

INFO-C 210 (Problem Solving and Programming I)

Homework#5 – 50 points

***No late submission* Group Assignment**

Keep in mind that this assignment requires careful reading of the related module sections in Canvas. Make sure to document your code very well and follow proper programming practices.

In this assignment you will use the Object Oriented Programming style in terms of objects to analyze, design, and implement the following problem using JavaFX.

In this assignment, you will create an accumulator accumulator-calculator that displays a sad face “:-(“ whenever the number displayed by the calculator is negative and a happy face “:-)” whenever the number displayed is positive.

The calculator responds to the following commands: *num* + , *num* - , *num* * , *num* / and C (Clear).

Here’s how the GUI of this calculator will appear on the screen. Please read the implementation guidelines below carefully.

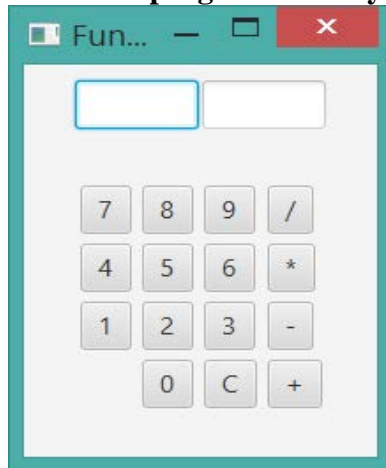


After initial run, if the user clicks 8 and then presses the “+” button for example, the accumulator value displays 8 in one field and a happy face in the other. If the second number entered by the user is 9 followed by “-“ button, the accumulator displays -1 and the face changes to the sad mode. If the next command is C, the accumulator will be initialized back to zero and the two Text Fields will be cleared.

Notice also that, this kind of calculator accepts only single digit numbers as input at any given time. (i.e. Single digit number followed by an operation). See sample run below:

Sample Run

- 1) When the program initially runs



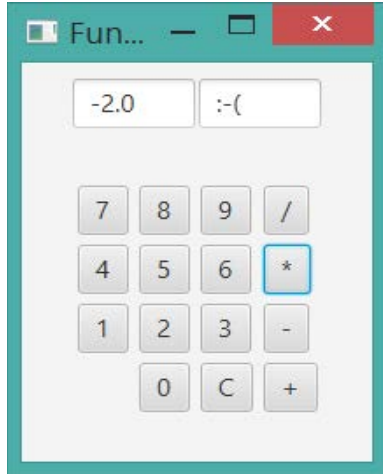
- 2) The user clicks 8 then clicks +



- 3) The user clicks 9 then clicks -



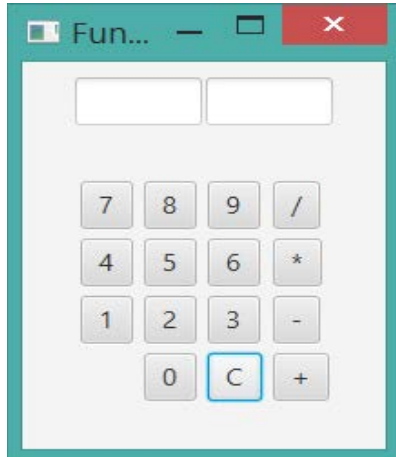
4) The user clicks 2 then clicks *



5) The user clicks 5 then clicks / :



6) The user clicks C



Implementation Guidelines:

A startup code file named, **StartupAccumulatorCalculator_JavaFX.java** is given to you. The code file contains an implementation of two classes, namely, **Calculator** and **Face**. It also contains the main class which will be used to design and implement the GUI. You are required to code your solution using the given two classes (Calculator and face). These classes are complete and you need not to change anything in them. However, the GUI class **StartupAccumulatorCalculator_JavaFX** is not complete and there are basically two methods that you need to code to make the program functional. You are free to re-design this class as you see fit, but keep in mind that Calculator and Face must be used. I have provided comments inside the code file to help you proceed with the implementation quickly.

Submission Guidelines (Read Carefully)

- This is a group assignment
- Include all your solution files (only the *.java files, no .class files) in a Zip archive. Submit only the Zip file. If you do not hand in all *.java files, you will receive no credit for the submission. Also, include the UML diagrams (if any) in this Zip archive
- Submit your assignment via the "Submit Assignment" link. Don't email it to me directly
- Each exercises/projects/cases must be done in accordance to coding standards, as discussed in class. You may not just put something together' and exclaim; "but it works!" That's not acceptable!