we can create them.
R12	People having access to our work	Business	3-moderate	This poses security threats as others are not allowed access to our work during the project's development.	1-Low	Charlotte and Melike	We will make sure that our github repositories and drive are made private.
R13	Coming across some code that	Project	3-moderate	This could slow down the	2-relatively Low	Charlotte and Max	When inheriting code, it can be hard to

	we are unable to understand in the project that we inherit			development of the project			understand the structure but the approach our team will take is to have open discussions when working on code. This will allow us to efficiently progress through development and avoid misunderstandings .
R14	The code that we inherit not being testable	Project	3-Moderate	If the code we inherit is not testable, it may affect the testability of our future code.	2-Relatively low	Charlotte and Amber	The code may have to be refactored so that it is testable. To prevent this from escalating it is best to address it early.
R15	Tests not passing	Product	4-Relatively high	If tests such as multi OS checks don't pass it could affect the quality of the product that we produce.	3-Moderate	James and Zhouran	We will do our best to understand why the tests are not running as intended. If we are unable to address issues, we will discuss them in our writeup.
R16	Unable to cover all tests	Product	3-moderate	This could lead to bugs remaining in the final version of the project.	5-High	Charlotte, Max, Zhouran, Amber	We will aim to prioritise certain tests being run over others. A minimum of 1 test per requirement should also be kept to.