Describing and Justifying the risk management process.

We came up with a list of risks, which fall under one of the types of risks documented below [1]. Then we have tried to categorise the likelihood and severity of the risk into low, medium or high in order to judge the impact these risks may have on our development timeline. Then we have agreed on what should be done to mitigate these risks and who should be taking ownership to make sure the risk can be mitigated or resolved.

Risk Types

Estimation
This risk involves concerns resulting from an underestimation of the time taken to complete certain sprints of the project, for example the time spent on implementation or for a certain amount of documentation. [2]

People
The people risk in this project will result from team members becoming unavailable for whatever reason, for example if a member or number of members falls ill or fails to complete work. This could be a product of poor team relationships or morale.

Requirements
The requirements risk comes from gaps in the requirements document or changes in requirements due to reworks in the design or changes in stakeholder needs. Requirement risks also include not referring to the SRS document enough in the implementation process.

User
User risks come from the users and/or stakeholders being unsatisfied with the scope of the project. This could be a result of lack of engagement with potential users or users having problems with the product upon release.

Technology
This risk concerns the risks associated with the limitations of technology used in the program, such as not being able to process as many calculations as expected. An indication of this could be frequent reporting of errors when running the program on certain hardware.

Tools
A tools risk could be a result of limitations posed by the tools for the project, such as inefficient code being generated or software tools being unable to work together cohesively. An indication of this could be outdated software and errors when compiling the program.

Definitions and Acronyms

- ID: identifies each risk in the register
- Type: describes the category of risk the identified risk falls under
- Likelihood: describes the probability of the risk occurring as L for low, M for medium and H for high.
- Severity: describes how serious the consequences of the risk occurring will be, as L for low, M for medium and H for high.
- Mitigation: describes the action that will be taken if the risk does occur/ to take to prevent the risk from occurring, in order to reduce the severity of the consequences of the risk.
- Ownership: identifies who will be responsible for implementing the mitigation action if a risk occurs.

Risk Register

ID	Type	Description	Likelihood	Severity	Mitigation	Ownership
R1	People	A team member falls ill during the week [1]	M	L	Other team members to take over tasks until the person is feeling better	All
R2	People	A team member drops out from the course	L	H	Other team members will have to take over the tasks that team member was working on	All
R3	People	A subteam is unable to complete their work during the week	M	M	Workload can be switched between team members and deadlines extended in conjunction with new work	All
R4	Tools	Team needs to learn potentially new game engine software and libraries	H	M	Presentation created to help newcomers understand the software	Seyi
R5	Estimation	The project becomes more complex than originally planned	L	H	Frequent updates between development team as to how much progress has been made and if more is needed than planned	Seyi, Alex, Will
R6	Requirements	Requirements become irrelevant once implementation begins	L	L	Updating requirements document if new requirements are found or if old ones are no longer needed.	Meg, Ben
R7	Requirements	Requirements are too minimal or too demanding for the time given for implementation	M	M	Careful and realistic planning of requirements.	Meg, Ben
R8	Requirements	Final product does not meet the specified requirements	L	M	Frequent referrals to the requirements document during implementation	Seyi, Alex, Will
R9	Tools	Poor quality code leading to bugs and logical issues in the	L	M	Frequent testing of any new pieces of code and how they	Seyi, Alex, Will

		product			work in the greater program	
R10	User	Project does not meet stakeholder expectations	M	H	In-depth interview with stakeholder to be held to gather requirements	Jamie, George
R11	Requirements	Stakeholder requirements change during implementation	M	M	Frequent updates on progress with stakeholder	All
R12	User	Documents relating to the project are not able to be accessed by the users/stakeholders	H	H	Website created to collate all project-related documents	Meg
R13	Technology	Systems are unable to meet the NFRs agreed upon	L	H	Improve the efficiency of the code	Seyi, Will, Alex
R14	User	Users are dissatisfied with the overall scope of the project, e.g unhappy with the pacing, gameplay, visuals, etc.	L	H	Conduct surveys and beta test builds and implement feedback given by users	Seyi, Will Alex
R15	Tools	Errors caused by tools not integrating together well	L	M	Check for updates on the tools used, check the documentation of the tools	Seyi, Will, Alex

References

[1] “Understanding risk management in software development”, door3, 2022, Jan. 25. Available: https://www.door3.com/blog/understanding-risk-management-in-software-development-7-common-risks

[2] I. Sommerville, “Project Management” in *Software Engineering,* Pearson Education, 2015