Assessment: 1

Deliverable: Risk assessment and mitigation

Team Name: Team 8

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Risk Assessment and Mitigation

Risk format and level of detail

A risk assessment is a necessary part of project management to facilitate the mitigation of issues that could occur during the project (whether or not the issues do occur is irrelevant). As uncertainty grows, this document can be referred to, to track and monitor known issues that could arise.

During the course of this project, this document can and will be updated to include new risks as they are identified. The risk management process (1. Risk identification 2. Risk analysis 3. Risk planning 4. Risk monitoring) will be detailed in this document. To determine ways we could carry out the risk management process, research was utilised [1-3].

To identify risks, as a team, we discussed ways in which the project could be affected by various issues and the ways in which we could ensure their impact could be minimised. Minor and very low probability risks were eliminated from the discussion given their improbable impact on the project. Then the discussed risks could be given an ID, type, description, likelihood, severity and owner. The risks were then stored in a risk register (which can be seen below) of multiple tables (one for each risk category). Alongside each risk in the risk register, is the way in which we plan to mitigate the given risk.

By sticking to a rigid structure for the risk register, we will ensure that the owners of each risk will be able to easily access, monitor and re-assess their risks on a regular basis. An assigned ID to each risk also provides fast, direct access to risks when referencing them during risk reporting. Find below the ways in which we have categorised risks:

Category:

- Technology/Tools - Risks which are a result of software or hardware (tools)
- People - Risks that are a result of a person's actions
- Requirements - Risks which are a result of requirements or changing requirements
- Estimation - Risks as a result of estimating the resources required

Type: (Note it may be valid for risks to have multiple types)

- Project - Affects project schedule or resources
- Product - Affects product completeness/quality
- Business - Affects the organisation procuring/developing the software

Likelihood:

- **L**ow - A slim chance of occurring
- **M**oderate - A moderate chance of occurring
- **H**igh - A considerable and probable chance of happening

Severity:

- **I**nsignificant - Unlikely to have an affect on the project
- **T**olerable - Effects of the risk can be managed
- **S**erious - Would cause a considerable amount of problems to the project
- **C**atastrophic - Could cause extensive and possibly irreversible damage

Risk Register

Owners

Code-related and version control risks - Charlie & Josh
Documentation-related risks - Matt & David
People-related risks - Matilda
Project schedule risks - Ionut

Technology/Tools

ID	Type	Description	Likelihood	Severity	Mitigation	Owner
T01	Project, Product	Version control mishap (code lost/overwritten).	L	C	Ensure all team members understand version control. Separate team members onto branches. This way, in the event a mishap occurs, the pull request can be reversed.	Charlie
T02	Project	Documentation loss.	L	C	Use Google drive file history and make backups of all documentation.	David
T03	Project	Documentation versions are lost.	L	T	Ensure versioning of documentation is clear and stored in a separate folder.	Matt
T04	Project	Compile errors due to software (unrelated to code).	M	T	If compile errors occur that are seemingly unfixable, try compiling in a different environment or request another team member's help.	Josh
T05	Product	Game runs slow on customer hardware.	L	S	Make a low-intensity 2D game on a (relatively) low level framework. Ensure code is efficient and runs logically correctly, regardless of framerate.	Charlie
T06	Product	Assets are lost.	L	S	Push/backup created	Matt

					assets as soon as possible.	
T07	Project, Product	GitHub server-side issues that prevent access to working versions of code.	L	C	Keep local backup of code and separate cloud backup. Work can resume without GitHub.	Josh
T08	Product	A new version of the framework/libraries we are using does not work correctly or is broken.	L	C	Use gradle to maintain the same framework and library versions throughout the creation of the project.	Josh

People

ID	Type	Description	Likelihood	Severity	Mitigation	Owner
P01	Business, Project	Team member unavailable due to illness.	M	S	Assign multiple people to each project task (high bus factor).	Matilda
P02	Business	Meeting chair becomes unavailable.	M	S	Have a ‘shadow’ meeting chair that can run meetings.	Matilda
P03	Project, Business	A major risk is not identified by the team.	M	C	Frequently consider risks to the project and product so they can be identified and added to the risk assessment.	Matilda
P04	Project, Business	Team members are unavailable to attend all meetings due to personal responsibilities.	H	T	Ensure timetabled meetings are used effectively and talking points of meetings can be accessed by those that can not attend.	Matilda

Requirements

ID	Type	Description	Likelihood	Severity	Mitigation	Owner
R01	Product	Misunderstood requirements. E.g.	M	S	Make sure requirements are	Charlie

		implementing a feature incorrectly.			unambiguous and are checked through frequent communication with the customer.	
R02	Project, Product	Platform change required (need to move to unsupported platform).	L	S	Use a framework that supports compiling for multiple platforms.	Charlie
R03	Product	Major features asked to be removed.	L	S	Create a game with a strong separation of concerns (highly modular code).	Josh
R04	Project, Product	Product requirements change or new requirements are added.	H	T	Have highly modular code which can accommodate changes.	Josh

Estimation

ID	Type	Description	Likelihood	Severity	Mitigation	Owner
E01	Project	Incorrectly assigning deadlines (overrunning).	H	S	Allow plentiful time between team deadlines and customer deadlines so that timings can be adjusted.	Ionut
E02	Product	Due to the short timeframe to produce the project, required features may be missed.	H	S	Ensure the base of the product is implemented (that is necessary components) so at least a functional product can be shown.	Ionut

References

[1] JavaTPoint. *Risk Management*, javatpoint.com. [Online]. Available: https://www.javatpoint.com/software-engineering-risk-management . [Accessed: Oct. 20, 2020]

[2] JavaTPoint. *Risk Management Activities*, javatpoint.com. [Online]. Available: https://www.javatpoint.com/software-engineering-risk-management-activities . [Accessed: Oct. 20, 2020]

[3] MITRE. *RISK MITIGATION PLANNING, IMPLEMENTATION, AND PROGRESS MONITORING,* mitre.org. [Online]. Available: https://www.mitre.org/publications/systems-engineering-guide/acquisition-systems-engineering/risk-management/risk-mitigation-planning-implementation-and-progress-monitoring . [Accessed: Oct. 20, 2020]