Risk Management

Ben Howard <bh1219@york.ac.uk>
Cai Hughes <cabh500@york.ac.uk>
Harry Richardson <hr1040@york.ac.uk>
Ivan Ndahiro <in597@york.ac.uk>
James Sutton <jis509@york.ac.uk>
Yuzhao Liu <yl5164@york.ac.uk>

Identification Process

To identify the risks that may appear during the development of the project, we will use an iterative risk management process in the order of Identification, Analysis, Planning and then Monitoring.

First, Identification. In this stage of the process, we will analyse the systems we intend to create, how the system will be used by the customer and how the people in our team may be able to achieve the outcome we desire from those systems. Through Analysis, we will find risks that may occur from the design of the system, or how we have organised our team to work on the project.
We will assign these risks to a type, and provide a description to them so we understand what they are.
The types of risks are:

- **People**: Risks that involve problems caused by people, such as being unavailable to work on a system.
- **Project**: Risks that involve the workings of the project, such as the libraries we use.
- **Product**: Risks that may impact the final product that has been requested, such as what devices the game needs to run on.

Risk register (or one register per category)

Secondly, we will Analyse the risks we have identified, and match both a likelihood (**L**ow, **M**oderate, **H**igh) and a severity (**I**nsignificant, **T**olerable, **S**erious, **C**atastrophic) based on the judgement from our team. This will be used to identify the risks that need more attention than the others, based on how likely they are to occur and the potential risks they bring.

Risk ownership strategy

Thirdly, with the Planning stage we will devise different strategies for each risk on how we can prepare for the risk in advance through avoidance strategies, mitigation strategies or contingency planning.

- **Avoidance strategies**: Preparing strategies to avoid the issue where possible by carefully selecting the project suppliers, such as the libraries, and avoiding depending on methods that involve a low bus factor.
- **Mitigation strategies**: Reducing the impact of risks that can't be avoided, such as a team member being unavailable. To avoid risks like these becoming issues that impact the project, we will prepare strategies to avoid them.
- **Contingency plans**: Fall-back plans in a case where the risk does occur, such as using a simpler solution that may provide fewer features that we know works correctly with our project.

Risk reviewing plan

Finally, Monitoring. With risk monitoring, we will provide each of the risks with someone who will overlook them and will return to the risk regularly to re-assess their likelihood and severity to ensure that it is accurate. We will also have a meeting once every so often to ensure that every team member knows of any risks that have been altered or added.

Risks will then continue to be added as they are discovered, and altered as needed iteratively as time passes.

Risk register, a systematic tabular presentation of risks, including likelihood, impact, mitigation and ownership has five main advantages in project designing namely Improved visibility, Better risk management, Better decision-making, Increased accountability, Better project planning. We can continue adding new risk findings with the process of coding

Risk Register

ID	Type	Description	Likelihood	Severity	Mitigation	Owner
R1	People	A team member is unavailable for an aspect of the project.	M	S	Involve at least 2 members of the team for each aspect.	Ben
R2	People / Project	The team member that implemented a feature is unavailable.	M	S	Ensure that at least 2 team members understand how the feature implementation works.	Everyone
R3	Project	Documents and code are lost without a backup.	L	C	Make sure that at least one member regularly checks on version control and keeps a local backup.	Everyone
R4	Product	Project does not run on both Windows and Linux.	M	T	Test the project on both Windows and Linux systems.	James
R5	Product	New features don't impact load times.	L	S	Ensure that the new features are implemented optimally and don't impact the performance (significantly).	Everyone
R6	Product	Make sure the game scales across different resolutions and screen sizes and images are easily distinguishable and accessible (visual impairments or colour blindness).	M	T	Test the project with varying resolutions and devices.	Everyone
R7	Product	Website going down for any reason.	L	C	Find an alternative site to host the website, while regularly checking on the current condition.	Ivan
R8	People	Team members struggling to finish before, or missing deadlines.	M	S	Let other members know if you think you are unable to complete it on time so that they could help out.	Everyone

R9	Product	Significant bug(s) in the code were discovered close to the deadline.	M	S	Make code as readable as possible including comments and documentation so everyone, not just the author can debug.	James
R10	People	Deadlines were not accurately set, causing time crunch	M	S	Ensure that everyone knows what they are doing and that we'll be able to complete it before the final deadline.	Everyone

With the processing of coding, we find some new risks which are not in the risk register. so we need to update the risk register to manage risks.

R11	People / Project	Code is not easily understood by other team members.	M	T	Make notes to assist other members to understand or follow a consistent coding style guide.	Everyone
R12	Project	Having the incorrect java version in our development environment, causing errors when we try to run the program.	M	T	Ensure that our selected java version functions with the libraries we are trying to use and that everyone is using the same version.	Everyone
R13	People	Group members do not know what has changed within the project as changes are made.	M	S	Setting up meetings with group members regularly to help members track any changes. Ensure that commits to GitHub are explained enough.	Everyone
R14	Project	Spending too much time on additional features.	M	S	Ensure that the group is focusing on creating the project based on the requirements we defined at the beginning.	Everyone