

Aarogya Setu: India's COVID-19 Surveillance App

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Abstract: *The technology is booming everywhere in the world now a day. At the same time year 2020 has come up with a pandemic disease called "COVID-19" which is showing its disastrous effects all over the world. In such situation a developing country like India is struggling at its best to beat on it by applying each and every strategy. In this fight we cannot move alone without the support of technology and that is well known by the Indian government. Therefore they have come up with an application known as "Aarogya Setu". This application can work as an artificial intelligence surveillance system which can deduct the person infected with COVID-19 on the basis of users' mobile location & scanning through a database of known cases across the India.*

Keywords: Aarogya Setu, Application, COVID-19, Indian Government

1. Introduction

The Ministry of Electronics and IT, India officially launched the mobile app on 3rd April 2020 called "Aarogya Setu" which will help people in identifying the risk of getting affected by the Corona Virus. Aarogya Setu is a Sanskrit word which stands for "A bridge of Health".

After launching the MyGov Corona Helpdesk recently to fight misinformation on Corona virus being spread on WhatsApp, the Government of India has now unveiled the Aarogya Setu app.

This mobile application will track the spread of COVID-19 in the country. The stated purpose by the Indian Government of this app is to spread the awareness and to connect essential health services to the people of India. This app will boost up the initiatives of the Department of Health to find out the COVID-19 patient throughout the country. App users can also alert authorities if they come in close contact with a person infected with the virus.

This app has been launched in public-private partnership i.e PPP. With the help of government, National Informatics Centre (NIC) has contributed in formation of this application. The National Informatics Centre comes under the Ministry of Electronics and Information Technology

Once you install this app in your smart phone, the app detects other nearby devices with "Aarogya Setu" installed in it. The Artificial Intelligence system behind it uses users' mobile phone location and Bluetooth data to assess whether they've been within six feet of a person infected with COVID-19. The app can then calculate the risk of infection based on sophisticated parameters if any of these contacts is tested positive.

"If you come into contact with a COVID-19 positive patient you will get a notification through this app," says joint secretary of the health ministry, Lav Aggarwal.

By detecting this, the app will also help the Indian Government to take necessary timely steps for assessing the risk of spreading COVID-19 infection, and ensuring isolation wherever & to whomsoever required.

This app is an updated version of an earlier app called **Corona Kavach** which is now discontinued which was previously released by the Government of India.

Why Indian Government Launch it?



Figure 1: Aarogya Setu App Logo

The country is already under lockdown and emergency help line numbers have been activated. Therefore to make citizens aware of the current scenario and to track the spread of novel corona virus it becomes necessary to build such applications which are easy to operate and to handle by everyone.

The developers of Aarogya Setu app said that it will work as a supplement to the Government of India, particularly the Department of Health, in proactively finding out and informing the users of the app regarding risks of Corona virus. The app will also inform the users about the potential risk of the infection. Users can take a self-assessment test and contact the helpline numbers provided in the app should they suspect that they are infected by the Corona virus.

How to install it?

The app is compatible with iPhone, iPad and iPod touch and requires operating system versions iOS 10.3 or higher. For an Android version mobile it requires versions 6.0 and higher. The app is available for download on Google Playstore and Apple App Store.

Aarogya Setu is currently available in 11 languages (English, Tamil, Hindi, Telugu, Kannada, Malayalam, Punjabi,

Bengali, Oriya, Gujarati, and Marathi) and it is expected to be available in more Indian languages very soon.

Here's how you can download the app:

Step 1: Go to Play Store and search Aarogya Setu

Step 2: Click on Install

Step 3: Once the app gets installed, select the language

Step 4: Switch on Bluetooth and location

Step 5: Set "location sharing" to always. Location data is sent to the government.

Once you download the app, the user has to enter their mobile number, verified with a one-time password (OTP). After this, the user enters his/her name, age, gender, profession, travel history, and known contact with a corona virus patient.

After this, the app takes the user to a dashboard that has basic information about COVID-19. It provides the tips on hygiene & social distancing protocols. It also provides the details on how one could donate to the prime minister's corona virus-specific relief fund, "PM-Cares".

It is very much necessary for Aarogya Setu app to switch on Bluetooth (you are recommended to keep it on at all times) and Location. Then, set 'location sharing' to 'Always' (you can change this anytime later).

It has a tool for self-testing too. The user is asked number of questions and he/she has to answer it. In case some of the answers suggest Covid symptoms, the information will be sent to a government server. The data will then help the government take timely steps and initiate the isolation procedure, if necessary.

How it works?

After you have installed Aarogya Setu in your mobile, it will detect other nearby smart phones that also have the same app installed in it. Aarogya Setu is designed to keep a user informed in case she/he has crossed paths with someone who has tested positive. It can then figure out the risk of infection based on sophisticated parameters.

Using Bluetooth technology, the Aarogya Setu app tries to determine the risk if one has been near a COVID-19 infected person (i.e. a positive person) within six feet of distance by scanning through a database of known cases across India, and using location information it determines the location one is in belongs to the infected areas based on the data available. "If you come into contact with a COVID-19 positive patient you will get a notification through this app," You will be alerted if someone you came in close proximity with, unknowingly, tests positive. The app alerts are accompanied by instructions on how to self-isolate and what to do in case you develop symptoms of COVID-19. Your data is shared only with the government. The app doesn't allow your name and number to be publicly disclosed.

If there is any anonymous data of person who has downloaded the app is sent to a server and checked against a database of known cases and his/her movements.

If a person with the app tests positive for corona virus or has been in close contact with the negative person who has the

same app, then the data get shared with the government. All such calculations are done by using Bluetooth, algorithms & artificial intelligence in a smart phone.

Similar Apps

As said earlier, like wise central government, the state government is also using some of the apps created by them which are similar to the Aarogya Setu app. These different apps are listed as follows state wise.

1. "COVA Punjab" by Government of Punjab.
2. "Mahakavach" ('Private Kit') by the Maharashtra State Innovation Society.
3. "Test Yourself Goa" by Goa's Ministry Of Health In Collaboration with Innovacc.
4. "Test Yourself Puducherry"
5. "COVID-19 Quarantine Monitor", by Tamilnadu State Government collaborated with Pixxon Ai Solutions
6. "Quarantine Watch" by Revenue Dept, Government of Karnataka Health & Fitness
7. "Corona Watch" by Karnataka Government.
8. "Gok Direct" by Kerala Government.
9. "COVID19 Feedback" by Central Government of India.

District administration has been asking all educational institutions, departments etc to push downloading of the app. Furthermore, the Tata Consultancy Services is also working on testing and some of the other aspects while Tech Mahindra and the Mahindra group is working with the committee on the next version of this application and leveraging next generation technologies like AI, machine learning, data science to expand the reach of the app on all types of phones apart from only smart phones.

Aarogya Setu is based on Singapore's successful community tracing app "TraceTogether". Other countries are also developing similar kinds of apps to limit the spread of corona virus.

2. Conclusion

In the developing and most densely populated country like India, it was very crucial to track the COVID-19 patients as the infection started to take place. We must thank our technical experts and the government as they have taken such a required initiative to connect every single citizen with "Aarogya Setu App". As every single person is carrying mobile now a day so it becomes effortless to track patients as well as to spread awareness of COVID-19 with the help of an application in India.

"Aarogya Setu" reached 50 million downloads just 13 days, making it the world's fastest downloaded app, said NITI Aayog CEO, Amitabh Kant. It is one of the most popular government apps in India.

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