BIKERR
RISK MANAGEMENT PLAN

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VERSION HISTORY

Version #	Implemented By	Revision Date	Approved By	Approval Date	Reason
1.0	James El-Tayar, Ashraf Khalil	February 3, 2021	Adam Richard	February 3, 2021	Initial Risk Management Plan draft
1.1	James El-Tayar	February 15, 2021	Adam Richard	February 15, 2021	Fixes After Sprint 1 Updates from Sprint 2
1.2	Adam Richard	March 17, 2021	Adam Richard	March 17, 2021	Updates from Sprint 3

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1. INTRODUCTION

1.1. PURPOSE

To have better control over unwanted events that could lead to positive or negative risks concerning the software artifact and the project as a whole, a Risk Assessment and Management plan must be performed and fleshed out in the earliest stages of the project. This plan will define how risks are identified, analyzed, tracked, and mitigated. This document will outline risks that we have identified as possible occurrences that will most likely lead to some unwanted result in relation to the goals of the project and will also outline exactly what procedures will need to be undertaken to ensure the minimization of the plausibility of such undesirable occurrences. This may include the modification of the processes associated with the development of our project, the addition of rules and regulations meant for personnel to follow during all stages of the development, and also the addition of criteria and goals that are conducive to the reduction of risk associated with the project; this deems it that constant monitoring of the project and the performance of stakeholders in relation to such criteria is necessary to allow for the creation of conditions and of an environment that is complementary to the eventual positive realization of the project and all of its goals.

1.2. PROCESS

Stakeholders and team developers must be consulted through the developmental life cycle of this project to continuously update and improve upon this plan. This will allow for risks to continuously be identified. They must then be analyzed to evaluate what impacts, severity, and frequency they might have through both qualitative and quantitative means. They must then be tracked to allow for a greater understanding on the frequency and reasons behind recurring risks. Mitigation techniques must then be created and implemented to deal with these risks with resources being delegated according to the previously mentioned qualitative and quantitative risks assessment techniques. Finally, the impact of these techniques must be evaluated so that cost benefit tests may also be performed.

A continuous theme can be observed that all steps of this plan must continuously be revisited, updated, and reconsidered with every step of the project to insure effective risk management. With all stakeholders taking an active role in the identification, analysis, and mitigation of risks throughout the project.

There will be a weekly risk management meeting that will allow for all risk management processes to be communicated and carried out. All members of the development team will be present and actively participating in the meeting. performance and behavior of all members will be measured in relation to their adherence to all risk management related protocols, and any significant behavioral discrepancies will be acknowledged and attended to. There will also be a risk manager responsible for the leading of said meetings and making modifications to the process, as necessary.

The chronology of the meeting will be as follows: Risk identification, Quantitative risk analysis, Qualitative risk analysis, risk mitigation strategies, and finally, risk monitoring. Qualitative analysis will take one week to complete and will be done by the risk manager, and the development of a risk response strategy will also take one week to complete and will be done by a randomly assigned team member, making it so that the process from identification to a final risk response and monitoring plan will take 2 weeks to complete. After the 2 weeks, the given identified risk will be acknowledged at the end of each meeting where the team's adherence to the response plan will be discussed and possibly amended.

2. RISK IDENTIFICATION

Risk identification is the first key activity in the risk management process model. It will be done with the project team, appropriate stakeholders to allow for the widest range of identification encompassing every facet of the project from environmental factors to organizational culture and beyond.

2.1. PURPOSE

Risk identification, being the first in the chain of key risk management activities, holds a crucial step as any risk activities that follow are limited by the effectiveness of this first step. Risks cannot be analyzed, mitigated, and tracked if they are not first identified.

2.2. TASKS

All risk identification activities will be carried out at the beginning of all risk.

management meetings. All team members will be expected to take a proactive role in regard to risk management, and thus be able to independently recognize risks that deserve to be brought to the attention of the team. At the start of each meeting, any team members that have come to identify any new risks that can affect the success of the project will mention them to the rest of the team, and immediately after the rest of the team will be able to vote on whether or not the risk should be attended to, or if for any reason, it should be discarded; possibly due to extreme implausibility or negligible effect to the bottom line of the project. At the point where all new risks have been mentioned and vetted, begins the second stage of risk management, risk analysis.

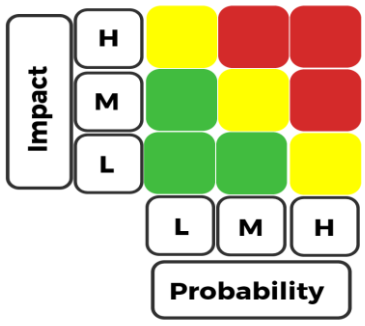
3. RISK ANALYSIS

3.1. QUALITATIVE RISK ANALYSIS

Qualitative risk analysis will be done via the placing of all identified risks into categories based on 2 main considerations: risk impact and risk probability. Each identified risk will have a probability and an impact associated with it, being that these two spectrums are independent from one another. There will be high, medium, and low categories for each of the two relevant aspects. These are defined as follows:

Probability
High: Greater than *70%* probability of occurrence
Medium: Between *30%* and *70%* probability of occurrence
Low: Below *30%* probability of occurrence

Impact
High: Has the potential to greatly impact the project
Medium: Has the potential to slightly impact the project
Low: Has the potential to have a small impact on the project



The placing of identified risks into these categories will be done democratically, with the entire team voting on both the impact and the probability of each risk. Every member will be expected to raise a card with one of the

three categories for each vote, and risk will be placed into the category with the most votes. If there is a tie during any vote, the risk manager will be responsible for placing the risk into one of the two popular categories. While diligent risk management is integral to the successful completion of any project, it is also very important that time is spent wisely, and thus this voting procedure and all other risk related procedures are intended to be carried out in the most efficient means possible. Because of this, not too much time is meant to be spent during the severity classification of any identified risk, any conversation regarding qualitative risk classification is meant to be brief, and any disagreements are meant to be resolved quickly by the risk manager.

This process is intended to allow for the creation of a clear hierarchy of risk severity, and thus allows for the appropriate delegation of resources to all identified risks.

3.2. QUANTITATIVE RISK ANALYSIS

Quantitative analysis will be done as a natural elaboration on the classifications done during the qualitative analysis. The risk manager will be responsible for the attachment of numerical probabilities to all identified risks, as well as a numerical monetary sum to the impact of all risks. These calculations will be carried out after the meeting, and their conclusion will be presented during the next scheduled risk management meeting, where members of the team will vote on the approval of the qualitative valuation of the risk severity.

If the team approves, the qualitative analysis of the risk will be documented in this section of the risk management plan. If not approved, the team will voice the reasoning behind their objection, and the risk manager will modify their valuation to the point where it is approved, and then add it to the document.

4. RISK MITIGATION

After risk identification and analysis has been completed during the meeting, all new risks that have had their severity calculations approved will be presented alongside their severity calculations, and the team will vote to proceed with one of the 3 following risk response strategies: Avoid, Mitigate, or Accept.

Avoid: eliminating the cause of a threat therefore avoiding the risk altogether.

Mitigate: Introduce methods to reduce the probability and or impact

Accept: Choose to do nothing and accept it as a possible risk.

Everyone present in the meeting will raise a card with either A, M, or AC when each risk is presented, and the option with the most votes will be the one that is carried out. The Avoid strategy is based on completely removing the underlying cause of the risk, the Mitigate strategy is based on imposing some sort of procedure that will reduce the severity of the risk to a level that the team deems acceptable, and the Accept strategy is simply doing nothing at all, possibly due to the fact that the risk severity has been accepted to be relatively insignificant, or that any other strategy may require more resources than can be reasonably afforded. For risks that were not decided to just be accepted, a single team member will be assigned each risk by the risk manager after the vote has been completed and the strategy decided, and the team member will be responsible for deciding on a comprehensive risk response plan that mitigates the risk, according to the approach that had been decided during the vote, to present at next week's meeting.

After voting and assignments are completed, all team members that have been assigned a risk the prior week will be responsible for presenting their risk response plan, and another vote will be carried out to either approve or deny the response plan suggested by the team member. A risk response plan must also include a risk monitoring and controlling plan to adhere to for the following weeks.

5. RISK TRACKING

It is important to continuously track, monitor and maintain an updated list of the risks reported and discussed throughout the lifecycle of the project. Therefore, a spreadsheet that will contain all the risks, their descriptions

and relevant information as well as the team's opinions on what needs to be done about them, will be maintained. The link to which will be provided in APPENDIX A: REFERENCES under *Risk Tracking Spreadsheet 1.1*.

This will contain:

- Brief Summary of Risk
- Brief Description on Impact if Risk is Left Unmitigated or Unresolved
- Impact Level
- Probability Level
- Priority Level
- Mitigation Actions to be Taken
- Who is Responsible for this Risk

6. APPENDIX A: REFERENCES

The following table summarizes the documents referenced in this document.

Document Name and Version	Description	Location
Risk Tracking Spreadsheet 1.2	A spreadsheet that contains all the risks currently being tracked with all of their relevant information	https://github.com/shash3/SOEN390-team14/tree/master/Documentation