

## CS 478: Software Development for Mobile Platforms

Spring 2016

*Swift project*

*Due time:* 9:00 pm on Friday 4/29/2016

You are to implement a *day calculator app* in the Swift language with Apple's iOS as a target platform. Your app will take as input two dates, consisting of a day, month and year, whereby the first date chronologically precedes the second date. You must then compute the total number of days between the two dates, while including the last date but not the first date in the count. Thus, for instance, the number of days between today and tomorrow is one day. Your day calculator should compute the exact number of days, while taking into account the day, month and year of the two dates. In addition, your day calculator must take into account the differences in the length of different months of the year when computing the day count. Finally, your app must be aware of leap years and adjust the total day count accordingly when this is applicable.

You are not allowed to use the *NSDate* class or other related pre-existing classes of Swift, Cocoa and Cocoa Touch for this project. Instead, you must implement your own *GregorianCalendar* class with the appropriate instance variables and methods. You are not required to use multiple scenes or any segues in your storyboard. Also, you are not required to use any protocols for your app. You must, however, use the object-oriented features of Swift (e.g., classes) in order to receive credit for this project.

Your app may consist of a single *window* with multiple *views* for entering the three fields of the two dates and for displaying the computed results. Use three numeric fields (i.e., day, month and year) to enter each date. The day computation is performed when the user selects an appropriate button. When this happens, make sure to validate the user's input before computing the dates. For instance, you should flag the date of February 29, 2100 as invalid. At any point in time, your app will be working with a single pair of dates. The result of the computation, including information about erroneous input values, will be displayed in an appropriate text field.

*You must work alone on this project.* You are not allowed to discuss designs or share code with other students. However, you are encouraged to use the Piazza Project 5 board to post or answer questions about specific aspects of the project, as long as you do not post code.

To implement this project, you will be required to use an Apple Mac computer with the XCode developer environment, version 7.0 or above (the higher, the better, up to 7.3). If you do not own a Mac, you may use the ICL of the Computer Science Department or you may rent time from the service <http://www.macincloud.com>. A monthly special with an 8-hour daily access to Mac hardware and software costs \$35 according to the their web site.

Use an iPhone 5S as the target platform for your project. To turn in your project, please submit a .zip archive containing your entire XCode project and a text file named README.txt discussing how to use your iOS app.

Good luck!