Risk assessment and mitigation

Cohort 4 Group 6

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The goal of the risk assessment is to consider what may hinder the progress of the project and to estimate the impact and likelihood of these risks while also identifying steps which we can take to prevent and mitigate these issues. In order to identify the risks that we may face, we met as a group and brainstormed all of the risks that we believed should be considered for this project. Once we were happy with our plan for the report, we listed the categories that a risk may fall under (resource limitation, organisation, people, technology and security) and started categorising each risk. These categories cover risks that may arise involving team collaboration, the nature of a university module and the use of certain software. By discussing these risks together, we ensured that clarity was maintained and we considered as many potential risks as possible. Collective discussion will ease the process of identifying when a risk is happening and will allow for a quick response if an unfavourable situation occurs, as everybody is aware of the risks and the steps that can be taken to mitigate them.

The next step was deciding on the format of our risk registers, which resulted in two tables being created. One holding the initial risks and mitigation strategies and the other holding any new risks as well as risks that were previously identified and have been flagged to have occurred. Each table includes a column containing the risk ID which will be used to link risks between tables. The week when the potential risk was identified will also be added to the ID column; this will help to keep our risk management process clear. Columns holding the type of risk and a description of the risks were also added. Alongside this, columns that describe risk likelihood and severity in the case it occurs. Both of which both take the category of high, medium or low. Finally, there are columns describing the strategies that will be taken to mitigate the risk and the risk owner. The risk management table has the same categories as the mitigation table but doesn't have a risk likelihood of occurring because this table represents risks that have already occurred. The mitigation column has also been renamed to management. This table will be extended when a new risk is found or a new management strategy is applied to an old risk.

In order to allocate risks to owners, we considered our roles within the project and decided on who would be most suitable to monitor each risk. This ensures that the risks will be managed by those who are assigned to that part of the project as they are able to monitor their section closely and apply our mitigation tactics if necessary. Our team was loosely split into two sub-teams, those coding and those writing reports. The majority of the software and security concerns were assigned to the software development team whilst the people and organisation risks will be managed by people writing the reports. Some risks may be assigned to multiple people if that is what is deemed appropriate to effectively manage the risk. In addition to having the approach of individual risk managers, we will also all strive to ensure that we are each taking steps to prevent, minimise and report every risk that we spot. The risk owners may also change throughout the project and this will be recorded in the management table.

Our risk management process will involve monitoring and reviewing the risks that we initially identified throughout the project. This will involve observing whether they are occurring and if they are then we will reevaluate their impact and the effectiveness of the current mitigation strategies. This reevaluation may result in new minimisation methods being applied to alleviate the impact of some situations. When we encounter a risk and find new remedies, we will note them in the management table using the risk ID to reference them. It is also recognised that new risks will crop up throughout the project, especially due to the potential change in user requirements that is anticipated in a project managed through Agile strategies. These new risks will need to be added to the register along with the week that they were discovered. Our main risk manager (Amber Faruque) will be responsible for ensuring risks are noted when found and when new mitigation tactics are being used. Risks that have taken place and have been effectively managed with our previous strategies will not be noted.

Mitigation risk register						
ID	**Type**	**Description**	**Likelihood**	**Severity**	**Mitigation**	**Owner**
R1 W1	Organisation	The project may not be prioritised due to individual's disorganisation. The project is also a university assignment which means team members have other modules to focus on too.	High	Medium	Ensure that we have set meeting times that are suitable for everyone and have internal deadlines for subtasks. We will also check in on each other's progress regularly and use a kanban board to hold each other accountable.	Amber and Max
R2 W2	Organisation	Somebody may misunderstand project requirements.	Medium	Low	Ensure that we are communicating with each other on tasks and that each task gets reviewed by a different member after completion. We will also constantly reference the task requirements and peer review each other's work.	Everyone
R3 W2	Organisation	Too much pressure on a single individual.	Low	Medium	Ensure equitable work distribution. We will each take on approximately 15 marks worth of work.	Amber
R4 W1	Organisation /People	People may be unable to meet deadlines.	Medium	High	Since extending the deadline isn't an option, we will have an earlier internal deadline for the project. We will also be reasonable when taking on tasks and ensure that significant tasks such as coding are monitored.	Charlotte
R5 W3	Organisation - scalability	Our project is going to be passed to another team and there is a risk that they won't be able to understand our code.	Medium	High	Making code readable by using standard naming principles and writing useful comments and docstring. Also ensure that the writeup is clear and justified.	Melike
R6 W2	Organisation	Prioritising certain deliverables over others. For example, getting distracted by the coding and not completing the documentation and writeup as we go.	High	Medium	We will ensure that people are distributed across tasks and that every task has somebody assigned to it. Use the github kanban board to track that every task has somebody assigned.	Amber
R7 W3	Organisation	Adding unnecessary detail to our implementation or to our documentation that will not benefit us, will eat into the limited time that we have.	Medium	Low	We will follow a KISS strategy. When coding, we will prioritise the key features mentioned by our client. When writing documents, we will refer to the brief and the requirements document.	John

R8 W2	People	Somebody may leave the university or have to take leave due to personal issues or illness that leads to them being unable to continue working on the project.	Medium	Low	Ensuring that none of the critical tasks are on one person will reduce low bus factor. Clear task assignment on the kanban board will allow us to easily reallocate work if necessary.	Amber
R9 W2	People	Disagreements between team members. This could occur in the form of different ideas in the direction of the project.	Medium	Medium	If there are disagreements within a subgroup we can present them to the entire group and get unbiased input on which approach will best fit the requirements.	Amber
R10 W2	Technology	The risk of using new software (libJDX, IntelliJ IDEA and GitHub) for the first time.	Low	Low	We will take time to understand the new software we are using before using it. This can be done by watching tutorials, practicing and asking each other questions.	Charlotte and Zhuoran
R11 W3	Technology	Relying on softwares: relying on the version control software.	Low	High	We are relying on software that is industry standard so is reliable. However, the impact would be high so we will locally store the code as well as storing it in a Git repository.	Zhuoran
R12 W2	Technology	Relying on softwares: relying on the java development tools - LibJDX game engine.	Medium	Medium	We are relying on software that is industry standard so is quite reliable.	Charlotte
R13 W3	Technology	Collaborative coding issues. Using GitHub will allow us to collaborate on code. However, this comes with issues such as merge conflicts.	Low	Medium	We will each watch the VLE videos on how to use GitHub and consult with one another about the best approach when merge conflicts occur.	Charlotte
R14 W1	Technology - scalability and changing requirements	The client is contractually entitled to change the game requirements.This is a risk as it could compromise our game quality and timeline. Alongside this, the project will be built upon by another team which may involve them shifting our current code.	Medium	Low	We will plan before we start our code. This will ensure that the backbone of our code isn't built upon a requirement that will change. We will also take the appropriate steps to make our code modular and readable so that a new team could take it on with ease.	Max and James
R15 W1	Resource	Having no budget means we will only use free assets. This poses risks with licensing and could threaten getting our work done in time.	High	Low	Before starting the project, we researched the free tools that we could utilise. This involved thorough research into the best libraries and assets available.	Charlotte

R16 W1	Resource	Time restrictions. We only have six weeks to do part one of the project.	Medium	Medium	We will prioritise implementing the required features. The first part of this project only requires a very basic version of the game that doesn't include every feature.	John and Charlotte
R17 W2	Resource	Hardware and software limitations: we must code in java and use GitHub for version control. No additional hardware is allowed. AI usage also has restrictions.	High	Low	Our plan for implementation will be simple and fit the restrictions. Also ensure everybody is aware of the restrictions.	Max and James
R18 W2	Security	Using free assets.	Medium	High	Ensure that we have correct licensing.	John
R19 W1	Security	Our game and documentation shouldn't be visible to other teams.	Low	Medium	The repository will be private until it is time to submit. Our documents are also private.	John

Management risk register

ID	Type	Description	Severity	Management	Owner
R13 W4	Technology	Issues occurring when merging.	Low	When implementing new features, a new branch is always created and only merged to the main branch when tested.	Charlotte
R9 W4	People	We encountered a disagreement as one member thought that another wasn't contributing enough.	Medium	This resulted in a shift in roles so that arguments don't occur between the same members.	Amber
R20 W4	People	A group member not contributing as much as others.	Medium	Increase in communication when distributing the workload.	Amber
R21 W4	people	People have realised they do not fit with the roles they have been assigned and decided that it is best to shift to different roles.	Low	Accept that there will be flexibility of roles throughout the project and that dynamic shifts will optimise our productivity.	Melike
R8 /R4 W6	People	Somebody encountered a personal issue which meant they were unable to complete their section.	Medium	The person ensured that they communicated their issue as soon as possible. That piece of work then got reassigned and completed.	Everyone
R6 W6	Organisation	Our website was left until the last week to be completed.	Low	Multiple group members worked together to get it done in time.	Charlotte