

# EECS 3461: Assignment 1

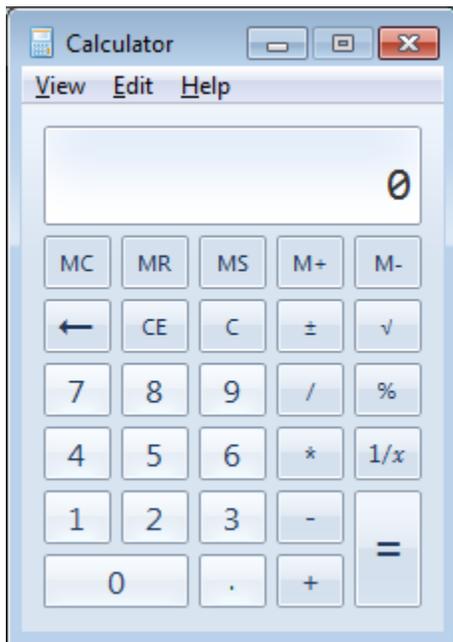
September 18, 2014

## Motivation

This lab will allow you do practice using Java Swing to develop a simple GUI application.

## Introduction

Below is a snapshot of a calculator application from Microsoft's *Windows 7*.



## Description

In this lab you will have to implement a calculator application, resembling the one above, using Java Swing.

You don't have to implement the following:

- memory operations;
- % operations;
- scientific notation, e.g., the ability to enter and display numbers like  $1.2 \times 10^{34}$ ;
- precedence of operations;
- fractions, e.g., you can use 0.3333333 to indicate 1/3.
- large numbers: you can just use one of the appropriate simple data type included in Java.

If you have any questions, don't hesitate to contact the instructor (andriyp@cse.yorku.ca).

## **Grading**

The lab is worth 5 % of the final grade. The points will be given as follows:

- 1 point if application compiles without errors and warnings;
- 2 points: if compiles and positions the components within its window in a reasonable fashion (e.g., proper gaps, symmetry, ...);
- 3 points: reasonable positioning and all basic functionality functions correctly, e.g., pressing “5, \*, 6, =” should produce ‘30’;
- 4 points: if both keyboard and mouse control work as expected (e.g. CE clears the last operand, Backspace deletes the last entered digit.
- 5 points: if the application simulates the behaviour of a typical calculator application in other aspects (including, but not limited to, chain operations, overflow indication).

## **Suggestions**

Review Java examples online, in particular on Oracle page (currently, <http://www.oracle.com/technetwork/java/javase/downloads/jdk7-downloads-1880260.html> ), especially the ones related to Swing. Also, explore the look and feel of the application referred above, the behaviour of hand-held calculators to determine what the users’ expectations from such an application are likely to be.

## **Submission**

Submit the code electronically via `submit` command (or equivalent). Late penalty is 20 % per day. Submission 5 days or more after deadline will be given a mark of zero (0). Contact the instructor *in advance* if you cannot meet the deadline explaining your circumstances.

## **Academic Honesty**

Direct collaboration (e.g., sharing code samples) is not allowed (plagiarism detection software may be employed). However, you’re allowed to discuss the requirements, approaches you take, etc.

State all sources you use (online sources, books, previously written code, etc.).