CSCI 321/521 Assignment 4

Assignment

In this assignment, you will write a master-detail application that will display information about Presidents of the United States.
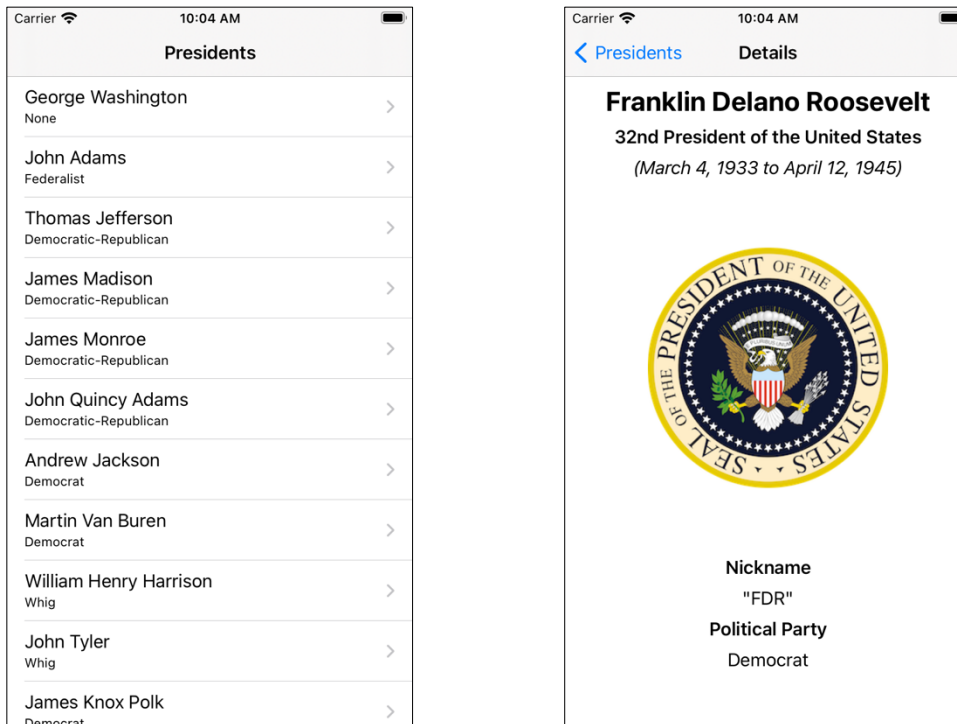
Program

Create a Master-Detail Application that will read data from a property list file and display it using a table view (similar to the recent demos).

You can download the property list file `presidents.plist` and images for this app from Blackboard and add them to your project. The property list stores the roster data as an array of dictionaries. Here's the XML for the dictionary for a single president:

```
<dict>
    <key>Name</key>
    <string>George Washington</string>
    <key>Number</key>
    <integer>1</integer>
    <key>Start Date</key>
    <string>April 30, 1789</string>
    <key>End Date</key>
    <string>March 3, 1797</string>
    <key>Nickname</key>
    <string>&quot;Father of His Country&quot;</string>
    <key>Political Party</key>
    <string>None</string>
</dict>
```

Screenshots

Here are some screenshots of what a master view controller and detail view controller for your app might look like:

The Presidential Seal used on the detail view controller is a 300 x 450 placeholder image. In the screenshot above, it is displayed in an Image View with its height set to 50% of the superview's height. The image `seal.png` can be downloaded from Blackboard and added to your project. Using an image on your detail view controller is optional.

Notes

- Sort the presidents in ascending order by number.
- To convert 1 to "1st", 2 to "2nd", etc., use a `NumberFormatter` with the style `NumberFormatter.Style.ordinal`.
- Files added to your project must be copied in, not added as symbolic links. Make sure that the check box that controls this is checked when you add a file to your project.
- You may assume that the smallest screen that the app will be run on will be the iPhone SE 2nd Generation.
- Your app should include app icons. Images for this purpose are available on Blackboard.

Extra Credit

- (30 points) Add a new view controller to your app that will let the user enter information for a new president. This will be a lot of work and doing it well will be a substantial programming and design challenge. The name and nickname can be entered using text fields, but the start and end dates should be selectable from date pickers and the political party should use a segmented control ("Democrat" and "Republican" would be the obvious choices for segment titles). The number can be set to 0 and then updated when you return to the master view controller (the newly created `President` object should always be added to the end of the array of `President` objects, so the correct number for the new President will be equal to the array's current `count` plus one).

  Perform some basic error-checking to ensure that none of the fields are empty and that the start date is less than the end date (Swift `Date` objects can be compared using relational operators). If the "Save" button is pressed and any of the data is invalid, display an alert for the user with an appropriate error message and do not perform the segue. The best place in which to do this sort of data validation is probably the method `shouldPerformSegue(withIdentifier:sender:)`, which is called just before the method `prepare(for:sender:)` is called.

  Using Date Pickers to enter the start and end dates is a fairly obvious choice. It is possible to create a Text Field that uses a Picker View or a Date Picker for input rather than the usual keyboard. I will either cover that in class next week or post some example code illustrating how to do it.