Project 1 - Calculator
CSCE 4623 – Mobile Programming – Fall 2017
Due Date – Wednesday, September 13th, 11:59 PM CT

Task: You have been tasked with developing a calculator application for the Android mobile phone system. This calculator is to behave as a basic calculator similar to the default application found on most mobile phones.

Figure 1: Google Nexus 6 Emulator showing a completed calculator application

Expected Operation: The calculator will be expected to perform addition, subtraction, multiplication, and division operations. The calculator should support floating point and negative numbers. The calculator should be able to use a clear button to reset the configuration back to the beginning. A backspace button should be implemented to clear only the furthest number (or decimal point) to the right of the screen. The application will be tested on the Google Nexus 6 emulator. If that does not work, I will attempt operation on the Nexus 6 phone.

Rubric: The project will be graded according to the following rubric:

Category	Description	Percentage
Pass Given Tests	There are a set of ten example tests in this document which you must implement. Each test is worth 5% of the grade for this project.	50%
Pass Hidden Tests	I will run a set of five hidden tests on your application to test operation. Four will be straightforward, one will attempt to trip you up. Each is worth 4% of the project grade.	20%
User Experience	How your application looks and feels to the user is important. The image in Figure 1 uses borderless buttons and a constrained layout. Consider how you want to implement the UX to appeal to your user.	10%
Coding Comments & Style	Android uses XML and Java as its primary languages. Use the appropriate coding styles (e.g. lowerCamelCase for variables and methods). Comment functions with a description about their behavior, any parameters, any return values, and any shared variables which it manipulates.	10%
Report	A simple, one- or two-page report. The report should have the project name (e.g. Calculator), a picture of the application, a short description of what you did, and the outcomes (e.g. Did it pass all example tests, if not, why not, your UX design methodology, etc...).	10%

Table 1: Grading Rubric

Tests: The following tests will be run, and the expected output is shown:

1. $5 + 2 = 7$
2. $6 - 3 = 3$
3. $4 * 8 = 32$
4. $15 / 3 = 5$
5. $-1.5 + 6 = 4.5$
6. $19 - 27.2 = -8.2$
7. $55555 * 99999 = 5.555444e9$
8. $1 / 10000000 = 1e\text{-}7$
9. $56 + 34 + 14 + 5.5 = 109.5$
10. $44 +$ (Clear) $13 + 45$(backspace) $= 17$ (Should compute $13 + 4$)

Submission: You should zip your project directory and submit it through the online submission portal at `csce.uark.edu/~ahnelson/file_upload/index.html`. The directory is password protected using the same username and password that we have used for the class.