

CS4520/5520: Mobile Application Development (iOS)

Fall 2024

Weekly Assignment 2 (100 points)

Basic Instructions:

1. Submission details:

- a. The project name should be:
WA2_<Your_Last_Name>_<Last_4_digits_of_your_NUID>
- b. After building the project, right-click on the project from Project Navigator.
- c. Click on Show in Finder.
- d. Select the project directory and the .xcodeproj file, and compress them to create a zip file.
- e. Then, submit the zip file in Canvas.
- f. (Please read the “How to Submit the Assignments” from Modules -> Quick Links.)

****Find the detailed instructions on the next page****

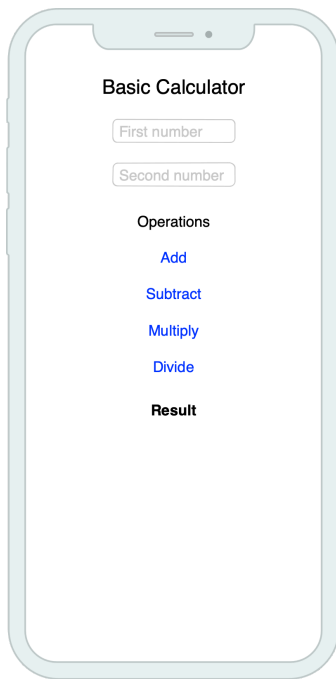
Weekly Assignment 2

Basic Calculator

In this assignment, you will be building an elementary calculator application. You must implement four arithmetic operations: ***add, subtract, multiply, and divide***. You'll use **UIKit** and learn to use some fundamental UI elements.

Requirement

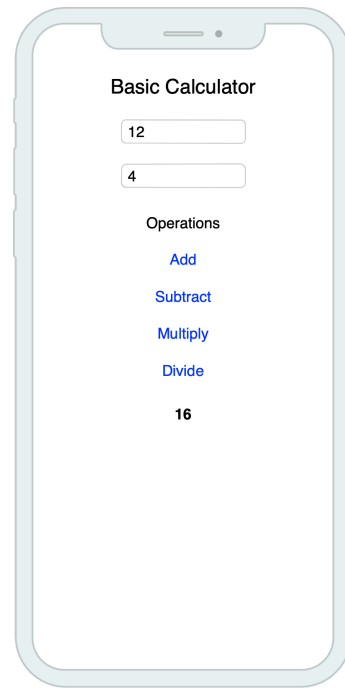
1. The app should have **3 Labels, 2 TextFields, and four buttons**, see Figure 1.
2. The top Label should display the String: "Basic Calculator."
3. Then, you need to put two TextFields.
 - a. TextFields will be used to take user input.
 - b. The TextFields should only accept numbers (Doubles/Ints).
 - c. Put placeholders for the TextFields, such as "First number" and "Second number."
4. Then, you will have another Label below the TextFields, which should display "Operations."
5. Then, you must put four Buttons: Add, Subtract, Multiply, and Divide.
6. Finally, at the bottom of other elements, you need a Label to display results. Set the default text to "Result."
7. Once you put two numbers in the TextFields and tap any of the buttons, you have to do the corresponding operation and display the result.
 - a. **AlertController:** If a user forgets to put a value in any of the TextFields before tapping the operation buttons, **you must display an alert saying**, "Error! The numbers cannot be empty!"
 - b. The TextFields should only accept numbers; you can manage it in two ways:
 - i. You can set the 'keyboardType' attribute of the TextField to '.decimalPad'.
 - ii. Or, you can alert the user to put the correct data type.
8. The text size of the top Label should be larger than the text in other elements.
9. The text in the resulting Label should be **bold**.



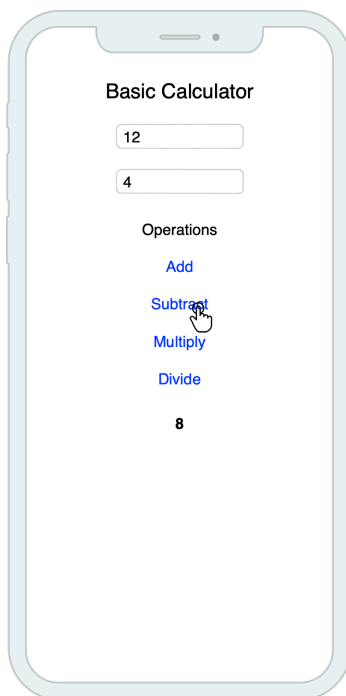
a. Barebone screen



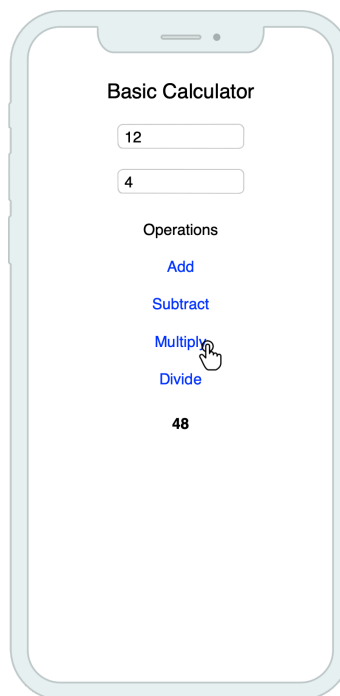
b. Numbers in TextFields



c. Adding two numbers



d. Subtraction



e. Multiplication



f. Division

Figure1: Basic Calculator Wireframes