Mobile App Development

Assignment 08

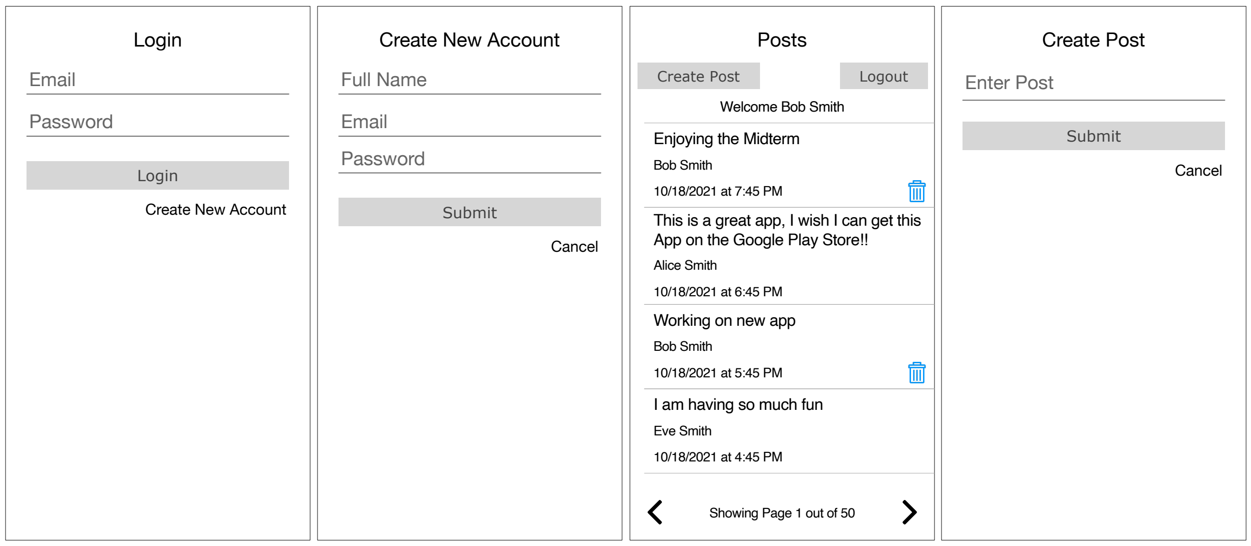
Basic Instructions:

1. In every file submitted you MUST place the following comments:
    a) Assignment #.
    b) File Name.
    c) Full name of the student.
2. Each group is required to submit the assignment on Canvas.
3. Submit Codes:
    a) Zip all the project folder to be submitted on canvas.
4. Submission details:
    a) The file name is very important and should follow the following format: **Assignment#.zip**
    b) You should submit the assignment through Canvas: Submit the zip file.
5. **Failure to follow the above instructions will result in point deductions.**

<u>Assignment 8 (100 Points)</u>

In this assignment you will develop a simple posts application, in which users can make short 140 character posts visible to other users on the app. You are provided with a Postman file that contains all the APIs for this app.

1. Use the Alamofire and SwiftyJSON libraries in this app in order to make all the http connections and API calls. All the data returned by the APIs is in JSON format.
2. All the network calls should be done in a background thread.
3. All UI changes, updates and edits should be performed on the main thread.



Enjoying the Midterm
Bob Smith
10/18/2021 at 7:45 PM

This is a great app, I wish I can get this App on the Google Play Store!!
Alice Smith
10/18/2021 at 6:45 PM

Working on new app
Bob Smith
10/18/2021 at 5:45 PM

I am having so much fun
Eve Smith
10/18/2021 at 4:45 PM

(a) Login **(b) Register** **(c) Posts** **(d) Create Post**

Figure 1, Application User Interface

Part 0: Checking User Authentication (10 Points)

You should use the UserDefaults to store and retrieve the authentication token and the user information. For information on UserDefaults check the documentation https://www.hackingwithswift.com/read/12/2/reading-and-writing-basics-userdefaults and storing custom object in UserDefaults by using the Codable protocol as discussed in the following tutorial https://medium.com/@herlinaastari/store-a-custom-object-with-userdefaults-in-swift-5-2bbacfd92c8a.The requirements are as follows:

1. The requirement is that if the user has successfully logged in or registered, then the UserDefaults should be used to store the retrieved information. Which implies that if the user has a token then they are authenticated.
2. In the SceneDelegate scene willConnectTo method
   a. Check to if UserDefaults contains a token,
      i. If true then call SceneDelegate.showPosts() to show the Posts Screen.
      ii. If false then call SceneDelegate.showLogin() to show the Login Screen.
3. Upon user logout the token and user information should be deleted from the UserDefaults.
4. Check the comments included in the provide skeleton application for hints.

Part 1: Login ViewController (10 Points)
The interface should be created to match Figure 1(a). The requirements are as follows:

1. Upon entering the email and password:
    a. Clicking “Login” button, if all the inputs are not empty, you should attempt to login the user by using the **/posts/login** API.
    b. If login is successful, then store parsed authentication token and user information in the UserDefaults and **replace** the current ViewController with the Posts ViewController by calling the provided method *SceneDelegate.showPosts()*.
    c. If login is not successful, show an alert dialog showing the error message returned by the api.
    d. If there is missing input, show an alert dialog indicating missing input.
2. Clicking the “Create New Account” should segue to the Create New Account ViewController.

```
{
    "status": "ok",
    "token": “eyJ0eXAiOiJKV1QiLCJhbGciOiJIUzI1NiJ9.eyJpYXQiOjE2MTc0MjgzMTUsImV..”,
    "user_id": 2,
    "user_fullname": “Alice Smith"
}
```

Figure 2, Highlighting the Auth Token returned by login and signup

Part 2: Create New Account ViewController (10 Points)
This screen allows a user to create a new account. The interface should be created to match Figure 1(b). The requirements are as follows:

1. Upon entering the full name, email and password, clicking the Submit button should:
    a. If all the inputs are not empty, you should attempt to signup the user by using the **/posts/signup** API.
    b. If the registration is successful, then store parsed authentication token and user information in the UserDefaults and **replace** the current ViewController with the Posts ViewController by calling the provided method *SceneDelegate.showPosts()*.
    c. If the registration is not successful, show an alert dialog showing the error message returned by the api.
    d. If there is missing input, show an alert dialog indicating missing input.
2. Clicking “Cancel” should **go back to** the Login ViewController.

```
//token received /posts/login or /posts/signup
var token : String = "eyJ0eXAiOiJKV1QiLCJhb......";
let headers: HTTPHeaders = [
    "Authorization": "BEARER " + token
]
```

Figure 3, Code snippet showing how to add Authorization Header to Request

Part 3 : Posts ViewController (50 Points)

This screen enables the user to view the posts list. As shown in Figure 1(c), The requirements are as follows:

1. Clicking the "Logout" button should delete the authentication token and user information from the UserDefaults, show the Login ViewController by calling the provided method *SceneDelegate.showLogin()*.
2. Clicking the "+" button should display the Create Post ViewController.
3. The greeting label should show "Hello XX" where XX is the name of the logged in user. Note, this information should have been captured from the response of either the /posts/login or /posts/signup apis.
4. The list of posts should be retrieved be calling the **/posts** API. **Note that this API requires the Authorization header to include the token, please create the Alamofire request and include the header as shown in Figure 3.**
   a. The /posts api will return a single page of posts based on the provided "page" parameter, where each page includes 10 results. The api requires a "page" query parameter to indicate which result page is being requested. The page parameter starts from 1.
      i. The /posts api returns an array of posts based on the provided page parameter, in addition, the api will return the totalCount which is the total number of posts currently stored in the system.
      ii. Each post returned will include the post id, post text, post creation date/time, post's creator id and name.
   b. Create a Post class, and parse the returned list of posts into an array containing the parsed Post objects. Use the parsed list of Post objects to display the posts list in UITableView.
   c. When the ViewController first loads, the first page should be loaded by setting the page parameter to 1 when calling the /posts api.
5. For the posts list, each post row item should display the post text, creators name, creation date as shown in Figure 1(c). The trash icon should only be visible for post items that were created by the currently logged in user, you should use the user id to perform this comparison. For example, in Figure 1(c) the currently logged in user is "Bob Smith" who has created the first and third posts displayed.
   a. Clicking on the trash icon, the app should present an alert dialog asking the user if the selected post should be deleted. If the user picks "OK" the selected post should be deleted by using the **/posts/delete** api, note that this api requires the authorization header, see Figure (3) for reference. Upon successfully deleting a post item, the **/posts** API should be called to retrieve the latest list of posts and the posts list should be refreshed with the retrieved posts.
6. Setup a Notification Center observer to listen to a notification that might be sent by the Create Post ViewController. Upon receiving a message from the Create ViewController:
   a. The **/posts** API should be called to retrieve the latest list of posts and the posts list should be refreshed with the retrieved posts.
7. At the bottom of the ViewController you should include the right, left and text to enable paging as shown in Figure 4(a).
   a. The text shows "Showing Page YY out of NN", to indicate that the currently

displayed page is page YY and there are a total of NN pages. The total number of pages should be calculated using the total number posts (totalCount) and the page length containing 10 posts (ceiling of totalCount/10). These values should be updated whenever the **/posts** api is called.

   b. Upon clicking on the right (>) button the **/posts** api should be called to retrieve the posts for the next page (current page + 1). Note that the pages start from 1 to totalCount/10, you should verify the next page number and avoid going beyond the total number of pages.
   c. Upon clicking on the left (<) button the **/posts** api should be called to retrieve the posts for the previous page (current page - 1). Note that the pages start from 1 to totalCount/10, you should verify the previous page number is greater than or equal to 1.
   d. Upon returning from the /post api the posts list be refreshed with the posts retrieved. In addition, the total number of pages should be computed using the returned totalCount. In addition, the “Showing Page YY out of NN” text should be updated based on the selected page and newly computed total number of pages.

Part 4 : Create Post ViewController (20 Points)
This screen enables the user to create a new post. The requirements are as follows:
1. Clicking the “Cancel” button should dismiss this ViewController.
2. Upon entering the post text, clicking the Submit button should:
   a. If all the inputs are not empty, a new post should be created using **/posts/create** api. Note that this api requires the authorization header, see Figure 3 for reference.
   b. If the api is successful, post a notification using the Notification Center to message the Posts ViewController to indicate that a new post has been added. Then dismiss this ViewController.