'COVID-19 INFO' – Global Statistics Tracking App for Mobile Phones

Khusanboy Kodirov[1], Young Sil Lee[*2]
[1]*Student, Div. of Computer Engineering, Dongseo University, Rep. of KOREA*
[*2]*Professor, Dept. of Computer Engineering, International College, Dongseo University, Rep. of KOREA*
*husanboy.me@gmail.com[1], youngsil.lee0113@gmail.com[*2]*
Corresponding author: Young Sil Lee*

Abstract The year 2019 marked the spread of a new pandemic known as COVID-19 caused by a type of newly discovered infectious coronavirus disease called SARS-CoV-2. As the situation became worse globally, there was a need for health organizations to develop mobile phone apps and websites to track and alert new cases to keep the population safe. Many apps are quickly developing worldwide and it is a great use of help for people. In this paper, we developed the 'COVID-19 INFO' mobile application for the Android platform which lightweight and uses less data connection, so it could be used in a place where there is a slow internet connection.

Keywords: *Covid-19, Health, Mobile App, Android, Statistics*

1. Introduction

Smartphone apps are playing a big role in the response to the Covid-19 pandemic. Our implemented 'COVID-19 INFO' app provides users with up-to-date information on statistics of Covid-19 cases for infected, recovered, deceased, and active people. Data comes from globally trusted sources such as "Johns Hopkins University, the New York Times, Worldometers, and Apple reports" based on API which is explained in the following paragraphs.

There are many public APIs that provide access to data on real-time figures and stats of coronavirus disease in both JSON and CSV formats. For our project, we chose one of these public APIs provided by disease.sh – Open Disease Data. Currently supported languages in user interface include Uzbek, English and Korean.

Statistics displayed in our application are fetched from trusted sources such as Johns Hopkins University, the New York Times, Worldometers, and Apple reports to give a comprehensive view of the data. Android Studio IDE was used to develop the application and we wrote the app in Kotlin language which is a new official language for Android development released by Google.

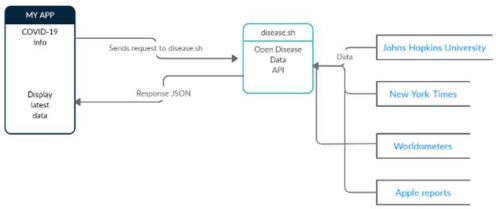

Figure 1. Data flow of example request and response from sources via API server

2. Related Works

Numerous related tracking applications have been created or proposed until now by many IT companies, with or without official government support (see Figure 2 below).

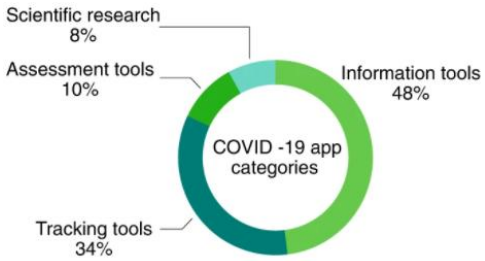

Figure 2. Distribution of COVID-19 app categories (data collected from Google Play store) [2]

For instance, India's COVID-19 tracking app known as Aarogya Setu became the world's fastest-growing application. Within just 13 days of its launch, Aarogya Setu has been downloaded by more than 50 million users and has become the most downloaded app in the world to track Covid-19 [3]. Furthermore, The World Health Organization Academy also developed its official apps with

the latest global health information, as well as guidance and training features [4].

However, due to many concerns about the spread of misleading or harmful apps, Google, Apple and Samsung set limits on which types of organizations could add coronavirus-related apps to their respective App Stores, limiting them to only "official" or otherwise reputable organizations.

3. Implementation of Proposed App

The main strong feature of 'COVID-19 INFO' is its lightweight size and requirement of only small internet data just to fetch statistics, making it a great option for people who live in slow internet connection territories. This feature can be really helpful especially if the app is used in developing countries where internet data charges are expensive.

App has layout files such as Splash Activity, Main Activity, Precautions Activity, Know More Activity, and About Activity. To install the app, the minimum required Android version is 4.1 and up.

Figure 3. Screenshots of Main Activity in English (left) and Precautions Activity (right) while language was set to Korean

As Figure 3 above, on top of the screen, there are statistics for number of total cases of infected, recovered, active and deceased people. Below them, users can see stats for today. As extra information, we included Systems, Know More and Precautions sections.

5. Conclusion

Widely and intensively used digital technologies have been an important feature of international responses to the COVID-19 pandemic. The use of tracking and statistics app has greatly helped people to save themselves from this pandemic. We hope our app will also be useful to slow down the spread of the virus by making more people aware of the current global outbreaks and to act accordingly.

Acknowledgments

This research was supported by Basic Science Research Program through the National Research Foundation of Korea (NRF) funded by the Ministry of Education (grant number:2018R1C1B5043135).

References

[1] Y. M. Bar-On, A. Flamholz, R.Phillips & R. Milo. (2020 Apr 2). SARS-CoV-2 (COVID-19) by the numbers, *eLife, 9,* e57309.

[2] T. Sharma & M. Bashir. (26 May 2020). *Use of apps in the COVID-19 response and the loss of privacy protection.* Nature Medicine volume 26, pages1165–1167(2020)

[3] Aditya Chaturvedi. (2020). *Top 10 popular smartphone apps to track Covid-19.* Geospatial World. https://www.geospatialworld.net/blogs/popular-apps-covid-19/

[4] WHO. (2020). The WHO Academy's COVID-19 mobile learning app. https://www.who.int/about/who-academy/the-who-academy-s-covid-19-mobile-learning-app