Risk Assessment

ENG1 Team 9

1. Jacob Dicken
2. Bertie Cartwright
3. William Croft
4. James Dovener
5. Henry Chan

This document outlines the risk assessment phase of the development process of our game, justifying the risk management process that we followed and the format of our risk register.

Risk Management Process

The risk management process our team follows will involve 5 main steps: Plan and Identification, Analysing, Response Strategies and Monitoring.

In the planning stage, we will as a team identify and evaluate possible risks to the project. This is so that we don't run into any risks later in the project that we were not aware of, which could slow development.

The next stage, analysis, involves firstly placing each of the identified risks into different categories which will be denoted in the type table of our risk register. Then as a group we evaluated the likelihood of each risk occurring and the severity if that risk was to occur. These two ratings range from high to medium to low. This is so we can decide how much time to dedicate to avoiding certain risks, so that none is wasted on risks that have a very low chance of happening, or will have little impact to the project.

The next stage, Response Strategies and Monitoring involves finding the best actions to take against possible risks, and verifying that risk responses are properly implemented, as well as continuously tracking identified risks and assessing their status.

In the risk register we are using, the response strategies we use will be mitigation and avoidance strategies as well as contingency plans where applicable. This stage is implemented so that we have a good idea of how to handle any risks that come up and so that we can make sure they are dealt with properly.

The risk register we will be using is a table, with the columns:

- ID
- Type
- Description
- Likelihood
- Severity
- Avoidance/Mitigation/Contingency Plan(s)
- Owner

The ID column contains a unique ID for each risk which will help us more easily lookup and reference each risk. The type column contains the type of each risk which helps us know what part of the project the risk corresponds to. The description column contains a short description of what the risk is. The Likelihood column will show how likely a risk is to occur, the Severity column details how severe the risk would be if it was to occur. Both the likelihood and severity columns have a rating range of Low to Medium to High which are colour coded from green to yellow to red to ensure the information was better displayed to the team.

The Avoidance/Mitigation/Contingency Plan(s) column details a strategy/strategies for how the risk will be responded to and the Owner column designates ownership of a specific risk to a person on the team. The owner's job is to assess the likelihood and severity of that risk at a frequency of at least once a week. Then the owners were to report any changes to the team during our weekly meeting so that we could agree as a team that these values needed to be changed and if any of our strategies to deal with the risk needed to change or be enforced. Who owned what risk was decided by what their main role was in the team and which type of risk this role was closely linked with (for example the project lead was assigned “project” type risks). This ensured that the owner of the risk was familiar with what the risk meant and its effects, meaning that they will be better able to monitor that risk over the course of the project.

Risk Register

ID	Type	Description	Likelihood	Severity	Avoidance/Mitigation/Contingency Plan(s)	Owner
R1	Project	One or more members of our team are unable to participate.	Medium	High	**Mitigation:** Make sure our bus factor remains stays at least 2 by having at least 2 people with a complete knowledge of any part of the code, documentation and the write up.	Bertie
R2	Product	Use of poor quality Libraries.	Low	Medium	**Avoidance:** Perform careful research of third party libraries before implementing them into our code. Ensure libraries are well tested and reasonably popular to minimise risk.	Jacob
R3	Product	Code structure and readability reduce as the project progresses.	Low	Medium	**Avoidance:** Ensure project architecture is well planned and code is reviewed before the final version is committed.	Henry
					Mitigation: Comply with relevant style guides and ensure code is well documented.	
R4	Product	Product is unable to be built/run on the required hardware or Operating Systems.	Low	High	**Avoidance:** Check with our customer if they have specific requirements for device specification or operating systems the project must be compatible with.	Jacob
					Avoidance: Periodically review the performance of the project using benchmarking and ensure CI systems attempt to build the project for multiple OS targets.	
R5	Requirements	Requirements that are written don't correspond to what the customer wants.	Medium	High	**Avoidance:** Meet regularly with the customer and specifically discuss the user level requirements with them. Then carefully create the system requirements as a team based on the user requirements that have been gathered.	William
R6	Requirements	The customer changes the requirements causing us to have to rewrite large parts of	Low	High	**Mitigation:** Ensure that the architecture of the project is modular and when designing it, ensure the possibility of expansion and adding features is maintained.	William

ID	Type	Description	Likelihood	Severity	Avoidance/Mitigation/Contingency Plan(s)	Owner
		the game, possibly under limited time.			**Mitigation:** Use an agile software development methodology, which will allow for flexible response requirements changes late into the project. This encompasses meeting with the customer frequently, which should reduce the number of the changes that arise later on. **Contingency:** If there is not enough time to make the changes or the changes required are closer to a prior version we should fallback to that prior version of the solution.	
R7	Project	Misalignment between member's strength and role.	Low	Medium	**Avoidance:** Early on in the project we should try to determine our team members strengths and assign roles to them that best fit those strengths. **Mitigation:** Assigning more than one member to the same role to leverage different skills.	Bertie
R8	Requirements	Unclear or ambiguous requirements.	Low	High	**Avoidance:** Make sure requirements are carefully written from the start. **Mitigation:** If a team member feels they are ambiguous or unclear, make sure to clarify this with the rest of the team and the customer if necessary.	William
R9	Product + Project	Use of tools that are overcomplicated or only one team member understands.	Low	Medium	**Avoidance:** Have discussions between the team about which tools we've used before when choosing one. **Mitigation:** If a new tool is chosen and it is complex or some team members are unfamiliar with it, hold a meeting to show all team members the basics.	Jacob
R10	Project	Poor time management and missing the deadline.	Low	High	**Avoidance:** Prioritise working on the fundamental requirements of the project before spending time on extra features. **Mitigation:** Using a gantt chart from the start, allows time buffers between tasks to accommodate sudden events.	Bertie

ID	Type	Description	Likelihood	Severity	Avoidance/Mitigation/Contingency Plan(s)	Owner
R11	Project	Lack of communication within the team causes issues.	High	Medium	**Avoidance:** Set up a quick and easy communication system for the team to use. **Mitigation:** Team members should clarify if they have any questions or misunderstandings.	Bertie
R12	Project	Project schedule is not defined or understood.	Medium	Medium	**Avoidance:** Create a clear project schedule and assign tasks to each team member. **Mitigation:** Hold regular meetings with the team to check on task progress and ensure new tasks are set.	Bertie
R13	Project	Scope of project increases and results in some requirements not being met in time.	Medium	High	**Avoidance:** Clearly follow the project schedule and ensure that all requirements are first met before extra features are discussed or worked on.	Bertie
R14	Write Up	Parts of the writeup are poorly formatted or hard to understand.	High	Low	**Avoidance:** Keep the format of the writeup segments fairly consistent throughout and make sure the format is easy to understand, e.g. paragraphs should contain sentences of information that links together. **Mitigation:** Ensure that all parts of the writeup are proofread by the writer and at least one other member of the team.	William
R15	Project	There is an uneven workload within the team which can lead to some members not finishing their assigned tasks leading to parts of the project not being completed.	Medium	Medium	**Avoidance:** Try to ensure that the work is split evenly amongst the members of the team **Mitigation:** If a team member feels like they have too much work or can’t complete the work they have been assigned, they should report this to the team so the other team members can aid them in doing their tasks.	Bertie

ID	Type	Description	Likelihood	Severity	Avoidance/Mitigation/Contingency Plan(s)	Owner
R16	Project	Creative differences between team members causes frustration between team members and delays in the work being done.	Low	Medium	**Avoidance:** Before development and adding new features try to ensure that all members agree on what needs to be added and how it should be done. **Mitigation:** If a team member still disagrees on how or what should be done, the team should hold a vote on what should be done.	Bertie
R17	Product	The game has multiple bugs and performance issues that go unnoticed during development.	Medium	Medium	**Avoidance:** Make tests for all features so that bugs are more easily spotted during development. **Avoidance:** Note down any bugs that are found so that all team members know what bugs there are to fix. **Mitigation:** Ensure the code is properly documented and formatted which will help in tracking down and fixing the source of the bugs.	James
R18	Project	The project that we take over has poor libraries, coding practices, documentation or deliverables.	Medium	Medium	**Avoidance:** Ensure that we properly analyse each part of every project and choose the project which has the best mix of code quality and deliverables so that our team will have an easier time developing it. **Mitigation:** If the project we are going to choose has any of these problems, make sure we have a plan to fix these problems before we confirm the choice of the project. **Mitigation:** If we didn't notice any of these problems before choosing the project, enact the risk prevention plan for the risk/problem that we find.	Bertie