Original Risk Register

ID	Date raised	Risk Description	Likelihood of the risk occurring	Impact if the risk occurs	Severity	Owner	Monitoring Strategy	Mitigation Plan
1	17/8/2023	Software bugs in the system risk	High	High	High	Head of programmer	Ensure that code always runs as expected before working and developing upon the existing code. This is to monitor the current code and ensure that it works.	1. Develop test cases using unittest. 2. Make sure code works without error before pushing to gitlab.
2	25/8/2023	Conflict of ideas between team members risk	High	High	High	Scrum Master	Ensure that conversations are moderated by the third person participating in the conversation. The person is responsible to monitor and detect when the conversation becomes heated.	1. Both sides must ensure that they listen to the opposite views. 2. Both sides must agree that everyone is working towards the same project goal. 3. Gather consensus from all team members to decide which option to choose to move forward.
3	25/8/2023	Team member burnout risk	High	High	High	Scrum team	Observe team spirits during meetings and each person should be vigilant in detecting when negative emotions are brought up during	1. Organise wellness programs for the team to support mental health 2. Give support and motivation to team members when members are feeling down or discouraged due to overwhelming load from projects or other units.

							conversations as that could be a sign of burnout.	3. Encourage and create a positive working environment for the team.
4	27/08/2023	Data Leak Risk	High	High	High	Scrum team	Ensure that detailed logs of who accessed what data and when is being tracked to ensure that the data access is monitored and data leak is prevented.	1. Limit who has access to more sensitive data 2. Encrypt sensitive data 3. Regularly update and patch the software.
5	17/8/2023	Lack of communication risk	Medium	High	Medium	Scrum Master	If there is a lack of communication, it should be visible because team members will not be aware of each others' progress.	1. Weekly Standup Meetings 2. Use Google Docs for Centralised Documentation
6	21/8/2023	Unrealistic or unreasonable requirements	Medium	High	Medium	Product Owner	Ensure that the group has frequent communications with the client to clarify all the expectations and address any unreasonable expectation when needed. This can be monitored through discussion internally with the scrum team to determine if the requirements	1. Negotiate with the client and provide reasonable alternatives. 2. Give examples of successful alternatives to clients.

							are unrealistic or unreasonable.	
7	25/8/2023	Unrealistic time frame given risk	Medium	High	Medium	Product owner	This can be monitored by observing the current sprint or product backlog. Through internal discussion, the team can decide if the time frame for such tasks are unrealistic or reasonable.	1. Plan the project ahead, make sure the tasks are divided reasonably for each iteration. 2. Estimation of the time needed to finish each task must be done. 3. Avoid taking on extra tasks that clients did not ask for.
8	25/08/2023	Unethical approach or conduct risk	Medium	High	Medium	Scrum team	Ensure a strict ethical guideline is implemented. This can be monitored by researching the methodology or code used to ensure that it is ethical.	1. All team members should be aware of the ethics and ethical behaviours that should be maintained. 2. Immediate action must be taken and investigation must be done by the entire team when an unethical behaviour has been conducted.
9	25/08/2023	Dependency on third-party libraries or APIs risk	Medium	High	Medium	Scrum team	This can be monitored by observing the libraries that are imported and used in the code.	1. Ensure that licences are compliant, and regularly check for updates or changes to third-party components.
10	27/08/2023	Project Quality Risk	Medium	High	Medium	Scrum team	This can be monitored and maintained by having regular code reviews to ensure the quality is being maintained.	1. Ensure that all team members consistently check the requirements when building the system for each user story.
11	17/8/2023	Conflicts	Medium	Medium	Medium	Scrum	Observe if	1. Weekly standups for

		not resolved in a timely manner				master	there is any negativity lingering during discussions. If there is, conflicts should be resolved as soon as possible.	conflict resolution 2. Vote by general consensus after hearing from each side
12	17/8/2023	Lack of skills resources risk	Medium	Medium	Medium	Scrum team	Ensure that all team members have prior knowledge to the resources needed in this project. This is monitored by making sure that all team members present their findings during the stand-up meetings.	1. Online resources 2. Each team member studies content accordingly. 3. Seek help to other team members when needed.
13	17/8/2023	Uneven work distribution risk	Medium	Medium	Medium	Scrum team	If there is uneven work distribution, it should be detected as soon as possible. It should be visible by observing the task list for each team member. Therefore, if there's an obvious difference between each other, there is an uneven work distribution.	1. Weekly discussion on the topics or project that has to be done and make sure everyone is satisfied with their workload. 2. If workload is too burdening, the team member should voice out to other members in the team. 3. Make sure everyone is clear with their roles and responsibility and make sure that everyone in the team is satisfied with their roles.

14	25/8/2023	Limited access to resources risk	Medium	Medium	Medium	Scrum team	This can be detected when there are limited references when doing a report or when there is difficulty in developing the code due to limited online resources.	1. Identify all the necessary resources needed early on during planning. 2. Find alternatives to access materials or software tools if some are not accessible to us. 3. Leverage library resources or seek support from faculty.
15	25/08/2023	Scheduling conflicts and clashes risk	Medium	Medium	Medium	Scrum team	Ensure the team does frequent updates and transparency on scheduling, to ensure a more efficient scheduling process. This can be monitored by observing the scrum team members' class timetable.	1. Organise google calendar for everyone to input their scheduling day by day. 2. Communicate within teams often and find the best time when everyone is available. 3. Use scheduling tools such as LettuceMeet.
16	25/08/2023	Inconsistent user experience across platforms risk	Medium	Medium	Medium	Scrum team	This can be monitored by observing the graphics and interface across platforms when it has been deployed.	1. Ensure that regular testing is conducted on different devices and browsers, following responsive design principles.
17	17/8/2023	Team members' health risk	Low	High	Low	Product Owner	Regularly communicate with team members about their health status. This is monitored by making sure	1. Discuss with client to negotiate possible extension of deadline. 2. Discuss with other team members who are willing to hand over the tasks assigned to that member.

							that members update their current health status.	3. Ensure to exercise daily. 4. Ensure to stay hydrated everyday.
18	21/8/2023	Academic misconduct risk	Low	High	Low	Scrum team	Ensure that all the work are sent into a plagiarism checker or checked by all team members, before submission. This can be monitored with a plagiarism checker.	1. Each team member is responsible for their own work. 2. If a member is suspected of breaching academic misconduct, the team will try to solve the problem personally. If the issue is not solved over time, approach the teaching team.
19	25/8/2023	Laptop hardware breakdown risk	Low	High	Low	Scrum team	Ensure and monitor that hardware works as expected before continuing on to code and develop upon the current repository.	1. Ensure that backup copy is made and saved after every change. 2. Utilise gitlab for version control to save code to a repository. 3. Ensure that all team members have their own backup of the new code.
20	25/8/2023	Natural disasters risk	Low	High	Low	Scrum team	This can be monitored by looking at the natural disaster forecast online.	1. Plan ahead for extreme weather that may cause any possible natural disasters. 2. No exact way to solve this issue, workload will have to be carried over to other team members if it happens to specific people.
21	25/8/2023	Loss of key personnel risk	Low	High	Low	Scrum Master	Ensure open communication within the team. The loss of key personnel can be monitored	1. All team members should frequently update about their progress. 2. If risk does occur, workload will have to be fairly divided

							by keeping track of the group chat. If a particular scrum member does not respond after several days, actions have to be taken.	amongst the rest of the team members. 3. Scrum master should monitor the scrum team at all times for any irregularities.
22	25/08/2023	Data Loss Risk	Low	High	Low	Scrum team	This can be monitored by observing any data loss before continuing to expand on the existing code base.	1. Ensure that the code base is backed up in several locations: a. Online (GitLab, Google Drive) b. Offline (Scrum team's hard drive)
23	21/8/2023	Poor time manage ment risk	Low	Medium	Low	Scrum team	Ensure that all the tasks are completed on schedule and identify any potential delays early. Everyone should monitor their time management and ensure that they complete tasks before the dateline.	1. All team members should share their management plans and all team members can review it. 2. If a team member is struggling with time management and falling behind on the project, a meeting will be held to address and resolve this matter.
24	25/8/2023	Poor process manage ment risk	Mediu m	Low	Low	Scrum master	Ensure that the team understands their roles respectively and any inquiries must be addressed immediately.	1. Scrum master should understand their role properly and is able to provide guidance to the team, and address concerns with the scrum team. 2. Seek for consultation from the teaching team to check if the team is on track.
25	21/8/2023	Overdue project	Medium	Low	Low	Scrum team	Ensure that all team	1. Weekly checkup on each member's

		risk					members are transparent with each other about their current workload over time. Make sure each members' voices are heard. Everyone should be responsible to monitor the project deadline regularly.	workload. 2. Discussion on tasks handover to other team members if necessary. 3. All team members work together to make sure the work gets done, despite the amount of other workloads.
26	9/9/2023	Firebase Interruption	Medium	High	High	Scrum team	Ensure that each member hosts their own firebase for testing purposes so that it will not interrupt the main firebase for the software.	1. Utilise multiple Firebase projects to minimise the impact of interruptions on a project. 2. Regularly backup critical user data stored in Firebase to prevent data loss in case an interruption occurs.

Table 4.2: Risk register

New Risks Discovered

ID	Date raised	Risk Description	Likelihood of the risk occurring	Impact if the risk occurs	Severity	Owner	Monitoring Strategy	Mitigation Plan
26	9/9/2023	Firebase Interruption	Low	High	Low	Scrum team	Ensure that each member hosts their own Firebase instance for testing purposes so that it will not interrupt the	1. Utilise multiple Firebase projects to minimise the impact of interruptions on a project. 2. Regularly backup critical user data stored in Firestore

			🟩	🟥	🟩		main Firebase instance for the software.	to prevent data loss in case an interruption occurs.

Table 3.3.1: New Risks Added

Risks that Occurred During First Sprint

ID	Occuration Date	Risk Description	Severity	Details	How the issue was resolved	Future Mitigation
22	4/9/2023	Data Loss Risk	Low	1. One team member accidentally pushed and committed the changes into the main branch. 2. Some coding data that was previously done by other members were lost. 3. Data lost was not severe, and was retrievable.	Team members reverted the changes and made sure the lost data were retrieved.	1. Avoid accidents like this from happening. 2. Make sure all changes made are informed to the group. 3. Report the accident immediately if any occurred.
19	5/9/2023	Laptop hardware breakdown risk	Low	1. One team member's laptop broke down during the middle of the sprint. 2. No data was lost, as everything was backed up in GitLab.	Laptop was fixed on the day, not a lot of time was wasted.	1. Ensure that backup copy is made and saved after every change. 2. Utilise gitlab for version control to save code to a repository. 3. Ensure that all team members have their own backup of the new code.
26	9/9/2023	Firebase Interruption	Low	1. Everyone working on the code was working on the same firebase instance. 2. There were lots of instances where team members	Not a big issue, as it only happened during testing. Some team members decided to host their own Firebase for testing purposes. No important data was	1. Utilise multiple Firebase projects to minimise the impact of interruptions on a project. 2. Regularly

			🟩	were confused about the tasks added or deleted when testing.	lost.	backup critical user data stored in Firestore to prevent data loss in case an interruption occurs.

Table 3.3.2: Live and Updated Risk