

## CS 378 - Fall 2014 - Homework 3

**Due date:** 9/20/14 by 11:59pm, late work is not accepted

**Submit:** A zip file of your entire project folder.

Name your zip file: **<last-name><first-name>-hw3.zip**

Example: for Joe Smith SmithJoe-hw3.zip

**Description:** This will be an exercise in defining and using delegates, protocols, GCD and creating a simple user interface.

The application behavior should be:

- The user enters values into the name and city fields
- The user touches the Return key on the keyboard and the keyboard is dismissed
- The user touches the Save button and after 5 seconds the message-label UI element is modified with the string <name> - <city>
- If either the name or city fields are empty when the user touches the Save button the message "You must enter a value for \*both\* name and city!!" should be displayed in the message label area.

1. Create a Single View application project named **HW3**.
2. Define the Class Prefix to be **HW3**.
3. Open the storyboard and modify the empty view controller to match the screen shot below.

This user interface contains the following UI elements:

- A label for "Enter your name and City"
- A label for "Name:"
- A label for "City:"
- A text field to enter the name value.
- A text field to enter the city value.
- A label for "When ready click save".
- A button with the title "Save".
- A label that will be modified programmatically for messages, but can be initially set to "<message label>" or just blank.

4. Define a class named DataModel, derived from NSObject.

To include the following:

- Public method signature:  
-(void)saveWithName:(NSString \*)name AndCity:(NSString \*)city;

This method should call the delegate modifiedData method, passing in a string formatted with the passed in name and city, to be <name> - <city>.

- Public property for a delegate of type DataModelProtocol.

5. Define a protocol named **DataModelProtocol** in the DataModel header file.

To include the following:

Required method:

```
-(void)modifiedData:(NSString *)data;
```

This method should use GCD to modify the <message label> UI element (so it should use the main UI queue) with the string passed in; after delaying 5 seconds.

The view controller will be the delegate for the DataModelProtocol.

6. Define a button handler called btnSaveClicked.

The button handler should get the name and city values from the text fields and, if both are not empty, call the DataModel saveWithName:AndCity: method, passing in the two values.

If either name or city is empty, update the message label text to say “You must enter a value for \*both\* name and city!!”.

Grading criteria:

1. The application builds and runs. (10%)
2. The user interface matches the screen shot. (30%)
3. The delegate is defined and used correctly. (10%)
4. The protocol is defined and used correctly. (10%)
5. The usage of GCD is correct. (20%)
6. The application behaves as defined. (20%)

Before the user does anything:

Carrier 8:18 PM

Enter your name and city:

Name:

City:

When ready click save

[Save](#)

The image shows a mobile application interface with a light gray background. At the top, there is a status bar with 'Carrier', a Wi-Fi icon, the time '8:18 PM', and a battery icon. Below the status bar, the text 'Enter your name and city:' is displayed. Underneath this text are two input fields: 'Name:' followed by a white rounded rectangle, and 'City:' followed by another white rounded rectangle. Below the input fields, the text 'When ready click save' is centered. At the bottom of the form, there is an orange rectangular button with the word 'Save' in blue text.

The end result:

Carrier 8:16 PM

Enter your name and city:

Name: Bob Seitsinger

City: Austin

When ready click save

Save

Bob Seitsinger - Austin

The image shows a mobile application interface with a light gray background. At the top, there is a status bar with 'Carrier', a Wi-Fi icon, the time '8:16 PM', and a battery icon. Below the status bar, the text 'Enter your name and city:' is displayed. Underneath, there are two input fields. The first is labeled 'Name:' and contains the text 'Bob Seitsinger'. The second is labeled 'City:' and contains the text 'Austin'. Below the input fields, the text 'When ready click save' is displayed. Underneath this text is an orange button with the word 'Save' in blue. At the bottom of the screen, the text 'Bob Seitsinger - Austin' is displayed.