

CMPS 312 Mobile Application Development

Lab 5 - RecyclerView

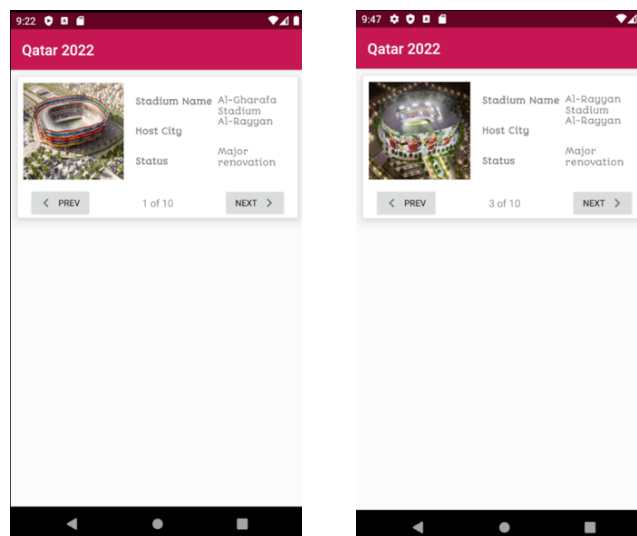
Objective

In this Lab you will build **Stadium App** to practice the following skills:

1. Read and parse a json file from the **assets** folder.
2. Use a **RecyclerView** to display scrollable list items.
3. Events handling such as button click and text changed events.
4. Practice adding **menus** to the app.

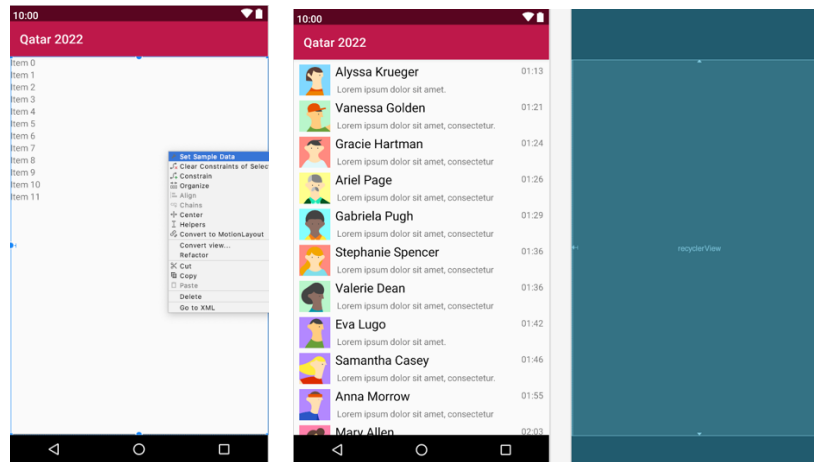
Stadium App – Version 1

1. Sync Lab GitHub repo and copy **Lab5-RecyclerView** folder into your repository.
2. Open the project ***Qatar2022 App*** in Android Studio.
The project has the following folders and files:
 - a. **layout**: the activity layout has been provided. Explore it and notice the ids of the views you will access programmatically.
 - b. **drawables**: images needed for this app.
 - c. **assets**: has **stadiums.json**
3. Create **Stadium** data class to hold stadium data as described in the json file.
4. Create object named **StadiumRepository**. Add an `initStadiums(context:Context)` function to read and parse the data from **stadiums.json** provided under the assets folder. The data should be loaded into stadiums list.
5. Open the MainActivity and implement the following application.
6. You should handle click events of previous and next buttons to cycle through the list of stadiums.
7. Run and test the app as you progress. The app should look as shown below.

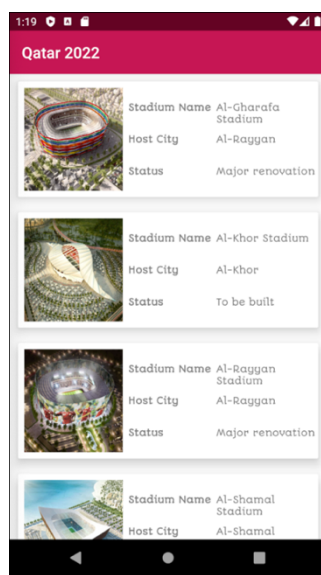


Stadium App - Version 2 (using RecyclerView)

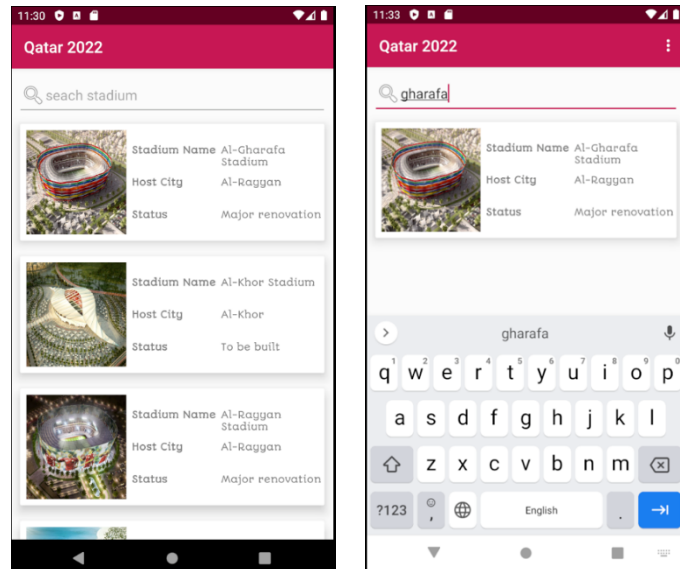
1. Add a new activity named **StadiumListActivity**. Then make it the start-up activity in **AndroidManifest.xml**.
2. Open **activity_stadium_list.xml** layout file and add a **RecyclerView** and set its id to **stadiumsRv**.
3. The activity layout design should look as shown below. [hint: you can use 'Set sample data' to load some test data to **RecyclerView**]



4. Create **StadiumAdapter** class to provide the **StadiumViewHolder** and to display it in a stadium details.
5. Modify the **StadiumActivity** to connect the **stadiumsRv** with the **StadiumAdapter** and set the RecyclerView adapter and the layout manager to use a Linear Layout.
6. Run and test the app as you progress. The app should look as shown below.



7. Modify the stadium activity layout to add a **SearchView**.
Implement the search to filter the stadiums based on the name entered in the search box.



8. Add a **Toolbar** with 2 menu options to allow the user to switch the **RecyclerView** layout from a **Linear Layout** to **Grid** layout and vice versa as shown in the images below.

