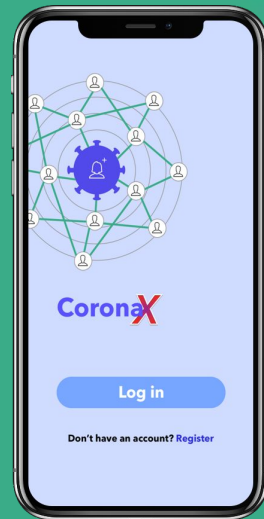# CoronaX

By Rebecca Zhu, Sahil Mahendrakar, and Srinath Rangan

Submission for the
Combating COVID-19 Challenge

" An innovative mobile application for effective contact tracing. "

CoronaX

Log in

Don't have an account? Register

PROBLEM:

- ❖ Important to prevent **further transmission**

- ❖ People must be informed **fast** if they have been close to someone **infected** with Covid-19

- ❖ Current methods of contact tracing are **time consuming**. Contact tracing is a task that should be given to **technology** to solve.

SOLUTION:

A **lightweight**, **crowdsourcing** **contact tracing** mobile application:

CoronaX

Using encrypted location tracking and anonymous user reporting to prevent the spread of Covid-19

HOW IT WORKS: BUILDING THE APP
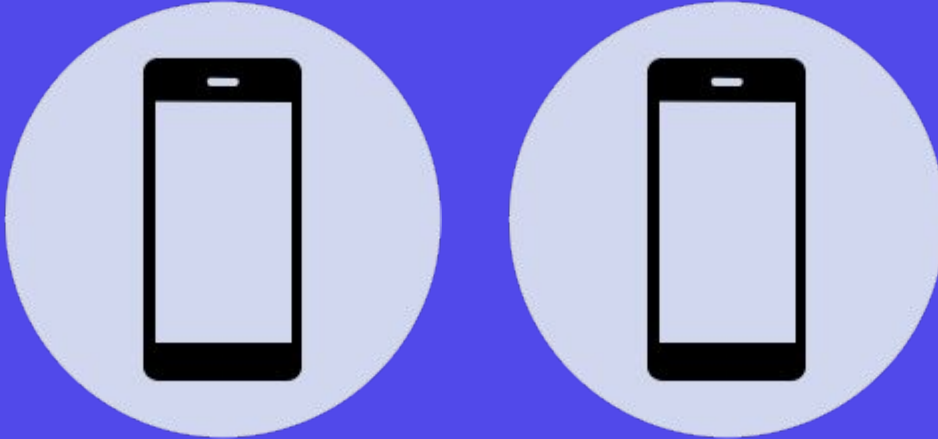

Flutter   Google Maps API   Sketch   Firebase

❖ Built using **Flutter SDK** to deploy on **iOS** and **Android** devices

❖ Uses **Location API** to track users' location and Google Maps API to provide an accessible **user interface**

❖ Includes a **Firebase backend** to **anonymously** store users' location history and **encrypt** account details
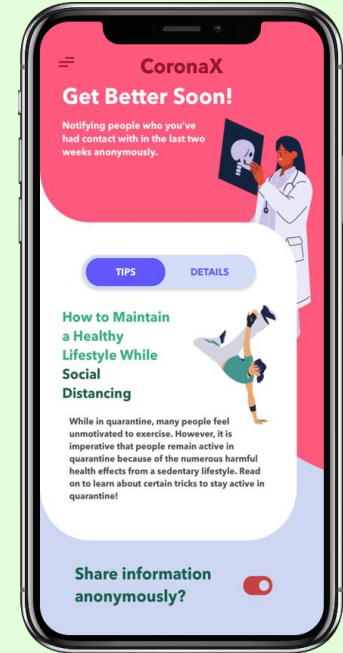
HOW IT WORKS: STORING INFORMATION

1

Each device that has **CoronaX** installed gets its location stored **anonymously** and **encrypted** in our backend **Firebase** database.
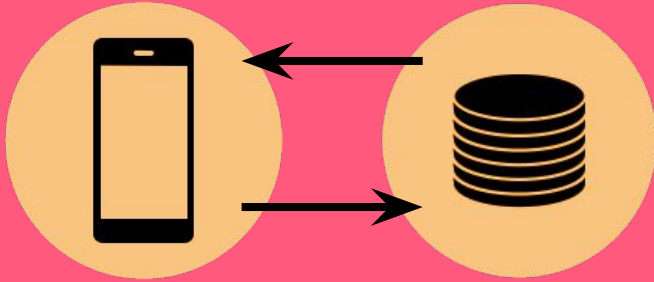
HOW IT WORKS: SELF REPORTING

2

When a user **self reports** that he or she has Covid-19, the location from the past **two weeks** is broadcasted in an anonymous and encrypted form.
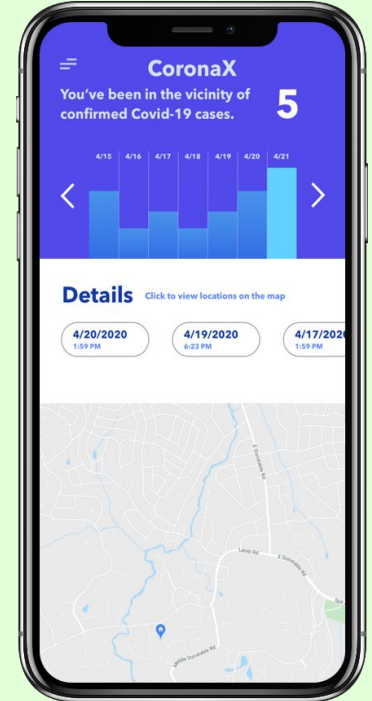
HOW IT WORKS: CHECK USER SAFETY

3

After the broadcast, each app uses its **location history** to check if their user has **crossed paths** with an **infected** individual over the past **two weeks.**
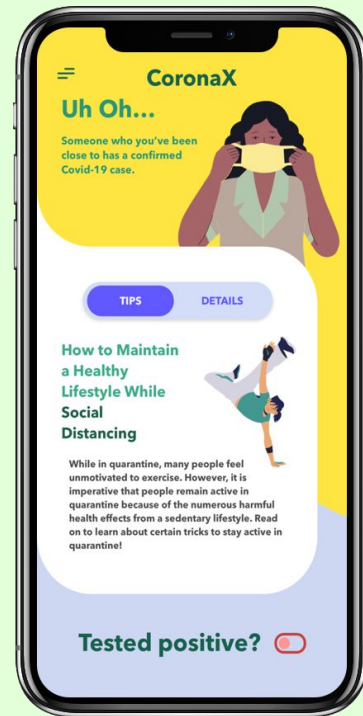
HOW IT WORKS: NOTIFY THE USER

4

The app notifies the user that they have potentially been **exposed** to Covid-19, and recommends they take necessary precautions to **prevent further spreading**

APPLICATIONS: THE FIGHT AGAINST COVID-19

❖ Users can alert people whom they were in **close proximity** after being diagnosed with COVID-19

❖ People do not give their identity once infected to other users

❖ Users can be notified of **hotspot locations** that can be identified

❖ More efficient use of **testing kits** because people know for sure if they were in the vicinity of a COVID-19 patient

❖ The app has a very simple, but **effective user interface** for people of all ages

❖ Each account provides **personal statistics** and **advice** on further actions given the user's current condition

APPLICATIONS: THE FUTURE

❖ This technology is not just applicable to the Coronavirus; any **widespread transmittable** future disease can be tracked

❖ As more people use the app, **accurate statistics** can be collected that can provide detailed reports of how the virus travels

SUSTAINABILITY

❖ **Scalability:** The app is designed to accomodate a **large user base** thanks to the flexible Firebase backend

❖ **Social:** CoronaX is a **crowdsourcing** app so its efficacy completely relies on its mass adoption by users. With a large enough user base, the app should be able to seriously prevent further spreading of the virus by quickly and accurately identifying individuals at risk for the infection before symptoms occur

COMPARISON TO BLUETOOTH:

★ Using **location** rather than bluetooth allows us to develop **infographics** relating to "hot-spots" where numerous Covid-19 contacts occur

★ We still maintain **user privacy** through location based contact tracing by sending information **anonymously** and **encrypted**

REFERENCES:

1. https://www.pandasecurity.com/mediacenter/mobile-news/contact-tracing-apps/

2. https://www.who.int/news-room/q-a-detail/contact-tracing

3. https://www.cdc.gov/coronavirus/2019-ncov/php/principles-contact-tracing.html

4. https://economictimes.indiatimes.com/magazines/panache/history-repeats-itself-world-failed-to-learn-lessons-for-coronavirus-fight-from-sars-and-mers-outbreak/articleshow/74473723.cms?from=mdr

5. http://www.icons101.com/icon/id_71456/setid_2261/Hex_Icons_Pack_v20_by_ashleyt123/bluetooth