5. Risk Assessment and Mitigation

Team 10 | YorKorsairs

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A. Introduction

Introduction

- The risk management process can easily be broken down into 4 simple stages. The first step is to identify all possible risks and categorising these risks with 4 different headings (technology, people, requirements, estimation) [1].
- The majority of these risks will be based on and associated with our requirements, with each requirement being paired with a risk in the requirements table.
- The risks of people will be associated with the commitments and involvement of people within the team and the people involved with the project.
- Technology risks relate to issues with software and hardware and will be based on the justifications made about our chosen architecture and the technological requirements.
- Estimation risks will deal with the deadlines not being reached and how these situations will be handled. The risks will be identified as a group using our requirements, our understanding of the architecture that we have chosen and the overall plan for the project (the lifecycle model and work distribution) as a basis for risk identification and judgements about each risk.

Justification

- Each risk will be given a likelihood and severity (on a scale of low/medium/high) based on how likely the risk is to occur and how bad the effect of each risk will be. These variables will state how each risk is managed. This exercise will depend heavily on the personal judgments of the team members associated with the risks.

- The management of risks will involve coming up with plans to avoid and mitigate each risk and also have a contingency plan in the event that avoidance and mitigation are not enough to sustain the development of the project. This will require additional planning and heavy discussion between team members in order to come up with the most optimal solution to each problem and avoid any major disruption within the overall project plan.

- Once a plan has been made for each risk, the people associated with that risk will be assigned as risk owners who will regularly make changes to the severity and likelihood of the risks depending on their judgement and involvement with the risk. The changes to the risk analysis will be reported during weekly meetings by the risk owners so that team members are inclined to not neglect monitoring risks.

B. Risks

People					
ID	**Description**	**Likelihood**	**Severity**	**Owner**	**Mitigation**
rP1	Website designer becomes unavailable	Medium	Medium	Tom	Attempt to inform the group and have someone else with website design skills to cover up the work
rP2	One or more programmers are unavailable	Medium	High	Sam	Attempt to warn the group and do as much work as possible in advance, if not temporarily assign second person to work on their code
rP3	Whole team becomes occupied/busy (e.g. due to exams)	High	Medium	N/A	Reduce workload for the week and redistribute work to next week
rP4	One or more people can't attend a meeting	High	Low	The people who miss the session	Report the completed work in the group chat before the meeting so that the work done can be accounted for
rP5	Low morale/burnout amongst team members	Medium	High	N/A	Distribute work to accommodate team members who are burnt out or reduce workload for the week

Technology					
ID	**Description**	**Likelihood**	**Severity**	**Owner**	**Mitigation**
rT1	Game is overly processor dependant/drains battery	Low	High	Ben	Research into optimisation methods that utilise other aspects e.g. utilising the gpu
rT2	UI/Game library does not support customer hardware	Medium	High	Omer	Check before using that the software is compatible. Research into other libraries as back up
rT3	Game window not mapped to monitor correctly	Medium	High	Adam	Know the specifications of the monitor prior to the event, or if not possible, have the game window in a fixed size
rT4	Bugs found within the	Low	Medium	Tom	Work around the bugs as best

	game library				as possible, if they still prevail consider changing library if necessary
rT5	Bugs found within programs external to game	Low	Medium	Ben	Work around the bugs as best as possible, if they still prevail consider changing tools

Requirements					
ID	**Description**	**Likelihood**	**Severity**	**Owner**	**Mitigation**
rR1	Game is not suitable for target audience (children and possibly parents)	High	Medium	Sam	Remove content from the game until suitable for targeted demographic, gain second opinion to help get perspective
rR2	Input that gives player unfair advantage is found	Medium	Low	Omer	Identify the code giving players access to feature and and revise/remove it
rR3	No support for controllers in time for deadline	Medium	Low	AJ	Attempt to work on controller support parallel with keyboard controls, else avoid working on if higher priority task incomplete
rR4	Game does not accommodate colour blind players	High	Medium	Sam	Change the colours selected for assets and sprites, ask for opinion from colour blind test users
rR5	User finds game too difficult	Medium	High	N/A	Remove unnecessary content, reduce health of enemies and/or increase player health
rR6	Game takes longer than 10 minutes/ less than 5 minutes	Medium	High	Adam	Re-adjust character speed (increase/decrease travel time between points on the map accordingly)

Estimation					
ID	**Description**	**Likelihood**	**Severity**	**Owner**	**Mitigation**
rE1	Sprites are not completed in time for initial implantation	Medium	Low	Ben	Use placeholder sprites until sprites are completed
rE2	Team coding ships and	Medium	Medium	Tom	Ignore none essential functions/ attributes else, implement

	functions/procedures is underestimated				simple/abstracted replacement for it
rE3	Bugs and error handling takes longer than expected			AJ	Either assign more people to help, or if not possible, prioritise with other elements of work
rE4	Covid prevents team from co-operating in person	Medium	Medium	N/A	Move to an online format, whilst still attempting to use our XP model

References

[1] Sommerville, I., 2015. *Software engineering*. Boston: Pearson, pp.644 - 652.