Risk Assessment

Group 12

Team 12

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A risk assessment is crucial for planning potential issues during a project, ensuring smooth execution with minimal risk of disaster. Our plan used techniques derived from Sommerville's[1] book, consisting of four steps: Identification, Analysis, Planning and Monitoring.

Identification

Our group began the identification phase of the risk assessment by brainstorming and using past project experiences to find initial risks during one of our meetings. Then, we categorised them into three different groups:

- ***Project*** - schedule or resource impacts, *e.g. staff turnover causing delays*
- ***Product*** - quality or performance issues of the developed software, *e.g. using flaky libraries causing lack of quality*
- ***Business*** - risks that threaten our team, *e.g. team conflicts*

Analysis

Once we had finished identifying and categorising risks, we had to consider each risk's likelihood of happening and its severity should it occur. Since this is a judgement call, the team members overseeing the risk assessment discussed these values for each risk. This was followed by a team discussion to make sure everything looked good.

Planning (Mitigation)

Now we had a list of significant possible risks and their analysis, we needed to come up with measures to avoid these risks. For some, we know that we can't avoid them so we come up with a plan to try and minimise the impact if it does happen - for example, assigning at least two members to each task in case someone falls ill - so the other person can efficiently take over.

Monitoring

It was decided all team members should monitor all risks for two reasons:

- The overall risk of the project is very low therefore it is not mission critical that someone monitoring the various risks on the risk register needs to be an expert in the given risk to make decisions based on it.
- Most of the risks span multiple aspects of the project, most team members' work spans multiple aspects of the project therefore everyone is affected by almost every risk so ownership should also be shared.

Register Format

Following the process from Sommerville's book[1], the risk register is a combination of the sub-tables created from each stage, with an ID column so each risk can be found more easily:

- ***Identification***: Type (Project/Product/Business) and Description (what the risk is)
- ***Analysis***: Likelihood (scale of how likely is it to occur- Low, Medium, High) and Severity (scale of the effect on the project if the risk happensLow, Medium, High)
- ***Planning***: Mitigation (measure taken to avoid/mitigate the risk)
- ***Monitoring***: Ownership (team member who will monitor this risk)

ID	TYPE	Description	Likelihood	Severity	Mitigation	Ownership
r1	Project + Product	Incompatibility issues between team members + customers with java version	L	H	Develop the game in Java 11 only, so all team members use the same version, and customers can run it too	All
r2	Project + Product + Business	Licensing issues with assets/libraries	L	H	Use known open source assets/libraries. Investigate into paying for licensed ones.	All
r3	Product	libGDX may not have the capabilities to full our requirements	L	H	Research other open source projects similar to ours that use libGDX, also consider other game engines	All
r4	Project + Business	Team members may not all have equal amounts of work allocated to them	M	M	Ensure that each person has ~13 marks of work to be completed for the	All

					deliverables	
r5	Project + Product	Team members might get sick	M	M	Assign at least 2 team members to each task, with one being a ‘shadow’ member. This ensures that if someone can't work on it anymore, someone else can take over.	All
r6	Product	Miscommunication/lack of communication	M	M	Establish communication channels (Whatsapp, Slack), meet as a group bi-weekly, and explain assignments clearly	All
r7	Product + Business	Not meeting elicited requirements	M	M	Ensuring timelines are reviewed regularly and workload shared out if certain areas of behind	All
r8	Project + Product	Slow/buggy libraries used	L	M	Research libraries beforehand - check their benchmarks and issuetracker to indicate performance and amount of maintenance. Hide libraries behind a facade so if they have to be replaced we can change the facade	All
r9	Project	Scope creep requirements increase/change as project progresses	L	M	Ensure requirements are clearly defined at the beginning, evaluate the risk of extra requirements affecting the schedule	All

r10	Product	No budget so assets must be found for free	H	L	Search for free assets, inform stakeholders that assets will be lower quality compared to expensive ones	All
r11	Project	Underestimating the amount of learning it takes to understand the technology	M	L	Keep checking up on each team members understanding of what's going on, and providing help if required	All
r12	Project + Product	Lack of coordination due to not having an official project manager to run the project	M	L	Have leaders within the group to check on how others are doing and maintain the work ow of the project	All
r13	Business	Team conflicts may arise	L	L	Intentionally design team culture from the start and periodically assess team health. Discuss any issues with the group and explore ways to resolve them	All
r14	Business	Mis-understanding the stakeholder's requirements	L	M	Ensure that questions are specific enough so that there is no room for ambiguity in the requirement	All

r15	Project + Product	Each member's equipment may be in differing conditions	L	M	Ensure all software used can be run on the oldest laptop/computer so all members can utilise the tools needed	All
r16	Project	Some members may miss important deadlines	M	H	Utilise meetings to check on the progress of work so help can be provided if needed	All
r17	Project	Data loss due to physical or digital damage/corruption	L	H	Ensure that all files are saved on multiple devices as well as a form of cloud storage so that even if one storage device is lost, all the data can still be accessed	All
r18	Business	Violating copyright laws/not obtaining necessary licences for assets	L	H	Check the licencing of all assets to ensure they can be used for free in our game without violating any agreements	All
r19	Project + Product	User/system requirements are dissociated	M	M	Extra communication between group members working on requirements and with the client	All
r20	Project + Product	Team member no longer involving themselves in project	M	H	Their workload must be picked up / planned to be picked up when it is clear that a team member is no longer contributing.	All

An additional risk reassessment table is available on the website, under ‘Risk Reassessment Table’.

References

[1] I. Sommerville, *Software Engineering*. 10th ed. Essex: Pearsons Education Ltd, 2016.