Project Charter

**Related Rate Problem Generator**

5 June 2023

# Project Statement

Many higher level math concepts are difficult to understand and master, requiring extensive practice and repetition of similar problems in order to fully grasp them. Related rates is an example of one of these advanced topics that many students may struggle with, but also find that they aren’t provided with many practice problems to help them study. Our project aims to resolve this issue through a related rate problem generator which provides an exercise then gives the expected answer when the user is ready.

# Concise Project Overview

Starting from May 9th, we will have a month of allocated time in order to complete our program. Within the first few days, we will consult our client in order to settle on a suitable problem to solve, finalize our project plan, and receive approval for the proposal. In order to complete this product, the only budget we will need is access to computers and a suitable workspace. Additionally, throughout this process, it is imperative that we maintain communication with our stakeholders such as our client and team members. This step is crucial as it ensures the final product meets the standards of all stakeholders. Furthermore, in order to mitigate potential risks such as project delays, failure to meet client criteria, and implementation challenges, we will take proactive measures such as early completion of coding and documentation, regular client consultation, and planning and research. Overall, if all necessary steps are taken, we will deliver a related rate problem generator that addresses students' needs and offers a valuable resource for practicing and mastering related rate concepts.

# Scope Statement

The desired outcome of our project is to have a program that will generate related rates problems with different numerical values each time. After this problem is solved by the user, the program should provide the correct answer to compare to the user’s. At this stage in the development, the program will not show the steps to solve the problem, nor will it be able to generate more than a few unique word problems. However, the different number values in problem, and the provided answer in order to check accuracy, will be sufficient in allowing the user to practice and master related rate concepts.

# Stakeholders

Our main stakeholder is our clients, who are math students struggling with related rates. Their main needs are related rate problems to help them practice, so checking in with them throughout the project will ensure the final product will fit their necessities and be exactly what they need in order to succeed. Another stakeholder is the team members working on the project, as the success of the product impacts them in numerous ways, such as building their careers and reputation. The team members will be consistently communicating with each other for the duration of the project as it is important to them that the features of the program are their best possible work and are meeting all members’ standards.

# Timeline

# Budget Estimate(s)

* One month until June 5th
* Computers
* Workspace

# Risks and Contingency Plans

One potential risk is not finishing the project by the due date, which would be the result of poor time management. In order to prevent this from occurring, we will aim to complete the code a few days prior to the deadline in order to have time for debugging and making further improvements. Same for the documentation, we should finish all documentation at least a day or two prior in order to allot time for revisions. Another potential risk could be not meeting up to our client’s success criteria after the product has been finalized. In order to reduce the likelihood of this instance, we will regularly consult with our client to discuss changes and to ensure our work is on track. Additionally, while developing the program, we might find that the task we chose is too difficult to implement. A solution to this issue would be to thoroughly plan and research our topic beforehand to ensure it is within our capabilities.