

CMPS 312 Mobile Application Development

Lab 6 – List Interaction

In this lab, you will practice:

- How to structure your project
- Reading and deserializing Json data from the assets folder
- Searching and sorting Lists/Grids.
- Compose components such as ExposedDropDownMenuBox, Scaffold , TopAppBar, Dropdown Menus and Icons

Stadiums App

Read the stadiums details from stadiums.json file and display them in a LazyVerticalGrid. Each row should be inside a card and have edit and delete buttons.

Implementation Details

1. Create a new project namd **Stadiums**.
2. Create assets folder and add the `stadiums.json` file.
3. Add the necessary dependencies that allow you to deserialize JSON data.
4. Create a serializable data class called **Stadium** inside a package named `model`.
5. Create a class called **StadiumRepository** inside a package named `model.repository`.
6. Implement **getStadiums()** method to return the list of stadiums from `stadiums.json` file.
7. Create a Kotlin file named **StadiumCard** under `ui` package to implement **StadiumCard** composable to display the stadium details as shown in Figure 1. Test this component using a preview composable.
8. Create a Kotlin file named **StadiumList** to implement **StadiumList** composable that uses **StadiumCard** composable. This composable should get the stadiums list and display them in a LazyVerticalGrid as shown in Figure 1. The grid should be responsive and auto-determines the number of columns to use based on available screen size.
9. Test the **StadiumList** composable using a preview composable.
10. As shown in Figure 1, add a Top App Bar with a Search Box to allow users to search stadiums by name or city.

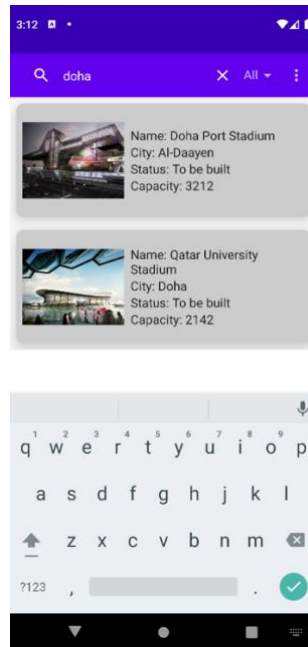


Figure 1. Search stadiums

11. As shown in Figure 2, add a Dropdown list to filter the stadiums based on their status (Available, Under renovation, To be dismantled, or All).

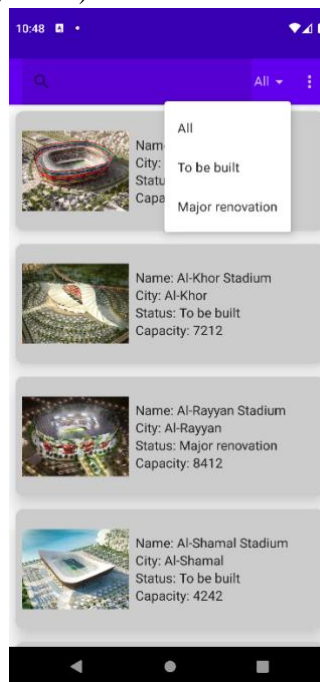


Figure 2. Filter stadiums based on status

12. As shown in Figure 3, add a menu to the Top App Bar to allow the user to sort the stadiums based on Seating capacity, Seating capacity (descending) and alphabetically based on city and stadium name.

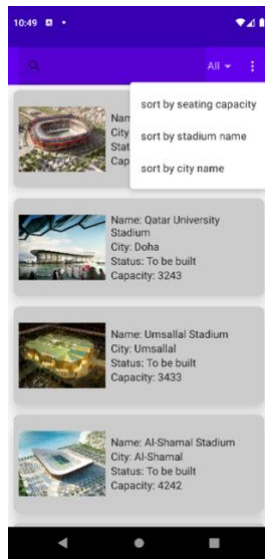


Figure 3 Stadiums sorted by seating capacity

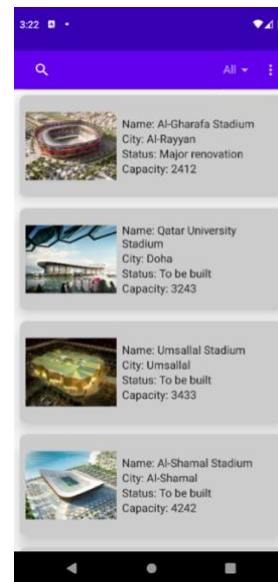


Figure 4 Stadiums sorted by name

13. Add **edit** and **delete** icons to each StadiumCard and Implement the delete functionality.