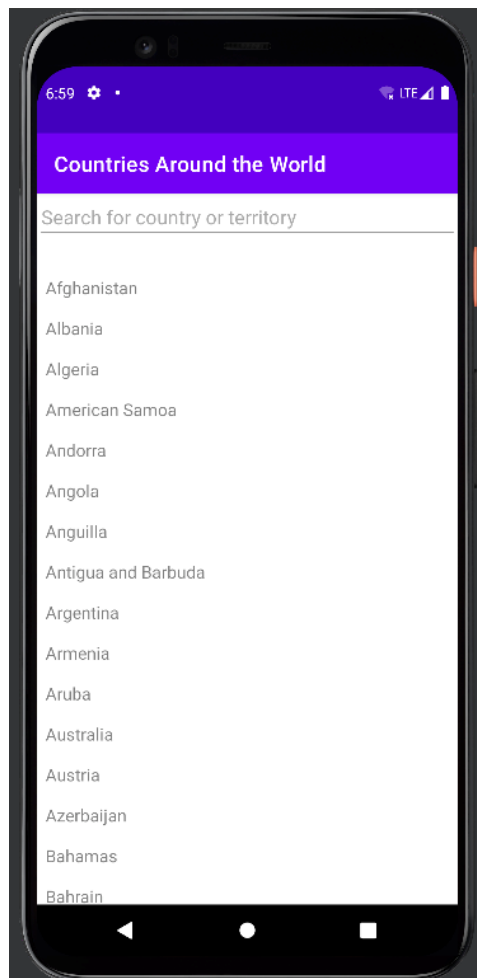# COUNTRIES AROUND THE WORLD LAB

For this lab, you will enable users to filter and search through a list of names of countries and territories around the world. Can you identify where all these places are?

PART 1: OPENING THE PROJECT

Open the provided project template and run the app (clicking on the "Run app" icon ▶ or "Debug app" icon 🐞 located in the menu near the top right hand side of the Android Studio window).

You will see that the app launches on the emulator to a screen that looks like this:
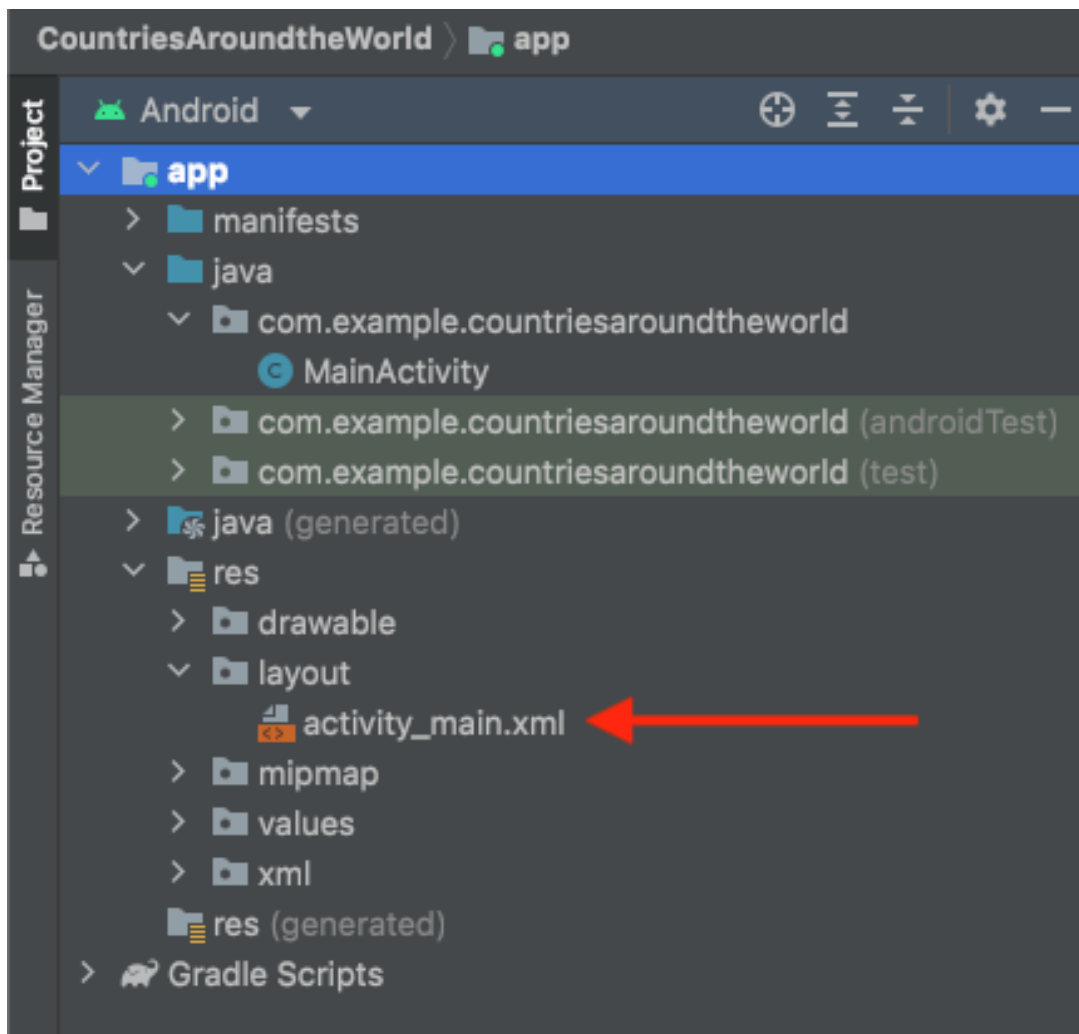
There is a text field hinting that you can use it to search for a country or territory name, but typing in it does not affect anything in the app. Below the text field, there is a long list of countries and territories, but clicking on any of them does not affect anything either.

PART 2: DEFINING THE SEARCH FILTER

To filter through the entire list of countries and territories, the input typed into the text field will be used to identify country and territory names that start with that input.

Let's take a look at the associated layout file "activity_main.xml" to understand what we were seeing on the screen. Click on the "Project" tab on the left side of the Android Studio window to open up the Android project structure, then open the layout file "activity_main.xml" under app/res/layout folder.
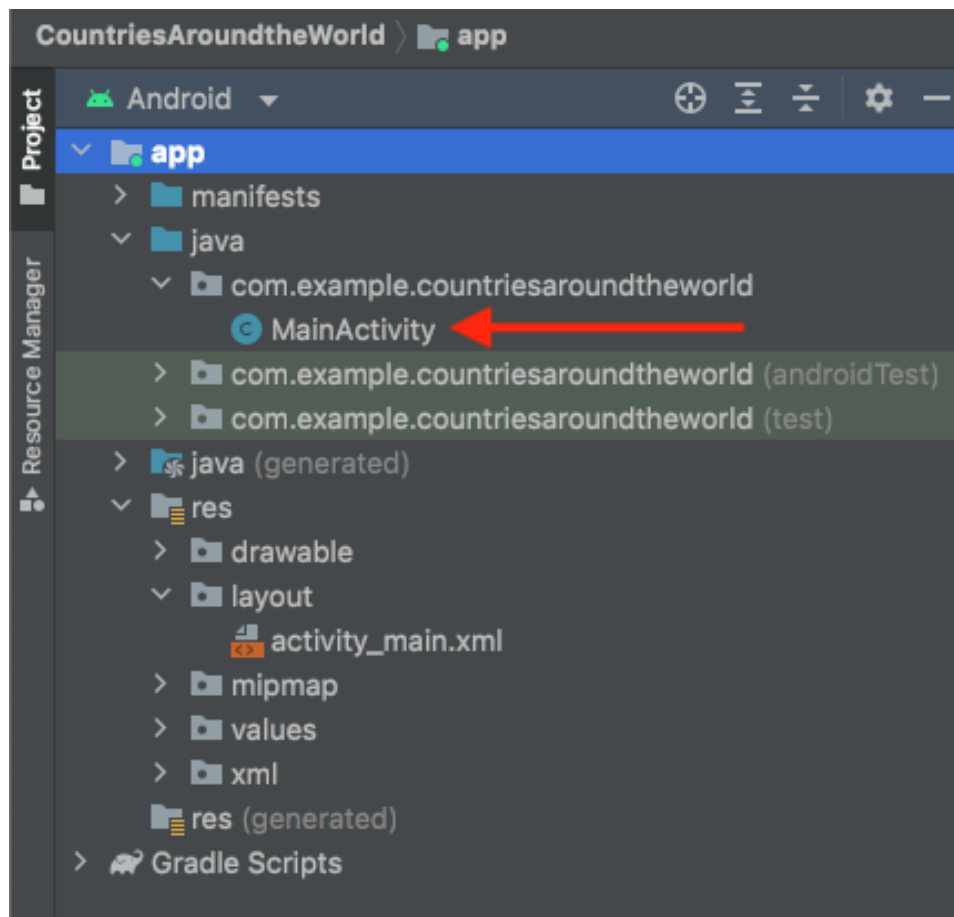
Here, you'll see that the text field is an EditText (ID: "search_text_field") stretching across the screen, and the long list of countries and territories is just a giant TextView (ID: "country_list").

```xml
13    <LinearLayout
14        android:layout_width="match_parent"
15        android:layout_height="match_parent"
16        android:orientation="vertical">
17
18        <EditText
19            android:id="@+id/search_text_field"
20            android:layout_width="match_parent"
21            android:layout_height="wrap_content"
22            android:hint="Search for country or territory"/>
23
24        <TextView
25            android:id="@+id/country_list"
26            android:layout_width="wrap_content"
27            android:layout_height="wrap_content"
28            android:textSize="16sp"
29            android:text="Hello World!"
30            android:layout_marginTop="32dp"
31            android:paddingHorizontal="8dp"/>
32
33    </LinearLayout>
```

Whenever anything is typed into or removed from the EditText "search_text_field", a new filtered list of countries and territories should be displayed by the TextView "country_list".

Click on the "Project" tab on the left side of the Android Studio window to open up the Android project structure, then open the file "MainActivity.java" under app/java/com/example/countriesaroundtheworld folder.

Here in "MainActivity.java", after populating the screen to look like how it was defined in "activity_main.xml", the TextView "country_list" is initially set to display a list of all countries and territories.

To display a filtered list every time anything is typed into or deleted from the text field, capture the user's input and use it to display the names of all countries and territories that start with this input. Breaking this process down:

1. Have the EditText "search_text_field" be able to detect that the user is typing in or removing any text from it
2. When text input or removal is detected:
   a. Extract the currently inputted text from the EditText, typically done with *[editTextObject].getText().toString()*

b. Search for a list of countries and territories that start with that extracted text, the logic of which is conveniently provided to you as a function called *searchForCountriesWithPrefix()*

c. Have the TextView "country_list" display this new list of countries and territories

PART 3: TESTING THE APP

When running the app again, you should be able to search for names of countries and territories that start with the input typed into the text field. The search is case-insensitive, so even if you type in something like "cA", "Canada" should still appear in the filtered list.

With every character you type in, the app should narrow down the list of countries and territories that start with the resulting input. If no countries or territories are found to match this criteria, "No countries found!" will be displayed on the screen, while leaving the text field blank displays the entire list of countries and territories around the world.