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Determining the COVID19 Live Stats using an Android Application

Bhuvanagiri V K Sai Pradeep[1], Bojji Raghavendra Prasad[2], Kadari Sai Suhas[3], Chigurala Sruti[4]

[1,2,3] Student, [4]Assistant Professor , Department of Electronics and Computer Engineering

Sreenidhi Institute of Science and Technology, Hyderabad, Telangana, India

Abstract: As we know that coronavirus has caused a catastrophe around the world. This epidemic has already afflicted over 200 countries, and people have no clue about the end of this tragic situation. Although vaccines and other medications are available, yet everyone must be more conscious about their health and must follow the government instructions in order to stay safe. Moreover, there is a necessity for people to know the live stats about the spread of COVID19.
 Thus, we created an Android application in Android Studio IDE where we the concept of RESTAPI and Retrofit library to display all the COVID19 data across the globe fetched through Worldometer, by which every user will be able to know the information regarding the COVID19 stats and stay updated and safe. The application always require Internet Permission since it fetches from the server which is enabled through AndroidManifest.
Keywords: Android Studio IDE, RESTAPI, Retrofit Library, Worldometer, AndroidManifest

I. INTRODUCTION

The COVID19 epidemic, which originated from China had spread around the world. This epidemic had affected the international trade, employment and travelling. As countries wanted to restrict the spread of COVID19 until the emergence of proper vaccine and medication becomes available to all of their citizens. Although, many precautions like lockdown, work from home etc., were taken up by the leaders of the different countries there were millions of infected people and thousands of deaths been recorded in their respective countries.

Now a days, smartphones are super-advanced and handy devices which could be used for almost every daily tasks instead of laptops.

Smartphones applications are widely available, popular and are easily adopted. And so, we developed an Android app which displays the real-time COVID19 data across the globe, through which every user will know about the situation going around the world regarding the COVID19 and thereby they will be able to stay updated and safe.

II. METHODOLOGY

In this paper, we will develop an Android application that displays COVID19 live stats from across the world to users. As a result, the user may keep track of the number of COVID19 instances in a nation as well as the recent increase in them. The application consists mostly of three activities:

The first activity consists of a card view with a Pie-Chart and a dropdown menu. The Second activity is a card view that displays the metrics and most recent rise of COVID19. The third activity is a scroll view activity that displays all countries and their details for a specific option such as total cases, active cases, recovery, and deaths via a dropdown list.

III. PROPOSED SYSTEM

The proposed system uses the concept of RESTAPI and Retrofitting after the completion of Design of the App UI stage. We have used the Country-wise Data from Worldometer and used RESTAPI to fetch the data. The fetching of data is done using two methods: GET() method and PUT() method. The GET() method is used to access the URL whereas PUT() method is used to fetch the required data as ID.

Retrofit is a safe Java and Android HTTP networking library which had more features and easier syntax because of which we are using it to make API queries. Here Retrofitting is used to replace the default values in the Application with the actual values of Worldometer and keeps updating for every 24 hours.
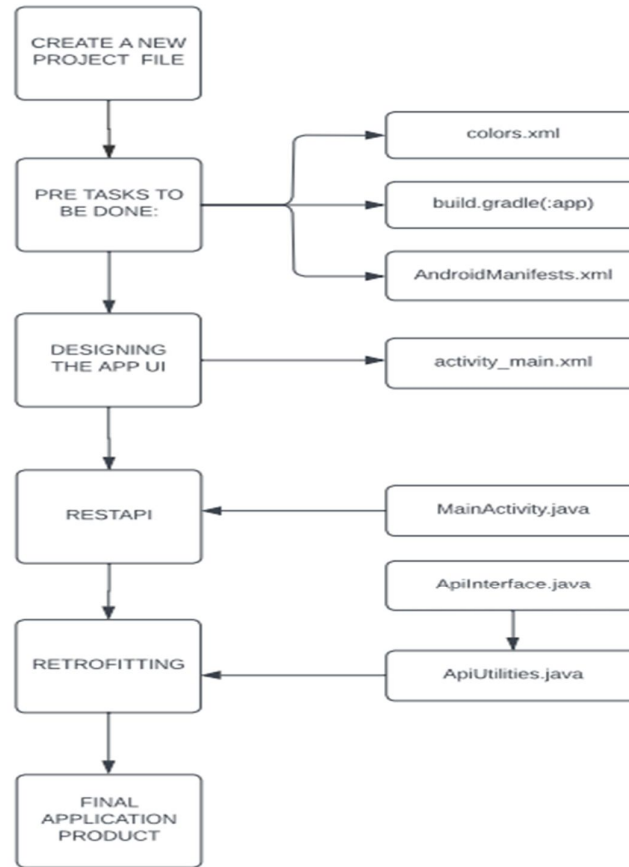
Figure 1: System Architecture

IV. IMPLEMENTATION

A. After the creation of new project file, some important pre tasks have to be done which includes the following:
1) *colors.xml:* This is used to give colors to the UI.
2) *build.gradle(:app):* It is used to define the plug-ins and dependencies required for the project.
3) *AndroidManifests.xml:* It is used to access the permissions of th e device such as Internet Permission.

B. Then the design of the Application UI is done using activity_main.xml which is used to do the Design Layout of the UI.

C. After this we have used the concept of RESTAPI where we have used the file called MainActivity.java which specifies how the app should respond the user.

D. Then we use the concept of Retrofitting by using two files such as ApiInterface.java and ApiUtilities.java
1) *ApiInterface.java:* this contains the base URL and then we use the GET() method to call the getcountrydata() from Model Class.
2) *ApiUtilities.java:* This file uses the data called using GET() method of ApiInterface.java file and retrofit them into the Application's UI

E. Now the final Application is ready to use.

V. RESULTS

Let's take India as an example. As, we select India in spinner, we can see a pie chart and CardView which shows the corresponding count of COVID19 cases in the region under the categories: Active, Recovered, Total and Death. In addition to this, we can also view the data of every country's COVID19 cases briefly at the bottom half of the application.

Figure 2: Final Application interface

VI. CONCLUSION

The application efficiently displays detected COVID19 statistics across the world. With the worrisome growth of COVID19 afflicted patients around the world, this created application may be used to raise social awareness in the public. Our app monitors the metrics namely total no. of cases, total no. of active cases, how many recovered cases in last 24 hours etc.

As a result, this application helps the users to know the COVID19 status of all countries in just one click. Moreover, having real-time data is beneficial for every user, and helps the user to know the total no. of COVID19 instances in their nation, without visiting elsewhere. Additionally, its beneficial since the users will come to know about the COVID19 stats and hence will be updated with information.

VII. ACKNOWLEDGEMENTS

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