CSE118 Summer 23

Assignment 4

In this assignment you will develop a simple Swift / SwiftUI app based on functional components developed for Assignment 1 to gain basic understanding of:

- Xcode IDE
- Swift
- SwiftUI
- Automated testing in Xcode

This assignment is worth 10% of your final grade.

Setup

If you have not already done so, install Xcode form the Apple Store.

Download the starter code archive from Canvas and expand into an empty folder. I recommend creating a folder for the class and individual folders beneath that for each assignment.

Start Xcode and open the project: **File → Open**

Select the folder where you expanded the starter code and click **Open**.

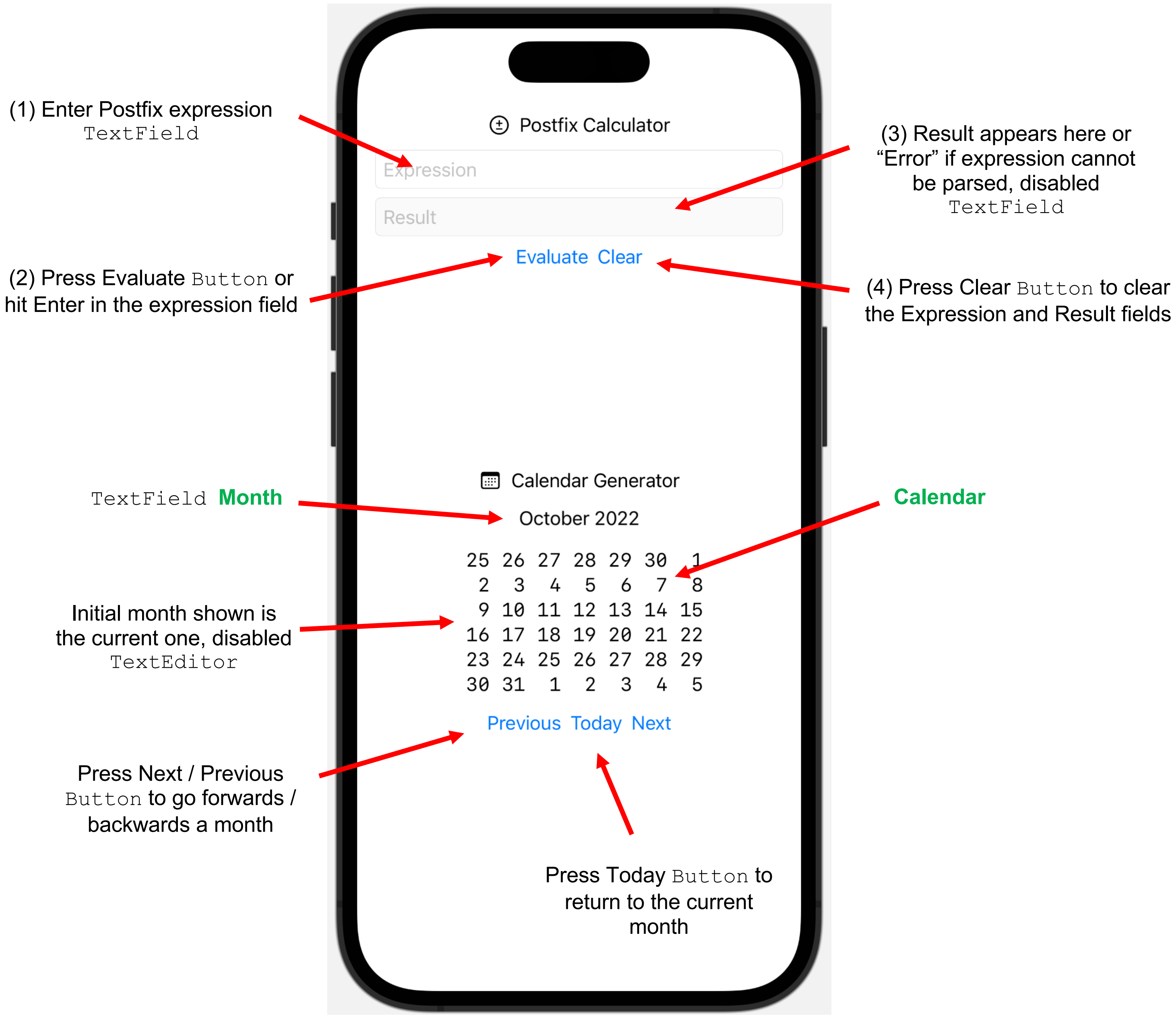
Requirements

Basic:

Implement and write tests for Swift versions of the Postfix Calculator and a Calendar Generator you developed in Kotlin for Assignment 1.

Advanced:

Implement a SwiftUI iOS App with the following features, accessibility labels are as shown or **in green**:



```
25 26 27 28 29 30  1
 2  3  4  5  6  7  8
 9 10 11 12 13 14 15
16 17 18 19 20 21 22
23 24 25 26 27 28 29
30 31  1  2  3  4  5
```

(1) Enter Postfix expression `TextField`

(2) Press Evaluate `Button` or hit Enter in the expression field

(3) Result appears here or "Error" if expression cannot be parsed, disabled `TextField`

(4) Press Clear `Button` to clear the Expression and Result fields

`TextField` **Month**

Calendar

Initial month shown is the current one, disabled `TextEditor`

Press Next / Previous `Button` to go forwards / backwards a month

Press Today `Button` to return to the current month

Stretch:

Your Postfix Calculator and Calendar Generator implementations and the associated SwiftUI App should exhibit 100% class, method, line, and branch coverage when your tests are executed.

What steps should you take to tackle this?

Start with the Postfix Calculator, writing tests as you go, then move on to the Calendar Generator and its tests. The logic is identical to the classes you developed in Assignment 1; the only difference is the language being used.

Then move on to the SwiftUI App starting with the Postfix calculator. Remember TextFields and Buttons have implicit accessibility labels defined by the text they initially display so make sure your tests are discovering the visual components using the correct accessibility labels.

Finally, move on to Calendar Generator UI. This time you may need to set accessibility labels programmatically. Take care to use the correct labels.

Note that a solution that passes the Basic requirement with perfect code coverage will score 60%.

How much code will you need to write?

A model solution that satisfies all requirements has approximately 500 lines of code, including functional and UI tests.

Grading scheme

The following aspects will be assessed:

1. (100%) **Does it work?**

a.	Basic	(40%)
b.	Advanced	(40%)
c.	Stretch	(20%)

2. (-100%) **Did you give credit where credit is due?**

   a. Your submission is found to contain code segments copied from on-line resources or created by code generation tools and you failed to give clear and unambiguous credit to the original author(s) in your source code You will also be subject to the university academic misconduct procedure as stated in the class academic integrity policy. (-100%).

   b. Your submission is determined to be a copy of a past or present student's submission. (-100%)

   c. Your submission is found to contain code segments copied from on-line resources that you did give a clear an unambiguous credit to in your source code, but the copied code constitutes too significant a percentage of your submission:

< 25% copied code	No deduction
25% to 50% copied code	(-50%)
> 50% copied code	(-100%)

What to submit

On the console (PowerShell on Windows), navigate to the folder you extracted the starter code into and run the appropriate command to create the submission archive:

Windows:
```
      $ Compress-Archive -Path . -DestinationPath Assignment4.zip
```
Linux:
```
      $ zip -r Assignment4.zip *
```
Mac:
```
      $ zip -x "*.DS_Store" -r Assignment4.zip *
```

**** UPLOAD** `Assignment4.zip` **TO THE CANVAS ASSIGNMENT AND SUBMIT ****