ICS3U – FINAL PROJECT  
STEP 1 – DEFINING THE PROBLEM

***Type of Application*** (i.e. game, text editor, trivia, music app, other)

Math questions game.

# ***Detailed Application Description*** (ie. storyline, how to play, scoring, similarities to other programs)

User answers ten questions inside textbox and after the completion of each level with a perfect score the user moves on to the next level. First it will be random addition questions, then subtraction, then multiplication, then division, for the final level the user will be given a mix of difficult problems. The user must answer all questions and leave none of them blank to move on to the next level. The user will only know if they got everything right at the end of the level when they click done or when the timer runs out. The user will get two minutes to complete all the questions on each level.

***Programming Knowledge Required*** (i.e. variables, loops, procedures, selection etc…)

Explanation: List the programming concept and explain how you plan to use it in your application (*i.e. Sorts – The program will read previous scores from a file and sort them high to low on a secondary form.*)

Sorts- the program will read the score of the player and sort it from high to low on a secondary form for them to see how they rank up.

Random numbers- this operation will be used in order to generate random numbers for each level.

Counter- used to add the users score in order to add to the leaderboard

Texts file Reader – read scores from the file to get the scores sorted and displayed in the leaderboard

Timer – gives the user a time limit of one minute to answer the questions.

Animations – to display cool moving shapes in the background of the form

Sounds- will be used to give some background noise for user in order to pressure them. (like Kahoot)

Procedures – to hold randomly generated questions in order to call them up when each level is changed

Array – to hold the user names and score for the output on to the leaderboard

Loops - used to run through all the scores and reorder them at the end of each game in order to display them on the leaderboard screen

Function – Used to return if the user passed the level with a perfect score or if they got questions wrong. Will display how many they got wrong

Variables- used to hold things like final score, number of questions, type of questions with the right amount of digits. (Project will include questions with more than one digit).

\*\*Submit this completed form to the drop box on eLearning “Step 1 – Problem Definition” \*\*