Risk Assessment and Mitigation

Upon assuming control of the project that we inherited from “Lucky” Team 13, we acknowledged the significance of identifying potential risks and executing mitigation strategies to guarantee the achievement of project objectives. It is acknowledged that unanticipated risks and challenges may emerge throughout the duration of the project, and if not effectively managed, may result in project setbacks, heightened intricacy, or potentially project termination. Our risk identification and mitigation strategy was based on the “Software Engineering” book by Ian Sommerville [1].

Various identification and analysis techniques were employed to obtain an in-depth knowledge of potential risks [3]. The initial step involved a comprehensive examination of the project documentation, including the project plan, requirements, design documents, and test cases [2]. This aided us in gaining an understanding of the extent of the project and identifying potential areas of risk. Furthermore, an assessment was conducted to determine the potential consequences of the risks mentioned above on the project, considering variables such as probability and potential impacts.

Subsequently, we engaged in consultations with the appropriate parties to gather additional perspectives and detect any potential risks that might have been disregarded during the primary evaluation [4]. It was deemed imperative to engage with both internal and external stakeholders to obtain a holistic comprehension of their requisites, apprehensions, and anticipations. Feedback was also obtained from the preceding team, who offered valuable insights on the potential risks they had identified.

Upon conducting a comprehensive analysis of the risk report submitted by the previous team, it was determined that certain risks identified therein should be maintained [2]. By maintaining their risks, we guaranteed that our risk management methods considered all conceivable risks that may arise throughout the project’s lifespan. The mitigation strategies implemented by the preceding team were assessed to ascertain their continued relevance and efficacy.

Ultimately, a thorough risk identification procedure was employed to assess potential risks that may emerge throughout the duration of the project, and suitable methods for mitigation were identified [3]. The previously described process entailed the identification of plausible risks, a thorough analysis of their potential ramifications on the project, and the development of appropriate measures to alleviate their effects. The efficacy of said strategies was also evaluated to ascertain their suitability and productivity [5]. The original Risks and Mitigation report for “Lucky” Team 13 can be found at [6].

ID	Type	Description	Likelihood	Severity	Mitigation	Owner
Technology						
R1	Project	Poor documentation or incomplete understanding of the project's architecture	L	H	Perform a comprehensive review of the available documentation, and reverse-engineer the project to gain a deeper understanding of its architecture	Meghan
R2	Product	Unforeseen issues with existing code or dependencies	H	H	Conduct a comprehensive code audit and dependency review, and make necessary updates and upgrades.	Tommy
R3	Business	The game is incomplete or low quality	L	H	Have good plans and learn from mistakes from previous sprints	Bartek
R4	Project	Insufficient testing of the previous team's work	M	H	Conduct comprehensive testing of the previous team's work, and perform regression testing after making any updates	Lauren

R5	Product	Inconsistent or poor quality code	M	H	Establish and enforce coding standards and best practices, and perform code reviews on all code changes	Nathan
R6	Project	Resistance to change or lack of buy-in from team members	L	M	Communicate the benefits of the changes to the team, and involve them in decision-making processes throughout the project	Davron
			People			
R7	Project	Poor communication or collaboration between team members, leading to misunderstanding or conflicts	M	M	Maintain open communication with stakeholders and management, and be prepared to adapt to changes as necessary	Lauren
R8	Product	Poor user experience or design due to inadequate user research or testing	M	H	Conduct thorough research and testing throughout the development process, and incorporate feedback into the design	Nathan

R9	Project	A team member becomes unavailable temporarily or permanently	M	M	Have tasks assigned to at least two groups members and have code and documentation easy to understand so another team member could continue the work	Meghan
R10	Project	Team members cannot attend all meetings due to personal activities	H	M	Make sure we make use of the timetabled practicals and make notes of what was discussed and what needs to be done	Meghan
R11	Business	Lack of clear project goals or objectives, leading to confusion or delays	M	M	Clarify project goals and objectives with stakeholders and team members, track progress regularly, and encourage open communication and transparency	Davron

R12	Business	Inadequate risk management or contingency planning, leading to unexpected issues or delays	M	H	Develop a comprehensive risk management plan, identify potential risks and their impacts, establish contingency plans, and communicate any changes to stakeholders and team members.	Tommy
R13	Business	Inadequate risk management or contingency planning, leading to unexpected issues or delays	M	H	Develop a comprehensive risk management plan, identify potential risks and their impacts, establish contingency plans, and communicate any changes to stakeholders and team members	Tommy
Requirements						
R14	Business	Conflicting requirements from stakeholders	M	H	Establish a requirements prioritisation process that incorporates stakeholder input and decision-making to resolve conflicts	Davron

R15	Project	Inaccurate documentation of requirements	L	H	Implement a rigorous requirements documentation process that includes regular reviews to ensure completeness, accuracy, and consistency with stakeholder expectations	Lauren
R16	Product	Inconsistent or incomplete traceability of requirements	H	M	Develop and maintain a comprehensive traceability matrix that tracks requirements from inception through delivery, ensuring all requirements are linked to corresponding design and test artefacts.	Meghan
R17	Business	Poorly defined acceptance criteria	M	H	Collaborate with stakeholders to establish clear and measurable acceptance criteria that are achievable within project constraints	Bartek

R18	Project	Vague or ambiguous requirements	H	M	Utilise structured requirements elicitation techniques, such as use cases or user stories, to establish clear and unambiguous requirements, and involve stakeholders throughout the process to ensure clarity and completeness	Tommy and Nathan
Estimation						
R19	Business	Lack of stakeholder involvement in the estimation process	M	H	Involve stakeholders, such as project sponsors or business owners, in the estimation process, providing transparency and involving them in decision-making to ensure alignment with project goals and expectations	Lauren

R20	Product	Ambiguity or volatility in project requirements and scope	H	H	Break down work into smaller tasks and involve stakeholders in estimation to manage ambiguity and volatility in project requirements.	Meghan
R21	Project	Underestimation of the complexity of the project, including dependencies, risks, or technical challenges	H	H	Conduct thorough project analysis to document requirements and dependencies . Use expert judgement or historical data analysis to ensure estimates accurately reflect project complexity.	Bartek
R22	Business	Inadequate consideration of external factors, such as market conditions or regulatory requirements	M	M	Conduct a thorough analysis of external factors and incorporate them into the estimation process to ensure that the estimates accurately reflect the project environment	Tommy and Nathan

R23	Project	Inaccurate or incomplete data	M	H	Conduct a thorough data gathering process, involving stakeholders and experts as necessary, and implement appropriate statistical methods to analyse the data and identify trends and patterns	Lauren

References:

[1] Somerville, I. (2016). Risk Management. In Software Engineering (10th ed. Boston, MA). Pearson.

[2] Somerville, I. (2016). Risk Management. In Software Engineering (10th ed., pp. 399-428). Pearson.

[3] Somerville, I. (2016). Risk Management. In Software Engineering (10th ed., pp. 81-118). Pearson.

[4] Somerville, I. (2016). Risk Management. In Software Engineering (10th ed., pp. 323-358). Pearson.

[5] Somerville, I. (2016). Risk Management. In Software Engineering (10th ed., pp. 515-536). Pearson.

[6] “Risk Assessment and Mitigation v2”, Team13ENG1, 2022-2023. [Online].Available: https://team13eng1.github.io/files/assessment/Risk%20Assessment%20and%20Mitigation%20v2.pdf. [Accessed: May 1,2023].