Project 4 Task 1 Covid Tracker App

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Description:

My application takes a US state code from the user and uses it to fetch and display the COVID related metrics for that state from the web service deployed to Heroku which in turn gets this data from Covid Act Now API (https://apidocs.covidactnow.org/).

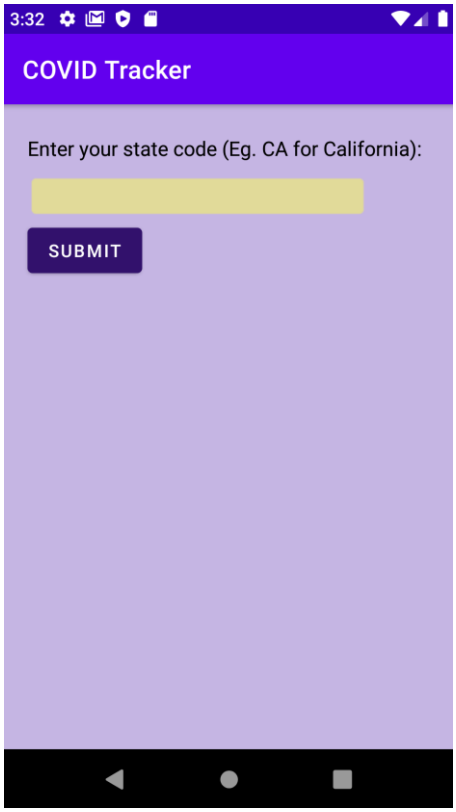
1. Implement a native Android application

   The name of my native Android application project in Android Studio is CovidTrackerApp.

   1.1. Has at least three different kinds of Views in your Layout (TextView, EditText, ImageView etc.).

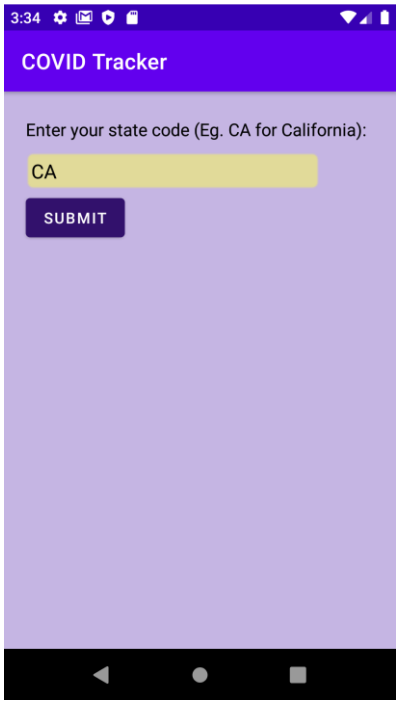
   My application uses TextView, EditText, Button, ScrollView. See context_main.xml for details of how they are incorporated with a LinearLayout.

   Here is a picture of the layout before fetching the metrics for a state code.



1.2. Requires input from the user

Here is a screenshot of the user searching for the state code of California, i.e., CA



1.3. Makes an HTTP request (using an appropriate HTTP method) to your web service

My application does an HTTP GET request in GetAPIData.java. The HTTP Request is:

"https://powerful-refuge-57734.herokuapp.com/getCovidData?state="+searchTerm+"&device="+model

where

- searchTerm is the user's search term
- model is the model name of Android device making the request (To be used later in Task2)

The search method makes this request to the web service deployed on Heroku, which in turn uses the query parameter attached to the url to fetch the data from the API.

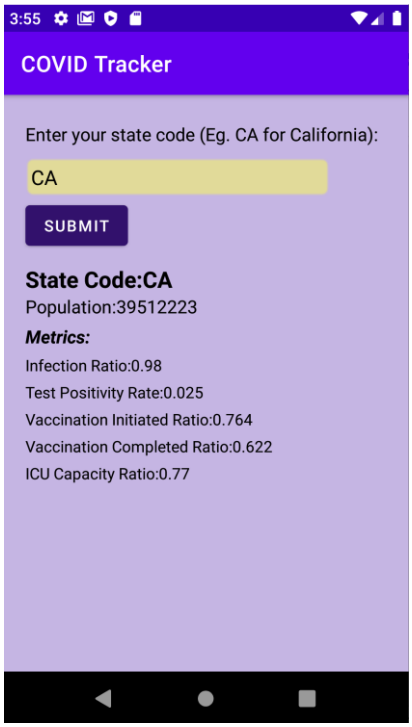
1.4. Receives and parses an XML or JSON formatted reply from your web service

An example of the JSON response is:

{"testPositivityRatio":0.025,"infectionRate":0.98,"state":"CA","vaccinationsCompletedRatio":0.622,"icuCapacityRatio":0.77,"vaccinationsInitiatedRatio":0.764,"population":39512223}

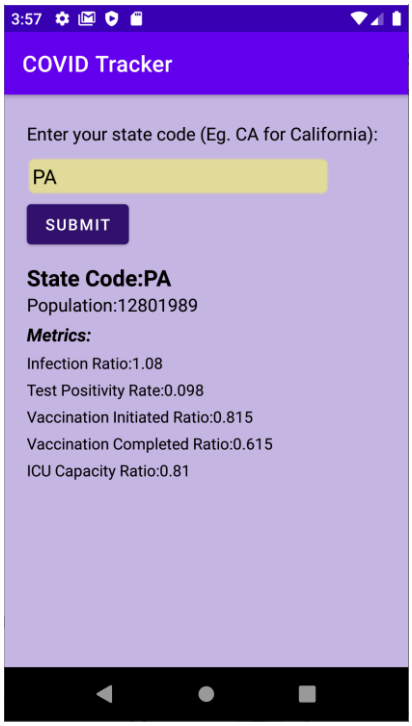
1.5. Displays new information to the user

Here is the screenshot after the search result is obtained.



1.6. Is repeatable (i.e., the user can repeatedly reuse the application without restarting it.)

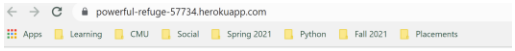
The user can search for the metrics of another state code and hit Submit button. Here is an example for the state code of Pennsylvania, i.e., PA



2. Implement a web service, deployed to Heroku

The URL of my webservice deployed to Heroku is:

https://powerful-refuge-57734.herokuapp.com/



Welcome to COVID Tracker WebService - Task 1

The project directory name is Project4Task1.

2.1. Implement a simple (can be a single path) API.

In my project:

Model: CovidTrackerModel.java
View: index.jsp
Controller: CovidTrackerServlet.java

2.2. Receives an HTTP request from the native Android application

CovidTrackerServlet.java receives the HTTP GET request with the argument “state”. It passes this string on to the model.

2.3. Executes business logic appropriate to your application. This includes fetching XML or JSON information from some 3rd party API and processing the response.

CovidTrackerModel.java makes a HTTP GET Request to API:

API endpoint = "https://api.covidactnow.org/v2/state/"+state+".json?apiKey="+apiKey

Where state is the state code for which the Covid metric is to be fetched

apiKey is my API key for accessing the API data.

It then parses the JSON response and extracts parts it needs to respond to the Android application.

2.4. Replies to the Android application with an XML or JSON formatted response. The schema of the response can be of your own design.

The CovidTrackerServlet.java receives the formatted JSON response from CovidTrackerModel.java and returns the formatted JSON response to the Android application. Example of JSON response:

{"testPositivityRatio":0.025,"infectionRate":0.98,"state":"CA","vaccinationsCompletedRatio":0.622,"icuCapacityRatio":0.77,"vaccinationsInitiatedRatio":0.764,"population":39512223}