RISK MANAGEMENT PLAN

Introduction: The purpose of the risk management plan is to establish the framework in which the project team will identify risks and develop strategies to mitigate or avoid those risks. However, before all of the risks can be identified and managed, there are preliminary project elements which must be completed. These elements are:

- Define work scope, schedule, resources, and cost elements
- Define minimum and maximum baseline thresholds
- Baseline reporting requirements
- Define Risk Management Roles and Responsibilities

Risk Management Approach: The approach we have taken to manage risks for this project included a methodical process by which the project team identified, scored, and ranked the various risks. The most likely and highest impact risks were added to the project schedule to ensure that the assigned risk managers take the necessary steps to implement the mitigation response at the appropriate time during the schedule. Risk managers will provide status updates on their assigned risks in the bi-weekly project team meetings, but only when the meetings include their risk's planned timeframe. Upon the completion of the project, during the closing process, the team will analyze each risk as well as the risk management process. Based on this analysis, the project manager will identify any improvements that can be made to the risk management process for future projects. These improvements will be captured as part of the lessons learned knowledge base.

Risk Identification: For this project, the initial risk identification was conducted in the initial project risk assessment virtual meeting. The method used by the project team to identify risks was by asking each member of the team their top 2 or 3 risks. The risks identified during this virtual meeting were added to the project plan and Risk Register.

Risk Qualification and Prioritization: In order to determine the severity of the risks identified by the team, a probability and impact factor was assigned to each risk. This process allowed the team to prioritize risks based upon the effect they may have on the project. The team utilized a probability-impact matrix to facilitate the team in moving each risk to the appropriate place on the chart.

Once the risks were assigned a probability and impact and placed in the appropriate position on the chart, the recorder captured the finished product and the project manager moved the process on to the next step: risk mitigation/avoidance planning.

Risk Monitoring: The most likely and greatest impact risks have been added to the project plan to ensure that they are monitored during the time the project is exposed to each risk. At the appropriate time in the project schedule a Risk Manager is assigned to each risk. During the bi-weekly project team meeting the Risk Manager for each risk will discuss the status of that risk; however, only

risks which fall in the current time period will be discussed. Risk monitoring will be a continuous process throughout the life of this project. As risks approach on the project schedule the project manager will ensure that the appropriate risk manager provides the necessary status updates which include the risk status, identification of trigger conditions, and the documentation of the results of the risk response.

Risk Mitigation and Avoidance: The team leads have led the project team in developing responses to each identified risk. As more risks are identified, they will be qualified and the team will develop avoidance and mitigation strategies. These risks will also be added to the Risk Register and the Project Plan to ensure they are monitored at the appropriate times and are responded to accordingly. If necessary, the Risk Management Plan will be updated.

The risks for this project will be managed and controlled within the constraints of time, scope, and cost. All identified risks will be evaluated in order to determine how they affect this triple constraint. The team leads, with the assistance of the project team, will determine the best way to respond to each risk to ensure compliance with these constraints.

In extreme cases it may be necessary to allow flexibility to one of the project's constraints. Only one of the constraints for this project allows for flexibility as a last resort. If necessary, funding may be added to the project to allow for more resources in order to meet the time (schedule) and scope constraints. Time and scope are firm constraints and allow for no flexibility. Again, the cost constraint is flexible only in extreme cases where no other risk avoidance or mitigation strategy will work.

Risk Register: Every project must maintain a risk register in order to track risks and associated mitigation strategies. This section describes the risk register criteria as well as where the risk register is maintained and how these risks are tracked in the project schedule.

The Risk Register for this project is a log of all identified risks, their probability and impact to the project, the category they belong to, mitigation strategy, and when the risk will occur. The register was created through the initial project risk management meeting led by the project manager. During this meeting, the project team identified and categorized each risk. Additionally, the team assigned each risk a score based on the probability of it occurring and the impact it could potentially have. The Risk Register also contains the mitigation strategy for each risk as well as when the risk is likely to occur.

Based on the identified risks and timeframes in the risk register, each risk has been added to the project plan. At the appropriate time in the plan—prior to when the risk is most likely to occur—the project manager will assign a risk manager to ensure adherence to the agreed upon mitigation strategy. The each risk manager will provide the status of their assigned risk at the bi-weekly project team meeting for their risk's planned timeframe.

The Risk Register will be maintained as an appendix to this Risk Management Plan.

Appendix A - Risk Register

Risk Category	Risk Name	Risk Number	Probability (1-5)	Impact (1-5)	Risk Score	Mitigation	Contingency	Time Phase
Implementation	Project not completed by deadline.	1	2	5	10	Determine what the most basic viable version for this app is and building that as soon as possible. Then we can spend the rest of the semester adding as many features as we have time for.	Demosnstrate incomplete project as best as possible	Fianal Execution
Team Members	Slow progress or bad code due to inexperienced team members	2	3	3	9	1) Break down the project into smaller more easily manageable pieces, 2) having code reviews and 3) having a lot of communication between the team to help people get up to speed.	Remove incomplete capabilities from the project	All
Team Members	Unable to fully utilize the team because we can't split the project	3	3	2	6	1) Planning and communication. 2) Also having a minimally viable project out quickly would help, because		Execution

	into eight mostly non-overlapping components					then the basic structure of the app will be in place and it will be easier for people to work on different features.		
Team Members	Dropping Class / Losing key members (music) of team mid-stream	4	2	3	6	Have a lot of communication between the team members	Remove incomplete capabilities from the project	All
Implementation	Complexity of creating music sounds dynamically via 3rd party Java modules	5	2	4	8	Prototype shall be produced to try and alleviate concerns of sounds API and ensure sounds generated are correct for a keyboard.	Change Strategy	Prototyping
Team Members	DB design flaws due to minimal database experience on team.	6	3	2	6	DB Team initially focuses on MySQL training and research	Swap team member roles	All
Implementation	Complexity of working with sound within JavaScript	7	2	4	8	Prototype shall be produced to try to flush out potential issues to ensure sounds generated are correct for a keyboard.	Change Strategy	Prototyping
Implementation	Browser Compatib	8	2	3	6	Prototype shall be produced and tested	Limit use to particular	Prototyping

	ility with sounds					with all popular browsers to try to flush out potential issues.	browsers	
Implementation	Application Performance inhibits usefulness of application	9	2	5	10	Prototype shall be produced to determine best architecture/design approach.	Demosns trate non-functional project as best as possible	Prototyping