

Washington State University
School of Electrical Engineering and Computer Science
Spring 2021

CptS 479 Mobile Application Development

Homework 7

Due: March 10, 2021 (11:59pm)

General Instructions: Put the entire app directory into one zip file and submit as an attachment under Content → Assignments → Homework 7 for this course on Blackboard Learn by the above deadline. Note that you may submit multiple times, but only the most recent entry submitted before the above deadline will be graded.

This homework builds on HW5¹ or HW6 (your choice) by adding an alert to confirm deletion and adding the ability to choose a quotation for a “Quote of the Day” notification. See screen shots below. Specifically,

1. Ensure your app has all HW5 capabilities, including a table view to list and delete the quotations, an add quotation view to add quotations, and a detail view to view the quotation details. You can still use HW6 if you want, but we will not be accessing the settings view or changing any of the device settings.
2. Implement an alert that is triggered when you attempt to delete a table entry. After tapping Delete in the row, an alert should appear with title “Delete Quotation?” and the message set to the quote to be deleted. The two actions should be “Delete” with .destructive style, and “Cancel” with .cancel style. Tapping Cancel should do nothing, and tapping Delete should proceed to delete the table row.
3. For the notification, we will need to uniquely identify each quotation with a string ID that is passed in the userInfo dictionary of the notification and then back to the app when the user taps the notification. So, add the new property “id” to the Quotation class of type String. In the init method, set this “id” to “UUID().uuidString”. This is guaranteed to generate a unique identifier each time.
4. In the AppDelegate (or the SceneDelegate) request authorization to schedule notifications. When the app starts up, we will always choose “Allow”, but we will later disable notifications inside the device settings to check that you handle this case.
5. On the quotation detail view controller, center a button titled “Schedule Notification” underneath the author label. When tapped, the app should first check that notifications are still allowed, and if so, schedule a notification with title “Quote of the Day” and the body set to the quote. You should also set the userInfo[“id”] dictionary entry to the quotation’s

¹ My solution to HW5 is available on Blackboard Learn. You may use it as a starting point for this homework.

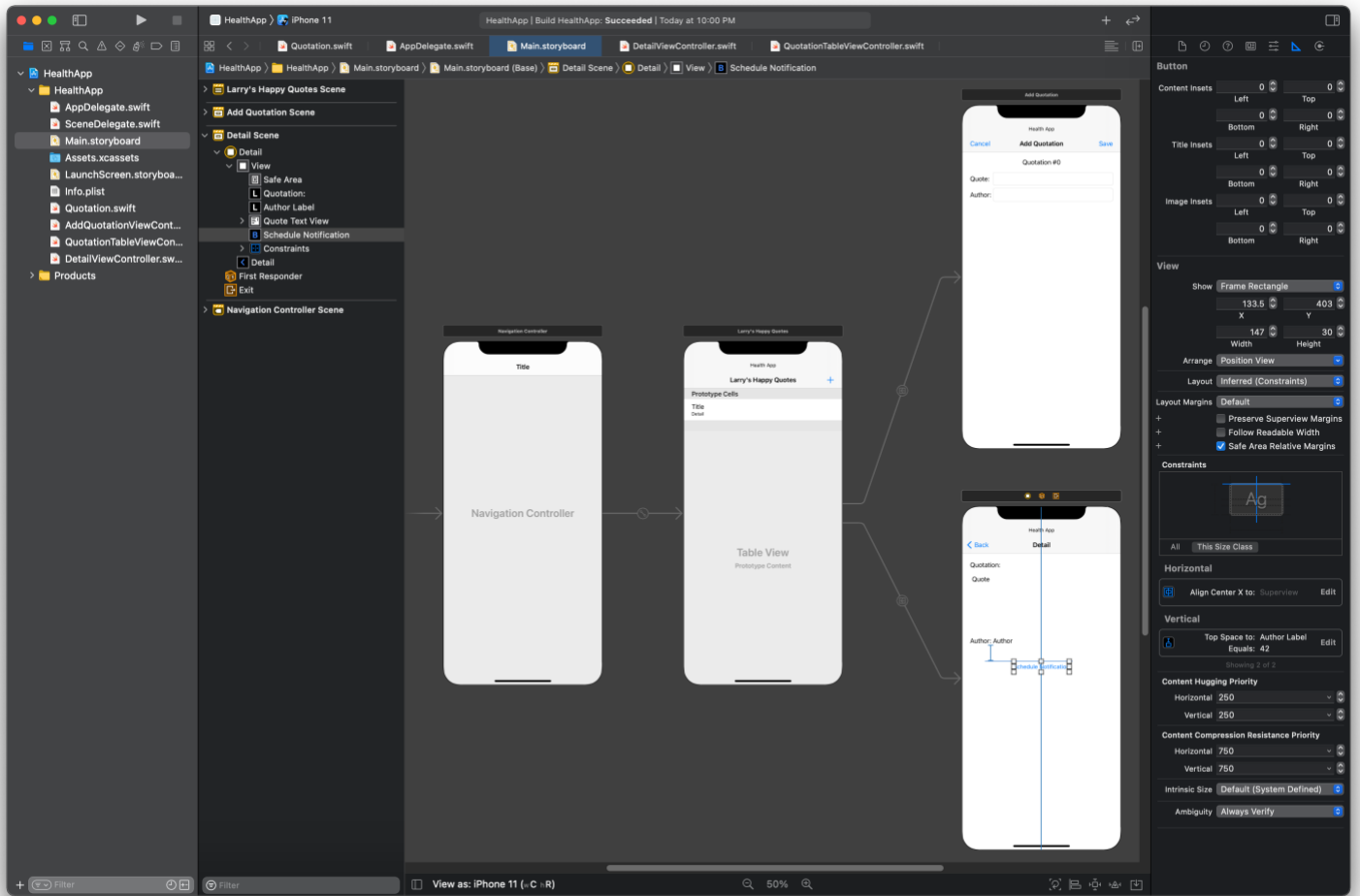
“id”. Set the notification to trigger five seconds after adding it, and then add it to the `NotificationCenter`.

6. Add a `handleNotification` method to the main quotation table view controller. This method should extract the quotation id from the `userInfo` dictionary, set a class variable (e.g., `quoteOfTheDayID`) to this id, and reload the table. If this quotation is still in the table, its quote should be displayed in red. All other quotes, even ones previously colored red, should be reset back to the default color.
7. Next, you need to call this `handleNotification` method when the app returns to the foreground (after the user taps the notification) by implementing the `didReceive` method of the `UNUserNotificationCenterDelegate`. Since we don’t know which view is currently the top view controller on the navigation stack, we will search through them all to find the main quotation table view controller and then call its `handleNotification` method. Below is a code snippet for doing this inside `didReceive` in the `AppDelegate`, assuming the main quotation table view controller is of type `QuotationTableViewController`.

```
let navVC = UIApplication.shared.windows.first!.rootViewController
              as! UINavigationController
let vcs = navVC.viewControllers
for vc in vcs {
    if let mainVC = vc as? QuotationTableViewController {
        mainVC.handleNotification(response)
    }
}
```

8. Test your app using the iPhone 11 simulator, which is the same simulator we will use to grade your app.
9. Be sure that auto layout constraints are set so that all view elements are appropriately displayed with no overlap or trimming regardless of device orientation.

Storyboard (based on HW5):



Simulator (just showing new HW7 capabilities):

