Mobile App Development

In-Class Assessment 7 (2 Hours)

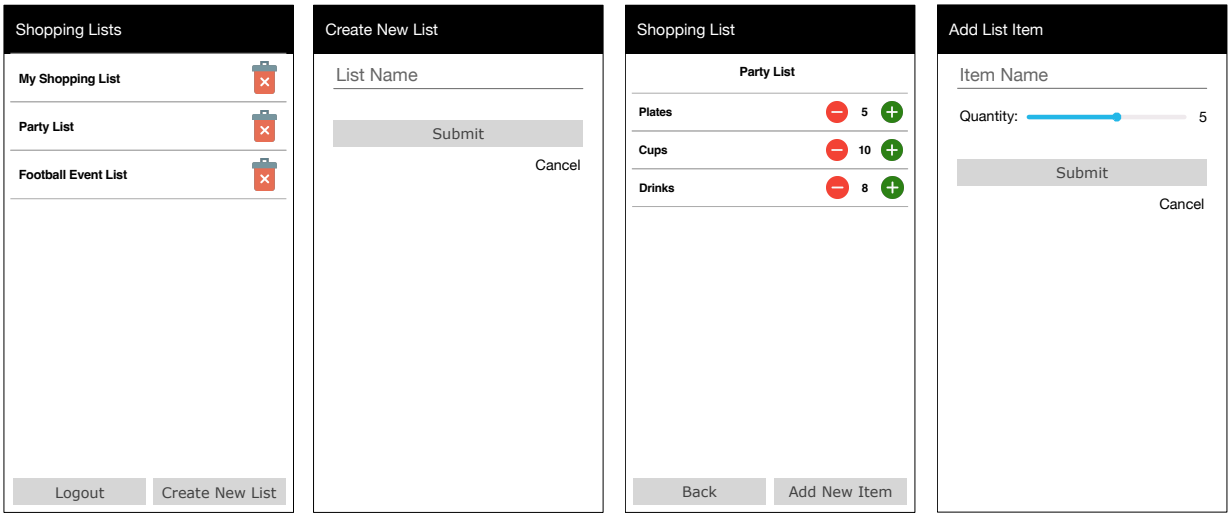
Basic Instructions:

1. This is an In Class Assessment, which counts for 10% of the total course grade.
2. This assessment is an individual effort. Each student is responsible for her/his own assessment and its submission.
3. Once you have picked up the assessment, you may not discuss it in any way with anyone until the assessment period is over.
4. During the assessment, you are allowed to use the course videos, slides, and your code from previous home works and in class assignments. You can use the internet to search for answers. You are NOT allowed to use code provided by other students or solicit help from other online persons.
5. Answer all the assessment parts, all the parts are required.
6. During the assessment the teaching assistants and Instructors will pass by each student and ask them to demonstrate their application. Your interaction with the teaching assistants and instructors will be taken into consideration when grading your assessment submission.
7. Please download the support files provided with the assessment and use them when implementing your project.
8. 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.
9. Create a zip file which includes all the project folder, any required libraries, and your presentation material. Submit the exported file using the provided canvas submission link.
10. **Do not try to use any Social Messenger apps, Emails, Or Cloud File Storage services in this exam.**
11. **Failure to follow the above instructions will result in point deductions.**
12. **Any violation of the rules regarding consultation with others will not be tolerated and will result disciplinary action and failing the course.**

In-Class Assessment 7 (100 Points)

In this assignment you will develop a shopping lists app.

1. Use the provided skeleton application:
   a. Add app with *"edu.uncc.assessment07"* package name to your Firebase project.
   b. Replace the "google-services.json" with your Firebase provided file.
   c. The skeleton app includes the full implementation of the login, signup screen, and all the UI and transition related code.



(a) Login Screen (b) Register Screen (c) Products Screen (d) Cart Screen

Figure 1, Application Wireframe

Part 1: Shopping Lists Fragment (15 Points)

This fragment lists the user's shopping lists the requirements are as follows:

1. Setup a snapshot listener to retrieve the shopping lists for the current user:
   a. Each shopping list should be stored as a separate document on firestore.
   b. Use a query based on user id (uid) to limit the snapshot listener to only retrieve the shopping lists that belong to the currently logged in user.
2. The implementation for "Logout", "Create New List" and clicking on a row item have already been provided in the skeleton app. In addition the RecyclerView adapter has been implemented.
3. Clicking on the trash can should **(Bonus 20 Points)**:
   a. Delete all the shopping list items in the selected shopping list (sub-collections)
   b. Delete the shopping list.

Part 2: Create New List Fragment (20 Points)

This fragment allows the user to create a new shopping list, requirements as follows:

1. Clicking "Submit" should:
   a. Store a new Firestore Document which includes the name, ownerId and docId. This matches the provided "ShoppingList" class.
   b. Go back to the previous fragment by calling "createNewListDone()".

Part 3: Shopping List Fragment (45 Points)
This fragment lists the shopping items in the selected shopping list (see Fig 1(c)), the requirements are as follows:

1. Setup a snapshot listener to retrieve the shopping list items for the selected shopping list see Fig 1(c).
    a. Each shopping list item should be stored as a separate document on firestore under a sub-collection in the provided shopping list document.
2. Clicking on the “+” icon:
    a. Update the firestore document for the selected shopping list item to increment the “quantity” by 1.
3. Clicking on the “-” icon:
    a. If the current quantity of the selected shopping item is greater than 1, update the firestore document for the selected shopping list item to decrement the “quantity” by 1.
    b. If the current quantity of the selected shopping item is less than or equal to 1, delete the firestore document for the selected shopping list item.
4. The implementation for “Back” and “Add New Item” have already been provided in the skeleton app. In addition the RecyclerView adapter has been implemented.

Part 4: Add List Item Fragment (20 Points)
This fragment allows the user to add a new shopping list item to the provided shopping list, requirements as follows:

1. Clicking “Submit” should create a new document to store the new shopping list item:
    a. Store a new Firestore document in a sub-collection under the provided shopping list document.
    b. The document should include the name, ownerId and quantity, which matches the provided “ShoppingListItem” class.
    c. Go back to the previous fragment by calling “addListItemDone()”.

Section:	
Student Name:	
Student ID:	

Part #	Features	Total	Grade	Comments
P2	Create New List: - Shopping list added to Firestore as a separate document and includes name, ownerId and docId.	20		
P1	Retrieve the shopping lists from Firestore - Snapshot Listener setup with a query to retrieve only the shopping lists that belong to the currently logged in user. - Shopping lists are parsed in an array list of ShoppingList objects.	15		
P4	Add New List Item: - Shopping list item added to Firestore as a document in a sub-collection under the provided shopping list document. - The new document should include the name, ownerId and quantity.	20		
P3	Retrieve the shopping list items from Firestore - Snapshot Listener setup - Shopping List Items are parsed in an array list of ShoppingListItem objects.	15		
P3	Handle clicking on “+” - Shopping List Item document updated to increment the quantity by 1.	10		
P3	Handle clicking on “-”: Shopping List Item document updated to decrement the quantity by 1 (if quantity is greater than 1).	10		
P3	Handle clicking on “-”: Shopping List Item document deleted if the quantity is ≤ 1.	10		
Total		**100**		
P1	Delete Shopping list: **(BONUS)** - Deleted all the documents in sub-collection shopping list items for the selected shopping list. - Delete the shopping list from firestore.	20		

Table 1: Grading Key