ID4: Top 10 Risks + Mitigation Plan

ID3 Risks:

- Low Bus #
    - **Summary**: From the very beginning of the semester, there has been the concern of having enough team members – especially leads – to effectively and efficiently execute project development. However, the loss of a team member has increased the severity of an existing risk.
    - **Solution**: the affected party (testing team) has taken upon themselves to communicate regularly and divide labour in advance
    - **Status**: Mitigated

- Learning Curve Effects ***
    - **Summary**: In previous deliverables, there was the risk of being unfamiliar with some of the necessary programs/languages. This risk extended into ID3 – primarily affecting the testing team. In a way, it could be considered increasingly severe, with fewer individuals expected to be comfortable enough with the programs/languages, to contribute to project development.
    - **Solution**: Team members would meet regularly with the testing lead, and confer any issues/concerns that would block development. Team members would also engage in regular paired programming sessions, and use online resources to clarify understanding
    - **Status**: Mitigated

- Ensuring all areas of the deliverable are being worked on ***
    - **Summary**: When a team is faced with a large-scale project with fixed requirements and rigid deadlines, it's important to make sure that all the areas of the deliverable are being worked on/completed, and that nothing slips through the cracks.
    - **Solution**: The switch to Trello and the use of a Gantt chart has since been proven effective in handling issue tracking in previous deliverables. Regular stand-ups, and an increase in group work sessions has also ensured that all the deliverable requirements were up to date.
    - **Status**: Ongoing

- Time Constraints/Availability ***

- **Summary**: As always, external factors (i.e. classes, jobs, personal commitments) will influence availability.
- **Solution**: In response, meetings and work sessions are scheduled in advance, with the intention of accommodating as many team members as possible. Similarly, all foreseeable time constraints are brought up in advance.
- **Status**: Ongoing

· Unequal Team Contribution ***
- **Summary**: It was anticipated from the beginning that different roles come with different responsibilities, and that some of those roles are more demanding. However, issues arise when individuals take on the bulk of the work, especially when compared to the efforts of those in similar roles. Unequal contributions increase the risk of a less viable final product. Furthermore, it creates a poor work environment and a sour team dynamic. Part of the issue lies in the challenge of keeping track of comparative efforts.
- **Solution**: In response, a pie chart based on the totality of respective hours recorded in the time log, provides team members with a visual which displays the division of labour.
- **Status**: Ongoing

· Time Management ***
- **Summary**: As we approach the later/critical stages of design implementation, it is crucial that all team members are able to use their time effectively. Procrastination hurts everyone. However, this risk extends beyond procrastination. It is important for team members to find a balance between contributing to the success of each deliverable, while managing the workload from other courses.
- **Solution**: Team members are expected to outline a set of achievable goals in advance, and allocate an appropriate time slot to work on meeting them. Team members are expected to keep up with Trello to see what needs to be done and by when, so they can work around their respective agendas. It is also encouraged to attend all (possible) meetings/work sessions
- **Status**: Mitigated

· Fatigue
- **Summary**: At this point in the semester, it's not uncommon for students to experience 'burnout'. Physical and emotional exhaustion can lead to a drop in overall productivity, sloppy coding, and missing important details.
- **Solution**: Team members are encouraged to take regular breaks and ask for help when caught in a slump. A crackdown on regular code review as

been established. Furthermore, Sonar Cloud has been used to check code coverage and code smells.
    - **Status**: Ongoing

- Emphasis on Testing
    - **Summary**: Up until this deliverable, emphasis has been placed on writing out code, more so than testing . But at this stage of development, testing is crucial. Code lacking in test coverage is considered null.
    - **Solution**: There has been a crackdown on testing procedures. Integration test cases are regularly recorded and updated by the testing team, using the provided test matrix. A specified format for manual and automatic testing allows for a consistent and coherent understanding, leading to effective and efficient implementation.
    - **Status**: Mitigated

- Communication
    - **Summary**: One of the major setbacks to efficient development is a lack of reliable and effective communication between team members. This issue can contribute to a critical task path blockage, as well as confusion and frustration within the team.
    - **Solution**: There has been a fresh emphasis on team policy. Team members are expected to regularly check GitHub for PR requests, and well as check any Slack notifications. Team members are also expected to have the Slack mobile app downloaded, in order to keep track of updates when they have no access to their computer.
    - **Status**: Mitigated:

- Team Dynamic
    - **Summary**: As mentioned above, communication has posed a risk to this deliverable. However, this goes beyond a technical sense. There is the issue of team members feeling too intimidated/uncomfortable to ask questions or request help from team members.
    - **Solution** :it has been encouraged that team members engage in the occasional planned team building activities. Those activities are to focus more on boosting morale and building dynamics, instead of project development and meeting deadlines.
    - **Status**: Mitigated

ID4 Risks

- Reading Week

- **Summary**: Availability has always been an issue that is nearly impossible to fully resolve. For this deliverable, its status as a risk is doubled, with the onset of Reading Week. Some team members were entirely unavailable, having left the city to visit friends, family, etc. This has led to fewer work sessions and complications in ensuring completion before the deadline.
- **Solution**: Tasks were delegated in advance, for the purpose of ensuring goals were met and that team members would be able to contribute in spite of availability conflicts. Absent team members were assigned non-critical path tasks.
- **Status**: Mitigated

Definitions:

x	Low	Medium	High
Severity	The problem can be mitigated with little team coordination and effort.	The problem must be discussed, and a solution must be planned as a team.	The problem must be discussed, and a solution must be planned as a team. The problem may not be solvable within the allotted deadlines. This has a disastrous impact on the final outcome of the project.
Probability	The problem is not likely to occur.	The problem may occur, or external factors beyond control may contribute to the problem coming to fruition.	The problem is very likely to occur and should be immediately mitigated.

*** = carried over from previous deliverables