CS4520/5520: Mobile Application Development

Weekly Assignment 8 (100 points)

Basic Instructions:

1. **Submission details:**
    a. The project name should be: **WA8_<Your_Final_Project_Team_Number>**
    b. After building the project, right-click on the project from Project Navigator.
    c. Click on Show in Finder.
    d. Select all the files and folders, including the .xcworkspace file, and compress them to create a zip file.
    e. Then, submit the zip file in Canvas.
    f. (Please read the "How to Submit the Assignments" from Modules -> Quick Links)

Weekly Assignment 8

This is a teamed assignment, and this will be the final mandatory assignment for the semester. I will not provide you with any design for this assignment. You should carefully create a usable design with the elements you have learned. You can experiment with other UI elements as well if you want to (keep in mind that if you use other UI elements, the help from the TAs would be limited; I will try my best to help you).

In this assignment, you will create an application that uses Firebase Authentication and Firestore Database.

Required functionality:

1. **Authentication**:
    a. **Register**:
        i. A user should be able to register an account with the following personal details: name, email, and password.
        ii. **Use a repeat password field to validate the intended password.**
    b. Login: a user should be able to log into the app using their email and password.
    c. Logout: a user should be able to logout from the application.
2. **Messenger/Chat:** you need to enable one-on-one chat between authenticated users. **For simplicity, we assume that all the authenticated users in your Firebase project are your friends.**
    a. The chat list screen should be the main screen of the app.
    b. Each user should be able to send text messages to their friends.
    c. Each chat screen should enable one-on-one chatting. It should keep the past chats on screen, like WhatsApp or Messenger.
        i. Each cell of the chat table view should display the following:
            1. The sender's name
            2. The text the sender sent
            3. And the date and time the message was sent.

ii. It should automatically scroll down to the end of a table view like a messenger app.

```
func scrollToBottom() {
        let numberOfSections = chatView
            .tableViewMessages
            .numberOfSections
        let numberOfRows = chatView
            .tableViewMessages.numberOfRows(
                 inSection: numberOfSections - 1)

        if numberOfRows > 0 {
            let indexPath = IndexPath(
                row: numberOfRows - 1,
                section: numberOfSections - 1)

            chatView.tableViewMessages
                .scrollToRow(at: indexPath,
                    at: .bottom, animated: true)
       }
}
```

iii. You can store the date and time of message creation and display it with the message. See the following explanation to work with Date and Time: https://auth0.com/blog/introduction-date-time-programming-swift-1/

iv. The user should be able to distinguish between their own messages and their friend’s messages. You can use different backgrounds or change the constraints to do that. For example,

1. The messages the user sends can be right-aligned, and the messages the friend sends can be left-aligned.
2. Or you can keep the cell background of the friend's text white and change the cell background of the user's text to light gray with a low alpha component.
3. HINT: you should use "cellForRowAt" adopted method for the table view to make changes.
    a. You can directly write the codes inside that method. (Setting background color, adding /overwriting the current constraints, etc .)
    b. Or create a method inside the View file and set constraints using that method.
    c. Or, a better way would be to design two different cells for the type of users (self, or friend). Then dequeue the cell with the appropriate identifier for the corresponding user type. (indexPath.row can help you decide).

3. Who would be my friends?

a. All the authenticated users are supposed to be your friends.

4. **You are allowed to discuss this assignment with your project teammates. You can sketch up your initial design first. It helps you materialize your ideas and write code in a structured way.**

NOTE: You need to check for any anomaly in the case of inputs. Your application should alert the user explaining the issue if any invalid input is given.

Happy coding!