CMPS 312 Mobile Application Development

LAB 4: Android UI

Objective

This lab will be a demonstration of the Android user interface (UI) elements. You will learn how to design android application UIs, including its layout and resource files. By the end of the lab, you should be comfortable in implementing any kind of UI that depends on Buttons, Text Views, Checkboxes, etc.. Furthermore, you should be able to create an android application that displays Scrolling List such as **ListView** and **RecyclerView**.
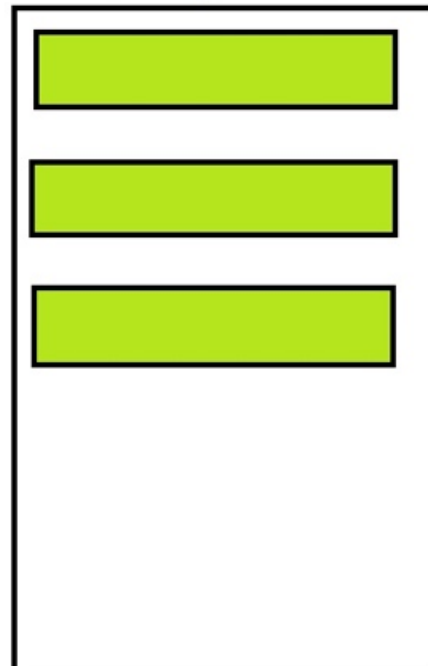
PART A – Layout Design

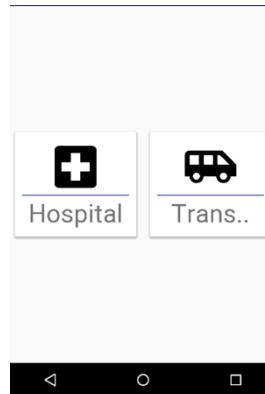1. Linear Layout: Create the following structures using a linear layout.
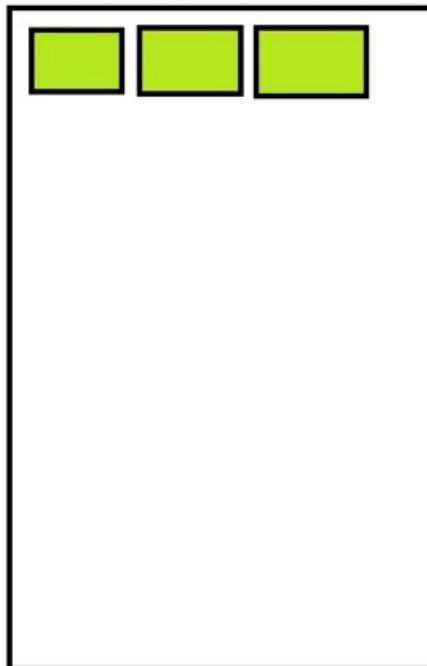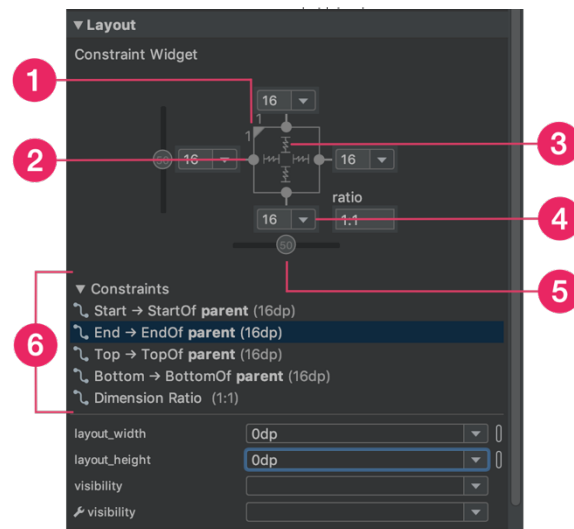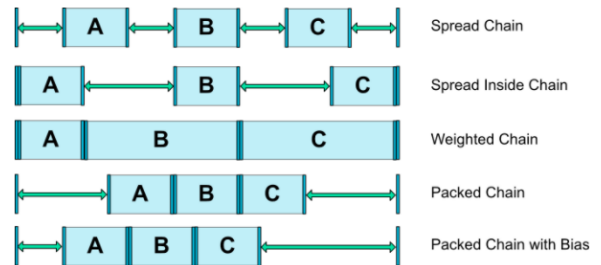
2. Card View: Create the following two-card views using Linear Layout and CarViews

3. Constraint Layout: Create the following design using

When selecting a view, the **Attributes** window includes controls for   size ratio,   deleting constraints,   height/width mode,   margins, and   constraint bias. You can also highlight individual constraints in the Layout Editor by clicking on them in the   constraint list. For more details about Constraint Layout https://developer.android.com/training/constraint-layout

4. Toast
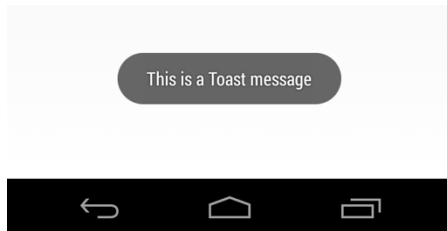
PART B – Android Scrolling Lists
[Recycler Views]

1. Create an application with the name "**Qatar 2022**" and package name: "**cmps312.qatar2022**"
2. Open **build.gradle** and add recycler view dependency and card view dependency

   implementation 'androidx.recyclerview:recyclerview:1.1.0'
   implementation 'androidx.cardview:cardview:1.0.0'

3. Create application icons
4. Open the colors.xml and change the colors to the Qatari colors provided in the assets.
5. Replace **activity_main.xml** layout and **recyclerView** widget
6. Create a Stadium data class that will hold all the stadium attributes

```kotlin
        private val name: String;
        private val hostCity:String;
        private val status:String;
        private val stadiumImage:String;
```

7. Create a method called **populateStadiumsData** that generates the stadium's information and returns a List of stadiums. You can find all the information you need about the stadiums in this link. *http://www.qatar.to/stadiums/World-Cup-2022-stadiums.php*

8. Create the Adapter Class for the recyclerView. Call the adapter **StadiumAdapter**

9. The adapter should allow you to render the stadium **image**, **host city**, **status** and **stadium** as shown below

10. Also, Make sure you are displaying all the information in a card view

11. Now in the MainActivty reference, your recycler view

12. Add the adapter

13. Add the RecyclerView Layout. Use the Linear Layout

14. Add a click listener to your List Items once the item is clicked, open a second activity that displays the following information. You should pass the information to the second activity as a bundle.