

ITIS/ITCS 4180/5180 Mobile Application Development
In Class Assignment 9

Basic Instructions:

1. In every file submitted you **MUST** place the following comments:
 - a. Assignment #.
 - b. File Name.
 - c. Full name of all students in your group.
2. Each group should submit only one assignment. Only the group leader is supposed to submit the assignment on behalf of all the other group members.
3. Your assignment will be graded for functional requirements and efficiency of your submitted solution. You will loose points if your code is not efficient, does unnecessary processing or blocks the UI thread.
4. Please download the support files provided with this assignment and use them when implementing your project.
5. Export your Android project and create a zip file which includes all the project folder and any required libraries.
6. Submission details:
 - a. Only a single group member is required to submit on moodle for each group.
 - b. The file name is very important and should follow the following format:
Group#_InClass09.zip
 - c. You should submit the assignment through Moodle: Submit the zip file.
7. **Failure to follow the above instructions will result in point deductions.**

In Class Assignment 9 (100 Points)

In this assignment you will get familiar with fragments. You will re-implement an app to send and receive messages. You will use parse.com to store and retrieve the messages, and should be performed using the background mechanisms provided. The app consists of a single empty activity (MainActivity) and four fragments.

The image shows two side-by-side wireframes for mobile app screens. The left screen, titled 'MessageMe (SignUp)', contains four text input fields labeled 'User Name', 'Email', 'Password', and 'Confirm Password'. Below these fields are two buttons: 'Sign Up' and 'Cancel'. The right screen, titled 'MessageMe (Login)', contains two text input fields labeled 'User Name' and 'Password'. Below these fields are two buttons: 'Login' and 'Create New Account'. Both screens have a dark header bar with a speech bubble icon and a menu icon.

(a) Login Fragment

(b) SignUp Fragment

Figure 1, Wireframe for Login and SignUp Activities

Part A: User Signup and Login (30 Points)

Your app should implement both login and signup functionalities. You should use parse.com to store the user name, email address and password in the User class. The requirements are as follows:

1. When the Login fragment first starts, the app should check if there is a current user session, by using the parse provided methods to check if there is a valid current user:
 - a) If there is a current valid user, then the Main Activity should replace the Login fragment with the Messages fragment.
 - b) If there is no current valid user, then the Login fragment should be used to provide user login.
2. Create a Login fragment (Figure 1(a)):
 - a) The user should provide their email and password.

- Check the user input, if the email or password field is left empty, print a toast message indicating that these fields are required and don't submit the login information to parse.com.
 - b) The provided credentials should be used to authenticate the user using parse.com. Clicking the “Login” button should submit the login information to parse.com to verify the user’s credentials.
 - If the user is successfully logged in then the Main Activity should replace the Login fragment with the Messages fragment.
 - If the user is not successfully logged in, then show a toast message indicating that the login was not successful.
 - c) Clicking the “Create New Account” button should replace the Login fragments with the Signup fragment.
3. Create a Signup fragment (Figure 1(b)):
- a) Clicking the “Cancel” button should signal the Main Activity to replace the Signup fragment with the Login fragment.
 - b) The user should provide their user name, email and password. The provided credentials should be stored in the User class in parse.com. Clicking the “Sign Up” button should submit the user’s information to parse.com to verify the user’s credentials.
 - Check the user input, if any of the fields is left empty, or if the password and confirm password do not match, print a toast message indicating the corresponding error message and don't submit the provided information to parse.com.
 - If an account with the same email already exists, display an error message indicating that the account account was not created and the user should select a different email.
 - If an account with the provided credentials does not already exist, then store the new account information and display a Toast indicating that the user has successfully login. Then reload the Messages fragment.
 - The username & email should set to the same value in the user’s table.

Part B: Messages Fragment (50 Points)

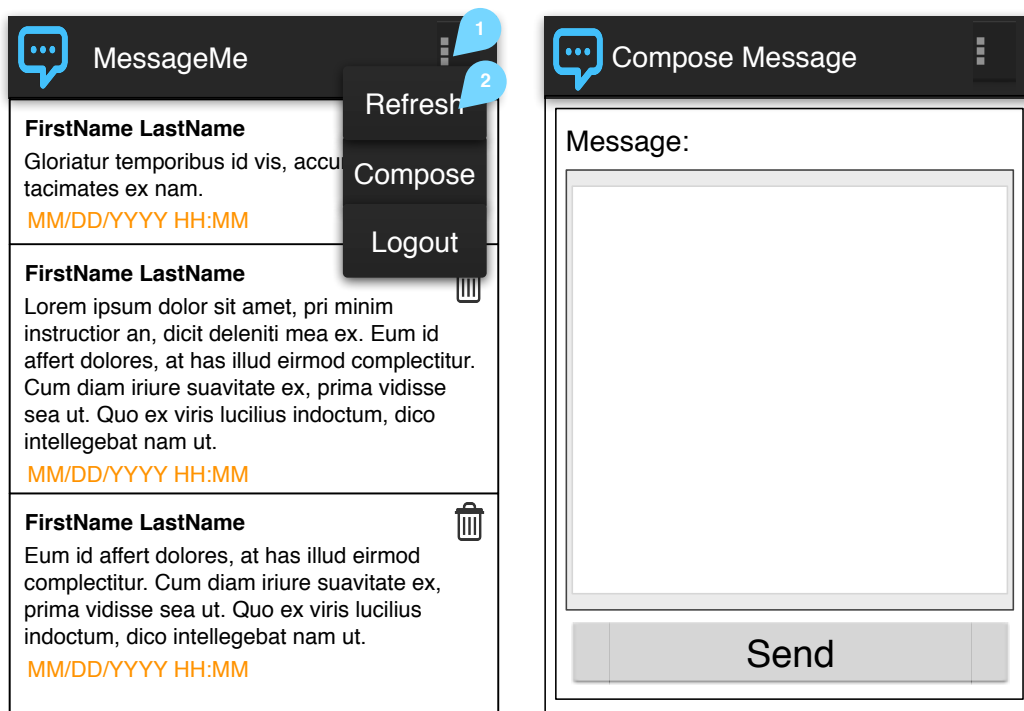
The Messages fragment should retrieve the messages for the currently logged in user that are stored in the Message class on parse.com. A ListView should display the items in the messages list, see Figure 2a. The requirements are:

1. In parse.com create a new Messages parse class to store the messages.
2. The messages list items should be retrieved in the background using the Parse provided background query mechanism. The query should retrieve the Messages list items belonging to the currently logged in user. Check the documentation provided at <https://parse.com/docs/android/guide#queries>
 - a) You can consider using the query with constraints. Check the documentation at <https://parse.com/docs/android/guide#queries-query-constraints>
 - b) Clicking the “Refresh” should execute the query again and refresh the list, to show new messages received.
3. Tapping the delete icon in the list should do the following :

- Delete the current message from the Messages table. Check the documentation at <https://parse.com/docs/android/guide#objects-deleting-objects>
4. Clicking the “Compose” action bar menu item should show replace the current fragment with the **Compose** fragment, as shown in Figure 2b to enable the currently logged-in user to send messages.
 5. Clicking the “Logout” action bar menu item should logout the current user, and replace the Messages fragment with the Login fragment.

Part C: Compose Fragment (30 Points)

1. The To field should have the user name of the recipient, Note that the user name serves as the primary key of the Users table in your data base. This means that the composed message belongs to user with the specified email.
2. Message field : this field should have a maximum of 120 characters. User should be able to enter the message body. You should validate the user’s input and ensure that the text is provided. If no input is provided, display a Toast to indicate the a missing description.
3. Upon tapping the send button, save the new Message item in the Messages class on parse.com using Parse’s background storing mechanism, and display a toast message indicating the successful addition of the item. Then replace the current fragment with the Messages fragment.



(a) Messages Fragment

(b) Compose Fragment

Figure 2, Wireframe for Messages and Compose Fragments