**Risks**

The tables below will give detailed explanations about the risks that we may encounter when working as a group, which may hinder our progress and delay the project. The counter measures for the risks will also be detailed. The risks may be differentiated into different groups, including commitment, implementation and design, files, time and requirements. The severity shows how serious the risk could hinder the progress of the project. Different levels of severity include low, medium or high.

* Low: Would not hinder much of the progress of the project but should not be taken lightly
* Medium: Would hinder a significant amount of the progress of the project and should be resolved.
* High: Would hinder most of the progress of the project and should be resolved as soon as possible. More effort is required from all group members to resolve it.

**Commitment**

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| **Risk #:** R01 | **Severity:** Medium |
| Description: The lack of commitment by the group members. This could be caused by the lack of motivation provided by the group manager towards its group members. Poor distribution of tasks by the group leader for the group members could also contribute to the lack of commitment. Furthermore, group members who do not share the same vision towards completion of task could also be a cause of the commitment issue. | |
| Counter Measure: Group members should motivate each other to complete tasks together. Proper knowledge on the strength and ability of each member is crucial to ensure proper distribution of work. A knowledgeable and experienced manager should be chosen to lead the group. | |

**Implementation and Design**

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| **Risk #:** R02 | **Severity:** Low |
| **Description:** This is the first time where we are developing a system of such complexity. The lack of knowledge in terms of C++, designing the system and documentation may slower the process towards completion of the whole project. In terms of C++, we may encounter much more bugs and would take up more time to debug it. In terms of designing, we may lack the knowledge of domain models or use cases. In terms of documentation, we may lack the knowledge to document the requirements, non-functional requirements and much more in a structured format. | |
| **Counter Measure:** Group members should put in much more effort to do more research, do more readings and gain opinions from specialists of the field to overcome the issue. | |

**Files**

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| **Risk #:** R03 | **Severity:** Medium |
| **Description:** There is a chance where documentations stored on the group member’s computer may be lost due to a hardware malfunction. There is also a possibility where the group might lose track on the files and updates are implemented incorrectly. | |
| **Counter Measure:** Cloud storage such as Google Drive or Dropbox could be used to store documents. To ensure proper versioning of documents, software such as TortoiseSVN or GitHub can be used. They are easy to use and highly available. We also plan to store the files and documents in multiple place just in case either one of them goes down and become inaccessible for some reason (E.g. File corruption) | |

**Time**

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| **Risk #:** R04 | **Severity:** Medium |
| **Description:** Being full time students in university, we are always busy with assignments from other subjects. Poor time management by the group members can delay submission of artefacts. Group members may also suddenly fall sick or face unexpected problems, making them unable to accomplish the task assigned to them. | |
| **Counter Measure:** Each group member should have proper time management so that tasks assigned to them regarding the project and assignments from other subjects are completed in time. Group members who encounter an issue which may delay the submission of an artefact should update the manager as soon as possible. This would allow the task to be delegated to another member. | |

**Requirement**

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| **Risk #:** R05 | **Severity:** High |
| **Description:** There is a possibility that during the requirement elicitation phase where the group has misunderstood what the client was looking for. The client might also decide to change the requirements during the execution of the project. | |
| **Counter Measure:** The group must constantly be in contact with the client to reconfirm the requirements and be able to obtain a clear description of them. Proper planning is essential to ensure requirement changes do not heavily impact the progress of the project. Questions to the client must also be clear and constructed. Breaking down the system into smaller parts is an example on how to overcome the issue. | |