

Risk Assessment

Mario

GROUP 28

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Likelihood and severity are rated as low, medium or high. Colour coding is used for each of these, with green indicating a low significance and red a high significance.

Likelihood

- **Low** likelihood risks will happen rarely. It is unlikely that these will be encountered during the project, and thus will likely have minimal impact on the development of the project.
- **Medium** likelihood risks will happen some of the time. They could appear during course of development but not very often, the impact of these risks is debatable depending on their severity.
- **High** likelihood risks will happen often, the best way to deal with these types of risk is to come up with good mitigation strategies, as having a high frequency of risks regardless of severity may impact development significantly.

Severity

- **Low** severity risks have only a minor detrimental effect on the game or project. These can usually be fixed easily and quickly.
- **Medium** severity risks have a larger detrimental effect. They may have a more lasting effect on the development of the project, or be more difficult for the user to ignore.
- **High** severity risks have a major effect on the project, or may prevent someone from playing the game at all. They may have a long process to recover from or cause lasting effects to the overall project.

Risks are sorted by severity, followed by likelihood. This means that they are generally sorted by overall significance.

Risks also have a risk type associated with them.

- **Technology** risks are related to the game's software or hardware; these mostly refer to the way the users play the game when it is completed.
- **Product** risks are related to issues with the overall design of the game, such as its controls, appearance and how efficiently it runs.
- **Personnel** risks relate to problems arising from the development team and stakeholders.
- **Implementation** risks relate to the creation and programming of the game, and risks that arise during development.
- **Business** risks are related to the cost and time constraints, and possible licensing issues which may occur when incorrectly referencing resources that we use.
- **Project** risks are related to the processes and situations that arise in relation to the functionality of the project. This may stem from organisational issues to the management of deliverables.

ID	Type	Description	Impact	Likelihood	Severity	Mitigation	Owner
R1	Personnel	Developers becoming unavailable during development	Parts of the Implementation could remain unfinished / untouched, which may lead to trouble with deadlines.	Medium	High	Assign multiple people to critical components to avoid single points of failure	Hugo Kwok
R2	Product	Elements of the project not being fully complete before the deadline	This could result in a poor / broken end product - possibly missing out on certain features that stakeholders require.	Medium	High	Ensure the game is at least functional; don't try to be overly ambitious to the detriment of the overall game	Sazidul Hoque
R3	Technology	Game not working properly on university hardware on open day	This would lead to the inability to promote the game - losing potential players, whilst also failing the requirement of being able to run on different hardware.	Low	High	Conduct proper testing on multiple operating systems and computers; test on university hardware before the event.	Anna Singleton
R4	Technology	Users playing the game in a way that causes it to crash	Progress within the game lost and player has to start again	Low	High	Conduct testing to find crash conditions; ensure that these conditions cannot be reached during normal gameplay.	Anna Singleton
R5	Design	Game cannot be played by certain users due to control problems	Lose potential players as they can't operate the controls	Low	High	Make sure controls are simple and can be easily learned within gameplay	Leif Kemp
R6	Design	Game cannot be played by certain users due to UI	Lose potential players as they can't understand the	Low	High	Ensure all graphics are clear to all users, eg. differentiate enemies by symbols	Hugo Kwok

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		problems	visuals			rather than colours to help colourblind players	
R7	Implem.	Scope creep; adding too many new unnecessary features beyond the scope of the project	Makes development time unnecessary longer, May lead to missing deadlines.	Medium	Medium	Ensure that the project brief is complete before adding extra features, don't keep working on a particular feature beyond diminishing returns	Leif Kemp
R8	Personnel	Specifications or requirements changing during project development	Time wasted on work that is no longer necessary and may lead to tighter deadlines	Medium	Medium	Maintain frequent communication with clients, ensure any requests are made with enough time to act upon them.	Joseph Frankland
R9	Product	Development tools and libraries not working as expected	Delay on progress. May lead to glitches or bugs on the product.	Medium	Medium	Be familiar with documentations of the tools being used; change or find workarounds if needed	Anna Singleton
R10	Product and Project	Code becoming difficult to read or update when picked up by other developers	May lead to difficult code maintenance and slow down development	Low	Medium	Ensure code is written clearly and complex code is commented	Anna Singleton
R11	Personnel	Product not being to the satisfaction of clients	May lead to significant increase in development time to satisfy clients, which may put pressure on developers due to deadlines.	Low	Medium	Maintain frequent communication with clients, ask for feedback after major changes are made	Joseph Frankland
R12	Product	Data being lost / mishandled	Detrimental effect on development,	Medium	High	Have proper documentation for backup to be	Sazidul Hoque

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			e.g. significantly slower the process			backtracked later if necessary	
R13	Business	Not following licencing agreements properly	Legality issues due to not providing evidence for use	Low	High	Always noting down when you use something with a licence and how you need to use it	Lucy Li

Risk identification and analysis

During our planning phase we laid out some of the more obvious risks that we thought could come up during the course of the project. After that we decided to create a few categories of risks that could come up, for example, risks that affect the final product, ones that affect the workflow of the product, risks that could arise due to the technology we have decided to use. Then from the categories we brainstormed some risks that can fall within them, after that we decided to whittle down risks that seemed too unlikely to happen as well as ones that would have such a small impact they don't need to be considered. To do this we wrote out the possible impact of each risk and if something was so small it would be removed. After writing down all the risks we needed to put the risks into categories for likelihood and severity. We decided on three different levels for these as it shows enough difference in each label but doesn't complicate it too much by oversaturating the labels and making it hard to decide which label to give to each risk. Next, we gave each risk a level of likelihood and severity and colour coded them in the table to make it easy to see just by looking how the risk is considered within the product. Once these had been finalised we decided to add a column to the table on how the impact of the risk would be mitigated if it did occur. These can either be something we do during the lifecycle of the project to lessen the chance or impact of the risk or something to be done if the risk actually occurs.

Risks that occurred

During the development, R1 and R2 had occurred the most out of all risks, it usually happens due to some scheduling issues among us and some underestimated time management, which left some unfinished work and delayed deadlines. However, by following the mitigation plan, we assigned multiple members to most of the tasks, so the amount of unfinished work is minimised. Even though the risk happens a lot, team members tend to give other members a heads up if work may not be completed within the deadlines, so that we can quickly reschedule the upcoming work and mitigate more delay on development. Other than these risks, R7 happened for a few times, for example, when we are working on the weather system, there were too many unnecessary different weather conditions that was planned to be worked on, thus also delayed our process, but since we followed the mitigation plan, we did not waste much time on doing unnecessary work and quickly cut down the amount of weather conditions to those which are necessary. This also leads to R8, but through frequent communication we've resolved the issues fairly quickly. Finally, R9 also happened a couple of times, where some certain features did not work as expected, thus we assigned more time to fix the issues by implementing an alternative method.