Group 3

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Risk assessment and mitigation

5a)

   Our team followed a systematic management process divided into 4 stages: Risk Identification, Risk Analysis, Risk Planning, and Risk Monitoring. This ensured we had an effective and secure plan.

1. Risk Identification: we categorised risks into three primary areas: project risks, product risks and business risks. Project risks affect the project timeline or resources. The product risks affect the quality of the game. Business risks affect the team developing the software. By anticipating potential setbacks in each of these areas, we ensured a holistic view of the risks that could disrupt the project.

2. Risk Analysis: each risk was assigned a likelihood and severity. This helped us realise which needed immediate attention and also eliminate the ones with very low likelihood and severity since they don't really affect the project. For example, timeline slippage was identified as a high-likelihood and moderate-severity risk, which made it a top priority for mitigation efforts.

3. Risk Planning: we created the risk register, where we came up with avoidance strategies for the different risks and also mitigation strategies. We also identified team members responsible for addressing specific risks depending on the roles they play in the project. We allocated at least two people per section to ensure we have a low bus factor.

4. Risk Monitoring: We implemented a continuous risk monitoring process to identify any changes in risk status. For instance, in case of engine limitations (like Java malfunctioning), we resolved the issue by reinstalling Java. This proactive monitoring ensured that risks were addressed before they escalated. We also worked closely during our team meetings and practicals, reporting what was going on in each section of the project to avoid redundancy. In addition, we kept all the files shared on Google Drive or GitHub so everyone has access to them and they don't get lost.

Risk Register Format:
Our risk register is a tabular document that includes the following columns for each risk:
- ID: a unique number assigned to each risk for tracking purposes.
- Type: the category of risk (Project, Product, or Business).
- Description: a brief explanation of the risk.
- Likelihood: an estimate of how likely is the risk to occur (low, moderate or high).
- Severity: an estimate of the impact it would have on the project (low, moderate or high).
- Mitigation: steps to take to reduce or manage the risk.
- Owner: the person or persons in charge of mitigating the risk depending on roles.

5b)

Risk Register

ID	Type	Description	Likelihood	Severity	Mitigation	Owner
R1	Project	A computer from the team breaks/stops working.	M	M	Use a computer from the university labs/get the computer fixed. Save work often.	Entire team.
R2	Project	Timeline slippage, time is wasted.	H	M	Try to plan ahead on timings, ask for assistance	Leader
R3	Project	Requirements are not met or with errors.	L	H	Make sure to regularly reference the requirements throughout development. Check requirements after being added.	Leader
R4	Product	Getting bugs in the code.	H	M	Check the code and figure out where the bug is.	Joel, Euan
R5	Product	Having engine limitations. For example: a computer cannot run a program because of its system.	H	M	Try using another computer. Or look at what options you have for your system.	Entire team
R6	Product	Having unoptimised code.	H	M	Check code in pull requests, and ensure code is working without memory leaks or similar.	Joel, Euan
R7	Business	Getting ill. For example: catching	H	L	Try to work as long as you	Entire team

		a cold or getting an injury.			are capable. Delegating your work to a teammate, ensure work is available online.	
R8	Business	Teammates may have disagreements.	M	M	Ensure people feel listened to, and try to find solutions between members. Ask for help from lecturers.	Entire team
R9	Business	Having miscommunications between the teammates	L	M	Sit down and listen carefully to each other's opinions, and have a third person as a moderator.	Entire team
R10	Business	Competition between teams	M	H	Try to keep work within the team, do not discuss methods with other teams, and try to ensure work is not needed in competition.	Entire team