Section 1- Mobile App Development Glossary

Android Studio: - Android Studio is a desktop application that lets us compose and edit these files. When we're done, Android Studio will translate them from the language Java into the internal language understood by the Android device (usually a phone or tablet), and will load the finished app onto the device. Android Studio runs on Macintosh, PC, and Linux.

API: -API stands for Application Programming Interface. Together with backend databases, APIs provide a set of fixed rules and specifications that define interactions between software components. An API can be created for libraries, operating systems, and applications. A good API makes it easier and faster to develop an app by providing all of the “building blocks” for it.

Developer: -A person, or group, that designs and/or builds and/or documents and/or configures the hardware and/or software of computerized systems.

APK: - (Android application Package) An application file ready for installation in an Android device. The compressed APK file, which is a ZIP archive in the JAR format, is distributed to Android users for installation in their smartphones and tablets.

STATE: -The state is an instance of React Component Class can be defined as an object of a set of observable properties that control the behaviour of the component.

WEB SCRAPING: -Web scraping is an automatic method to obtain large amounts of data from websites. Most of this data is unstructured data in an HTML format which is then converted into structured data in a spreadsheet or a database so that it can be used in various applications.

User Interface: -The user interface of an app is what we see on the screen of the Android device. It consists of one or more rectangular areas called Views, which display information. Some of the Views—the buttons, for example—also respond to a touch.

Frontend: -Front end developers build with the user in mind. Front end development is a style of computer programming that focuses on the coding and creation of elements and features of a website that will be seen by the user. It’s about making sure the visual aspects of a website are functional

Backend: - Back-end development focuses on the side of the website users can’t see. It’s what makes a site interactive. The back end can also be referred to as the “server side” of a website.

Event-Driven Programming: -A computer is a machine that follows a list of instructions called a program. An Android device is a computer and an app is a program. If the app is an event-driven program, it is divided into sections and the device can jump from section to section when a stimulus arrives from the outside world. When a finger touches a button, for example, we can jump to the section of the app that carries out what the button is supposed to do.

Firebase: - Google Firebase is a Google-backed application development software that enables developers to develop iOS, Android and Web apps. Firebase provides tools for tracking analytics, reporting and fixing app crashes, creating marketing and product experiment.

Components: -Components are independent and reusable bits of code. They serve the same purpose as JavaScript functions, but work in isolation and return HTML. Components come in two types, Class components and Function components

Layout: - The layout of an app is the design or arrangement of what the user sees on the screen. This user interface is composed of rectangular areas called Views. Big Views can contain smaller Views, and there is always a biggest View that contains all the others.

Yarn: - Yarn is a new package manager that replaces the existing workflow for the npm client or other package managers while remaining compatible with the npm registry. It has the same feature set as existing workflows while operating faster, more securely, and more reliably.

Npm: -npm is a package manager for the JavaScript programming language maintained by npm, Inc. npm is the default package manager for the JavaScript runtime environment Node. js.

NoSQL: - NoSQL databases use a variety of data models for accessing and managing data. These types of databases are optimized specifically for applications that require large data volume, low latency, and flexible data models, which are achieved by relaxing some of the data consistency restrictions of other databases.

Expo-cli: -Expo CLI is a command line app that is the main interface between a developer and Expo tools. You'll use it for a variety of tasks, such as: Creating new projects. Developing your app: running the project server, viewing logs, opening your app in a simulator.

Git: -Git is software for tracking changes in any set of files, usually used for coordinating work among programmers collaboratively developing source code during software development. Its goals include speed, data integrity, and support for distributed, non-linear workflows.

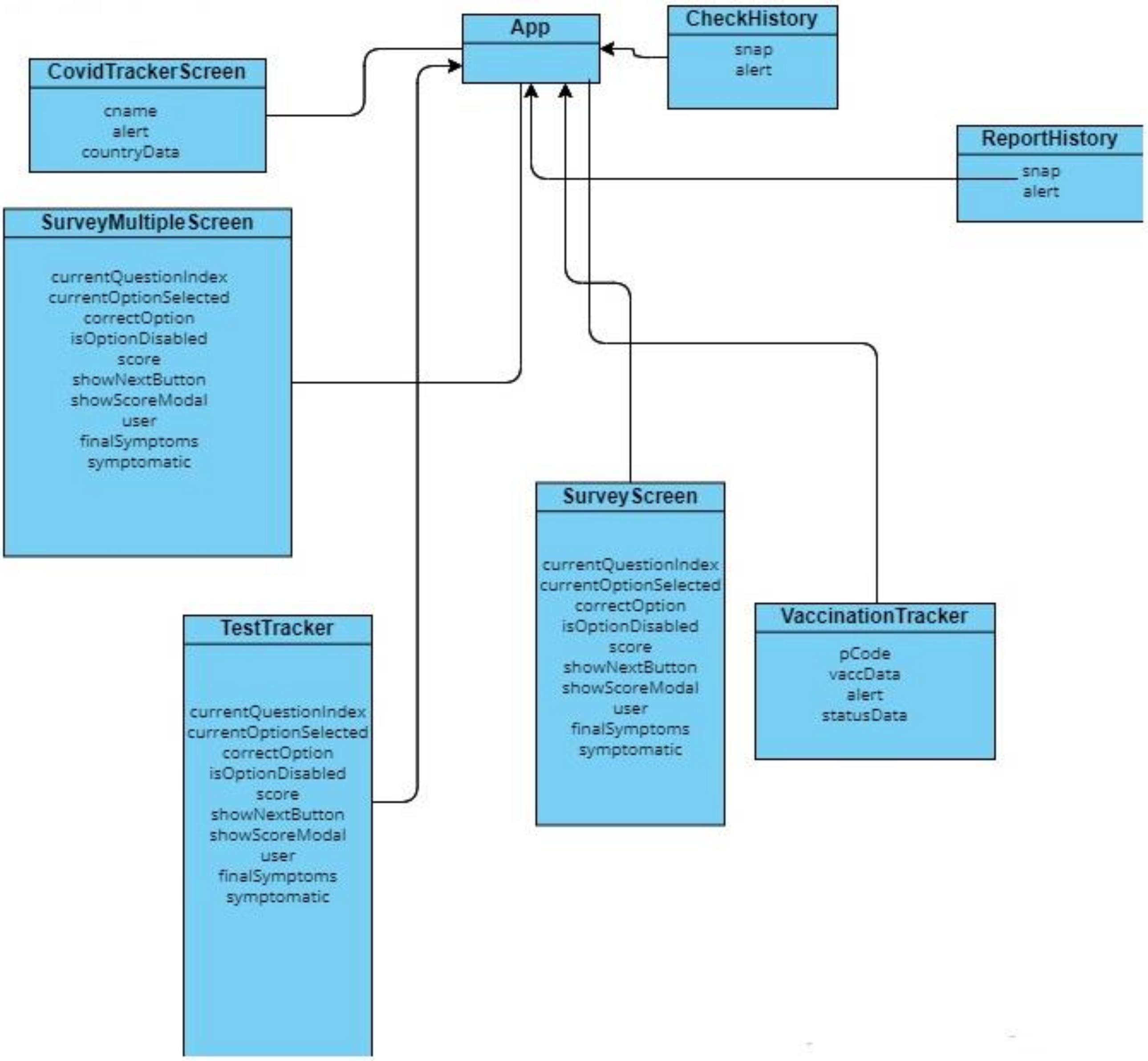
Rapid Api:- RapidAPI is the world's largest API Marketplace — used by over one million developers to discover and connect to thousands of APIs. Using RapidAPI, developers can search and test the APIs, subscribe, and connect to the APIs — all with a single account, single API key and single SDK.

React-native: -React Native is an open-source UI software framework created by Meta Platforms, Inc. It is used to develop applications for Android, Android TV, iOS, macOS, tvOS, Web, Windows and UWP by enabling developers to use the React framework along with native platform capabilities.

Build: **-** The Android build system compiles app resources and source code, and packages them into APKs or Android App Bundles that you can test, deploy, sign, and distribute.

Section 2 –

Class Diagram for Covid Companion Project



Section 3 –

3 a.)

Success Scenarios of Covid Companion Project

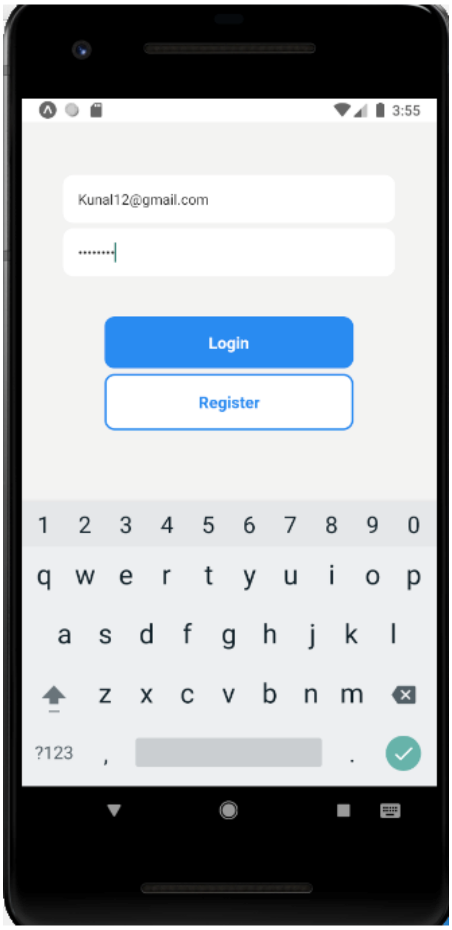
List of Features in Covid Companion Project

1. Authentication System
2. Covid Tracker
3. Survey Form for checking Whether patient is positive or negative
4. Test Reports Tracker
5. Vaccination Tracker
6. Report History
7. Check History
8. Quarantine Info
9. Vaccination Info

Success Scenario I: - Authentication System

For Implementing authentication system first, the user will enter the Gmail id and password then if the user is new it will have to register first in order to use the app when clicking on registration button the LoginScreen.js file contains the firebase code to create a session for the current user and the details of the login in user is stored in firebase in order to save the patients details whether it is positive or negative. The firebase AUTH service was used to verify the authenticity of the user. If the user is already registered then by clicking the login button the details like email id and password are fetched a then verified from the firebase store the handleLogin function is called in **LoginScreen.js** which does the Auth part and then the user session is created after then user is able to use the other features of the app. Firebase is NoSQL it stores data in collections from which when the user login it verifies from the database directly. The firebase database For User Interface of authentication system requires API_KEY and other database details which are fetched from **firebase.js**.

user Credentials are stored encrypted in firebase and token is created which ensures the authenticity of the auth system which verifies and allows users to login.



Kunal12@gmail.com

••••••••

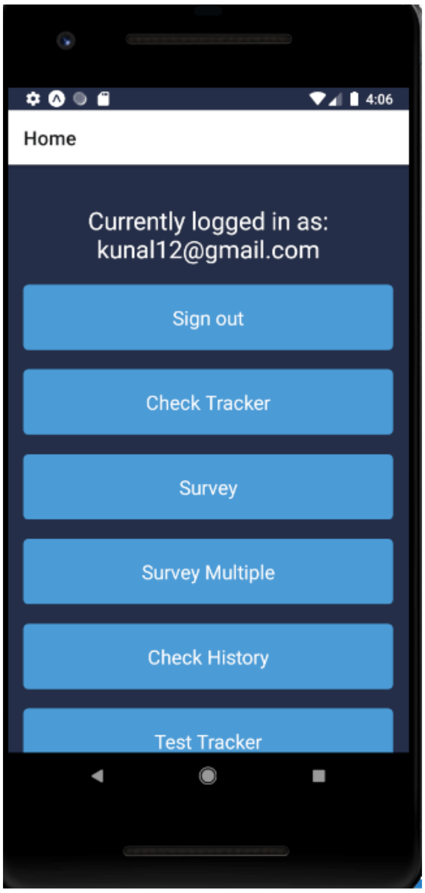
Success Scenario II: - Covid Tracker

For Implementing Covid Tracker we have used Rapid Api to get the information of patient’s like Covid positive, Deaths, Critical patient’s, recovered Patients. In covidTrackerScreen.js file we have implemented various API’s to get the information of covid patient’s from various countries.

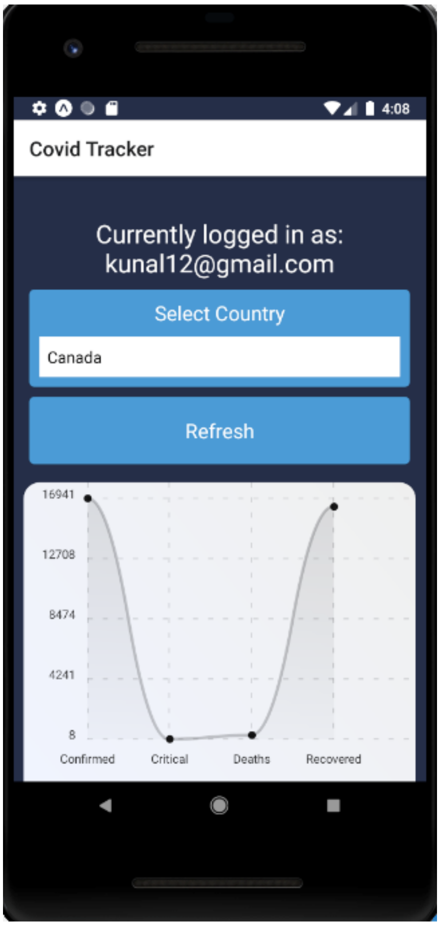
First user selects the country name to see the details of that country that user clicks the fetch button then the request goes to rapid api in **covidTrackerScreen.js** from which json object in response is received from that data is extracted and displayed on the application LineChart is used to details the details in the form of chart and picker is used to get the functionality of picking the country in covid tracker service. In GET request we pass the parameters like host_key and api-key from which the rapid api authenticates the developer and provides the response in json format.

The details of the past history of covid cases are also displayed after the chart of the selected country. Axios service is used in order to get the information from the rapid api

Native bootstrap styles are used in order to enhance the user interface of the application.



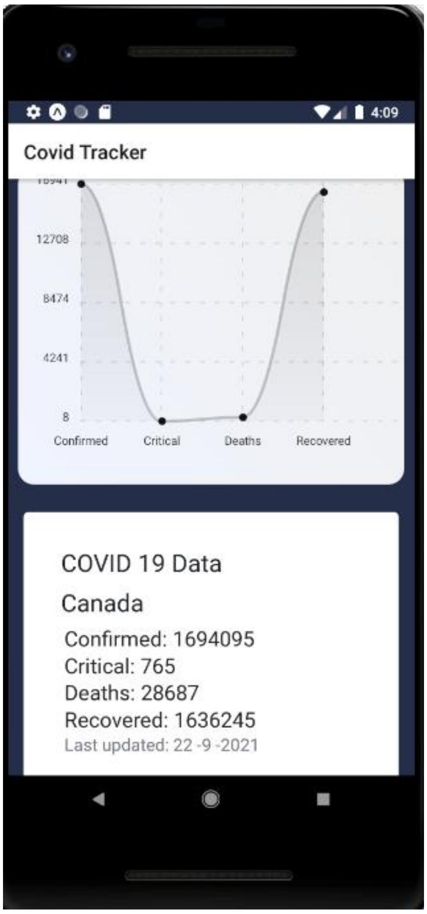
Currently logged in as:
kunal12@gmail.com



Covid Tracker

Currently logged in as:
kunal12@gmail.com

Canada



Covid Tracker

COVID 19 Data

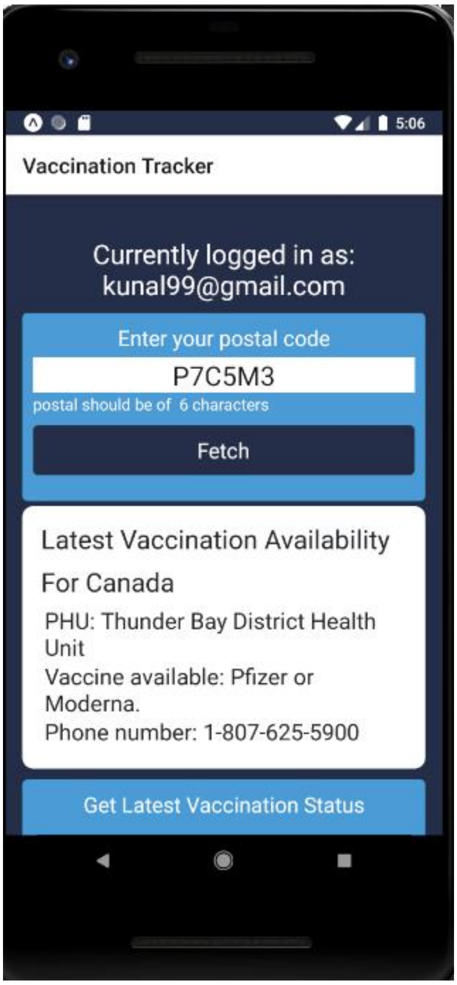
Canada

Confirmed: 1694095
Critical: 765
Deaths: 28687
Recovered: 1636245
Last updated: 22 -9 -2021

Success Scenario III: - Vaccination Tracker

For Implementing Vaccination Tracker we require data of centers and their vaccine availability details so which was not available through api so we created a bot web scraping feature which extract particular tag information from authenticated websites the **vaccinationTracker.js** file includes the code of the bot which open the chromium in background and enter the required details and the information from tags is obtained and it is displayed on the application like center information, vaccine availability and phone number of the vaccination center. Reusable react native components are used in order to display the vaccination status.

The response received from the bot is extracted from the json file and provided to the react native components in form of parameters Bootstrap styles are used to enhance the user interface of the application.



Vaccination Tracker

Currently logged in as:
kunal99@gmail.com

Enter your postal code

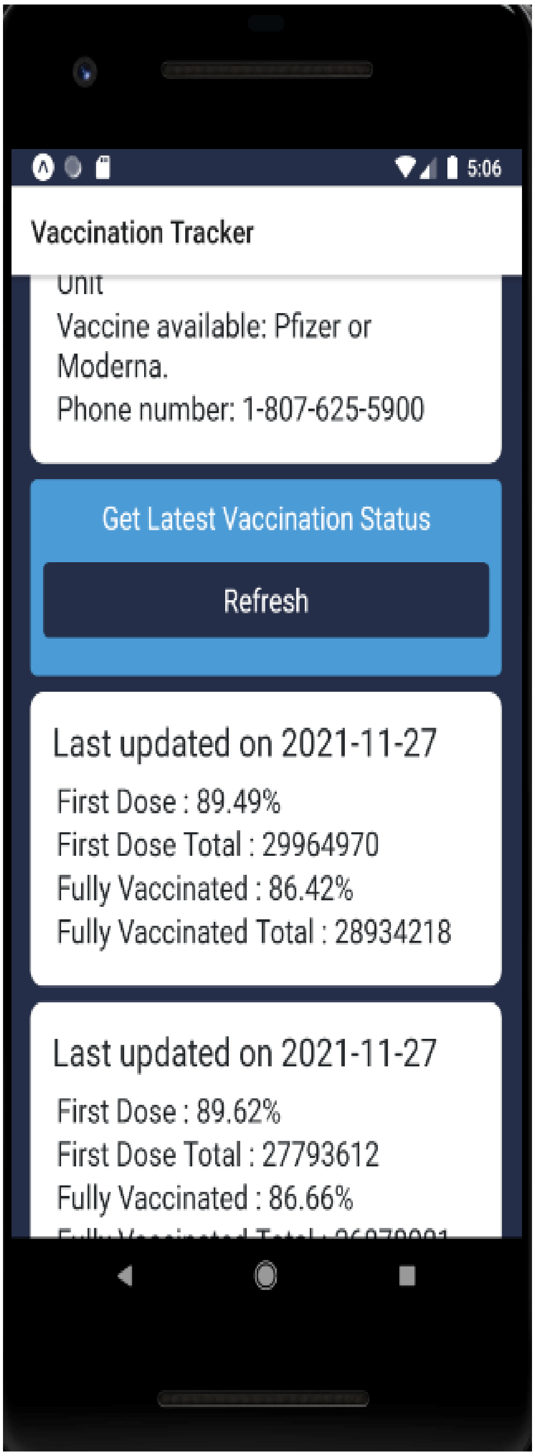
P7C5M3

postal should be of 6 characters

Latest Vaccination Availability

For Canada

PHU: Thunder Bay District Health Unit
Vaccine available: Pfizer or Moderna.
Phone number: 1-807-625-5900



Vaccination Tracker

Unit
Vaccine available: Pfizer or Moderna.
Phone number: 1-807-625-5900

Last updated on 2021-11-27

First Dose : 89.49%
First Dose Total : 29964970
Fully Vaccinated : 86.42%
Fully Vaccinated Total : 28934218

Last updated on 2021-11-27

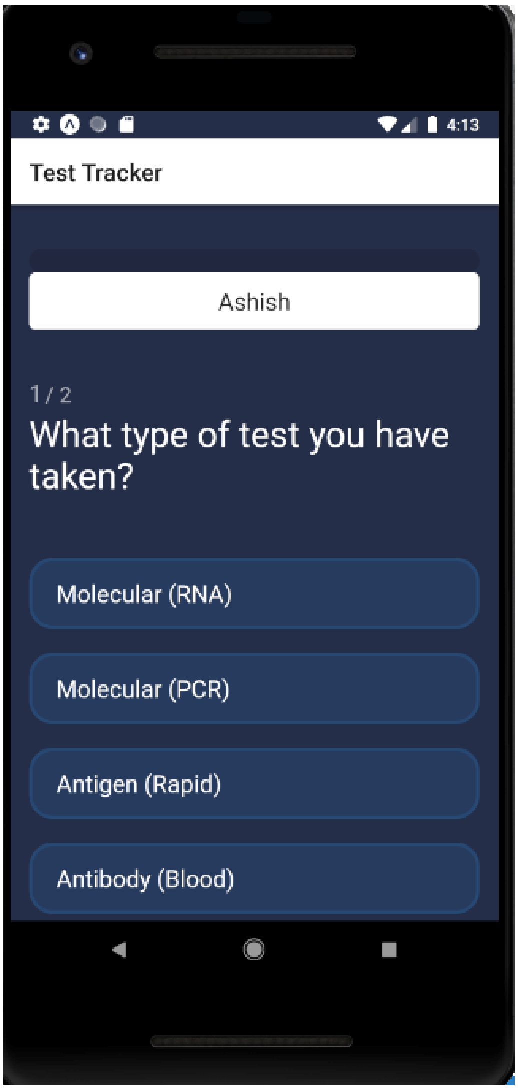
First Dose : 89.62%
First Dose Total : 27793612
Fully Vaccinated : 86.66%

Success Scenario IV: - Test Report Tracker

For implementing Test Report Tracker, we require the input from the user of the following details like test type and test results.

So, survey form is created and the data of the questions and answer is stored in **TestData.js** from which the questions and answers are fetched and logic to provide the result whether patient is safe or not code is written in TestTracker.js The input is recorded and post api request is made in **TestTracker.js** to firebase to store the user details of Test reports to authenticate to the firebase database object of firebase is created from which data is provided to firebase and the configuration credential for connecting to the database is stored in object like api_key etc is stores in **firebase.js**

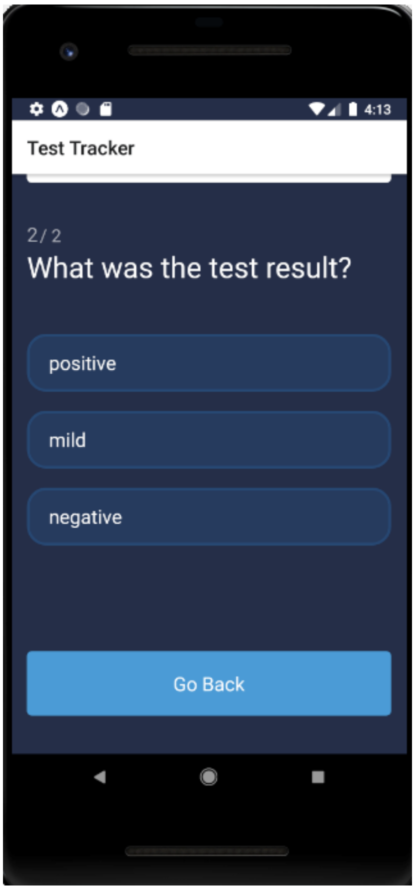
Further because the reports are stored in firebase they can be fetched and showed to the user we get json response and data is extracted and state variable of react native store the info.



Ashish

1 / 2

What type of test you have taken?



4:13

Test Tracker

2 / 2

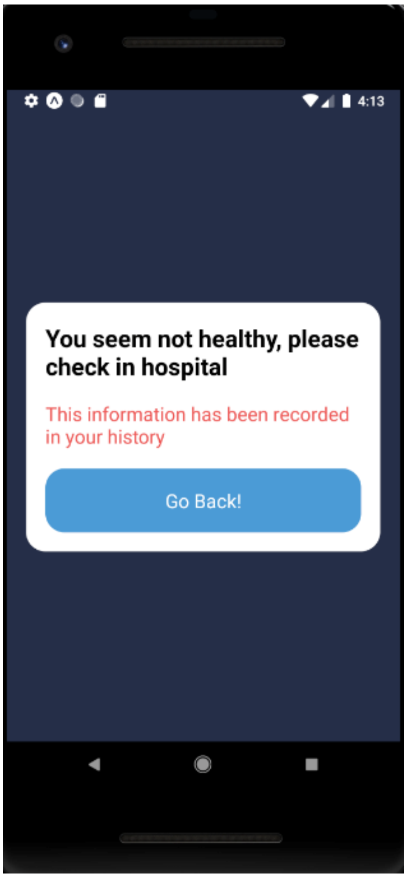
What was the test result?

positive

mild

negative

Go Back



4:13

You seem not healthy, please check in hospital

This information has been recorded in your history

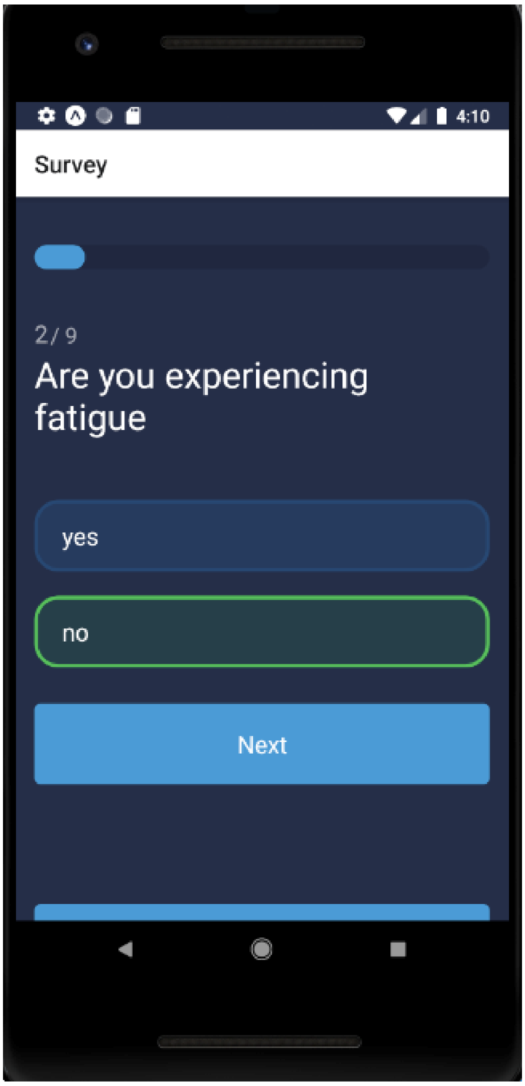
Go Back!

Success Scenario V: - Survey Form

For implementing survey form, we require input from the user to decide whether user is healthy or not.

So, survey form is created and the data of the questions and answer is stored in **QuestionData.js** from which the questions and answers are fetched and logic to provide the result whether patient is safe or not code is written in **QuestionData.js** The input is recorded and post api request is made in **SurveyScreen.js** to firebase to store the user details of Test reports to authenticate to the firebase database object of firebase is created from which data is provided to firebase and the configuration credential for connecting to the database is stored in object like api_key etc is stores in **firebase.js**

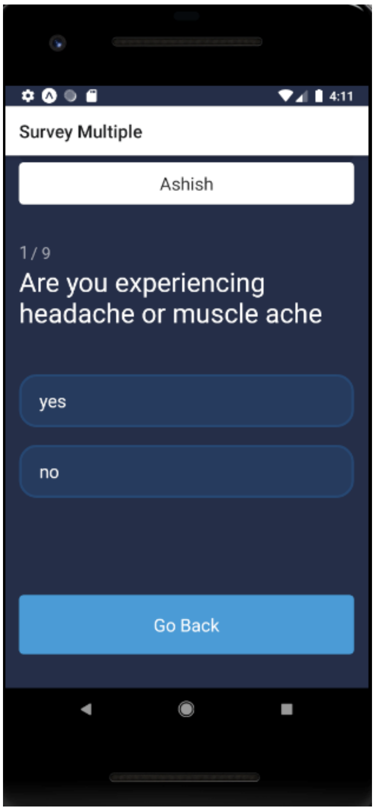
Further because the reports are stored in firebase they can be fetched and showed to the user we get json response and data is extracted and state variable of react native store the info.



Survey

2 / 9

Are you experiencing fatigue



Survey Multiple

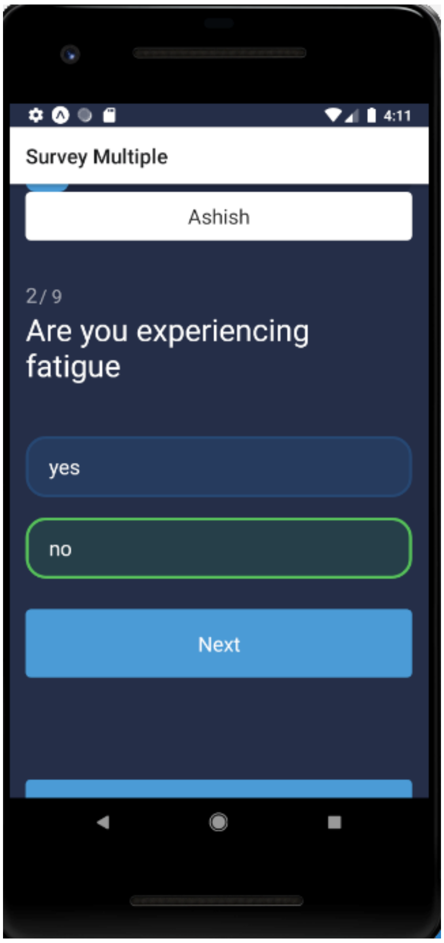
Ashish

1 / 9

Are you experiencing headache or muscle ache

yes

no



Survey Multiple

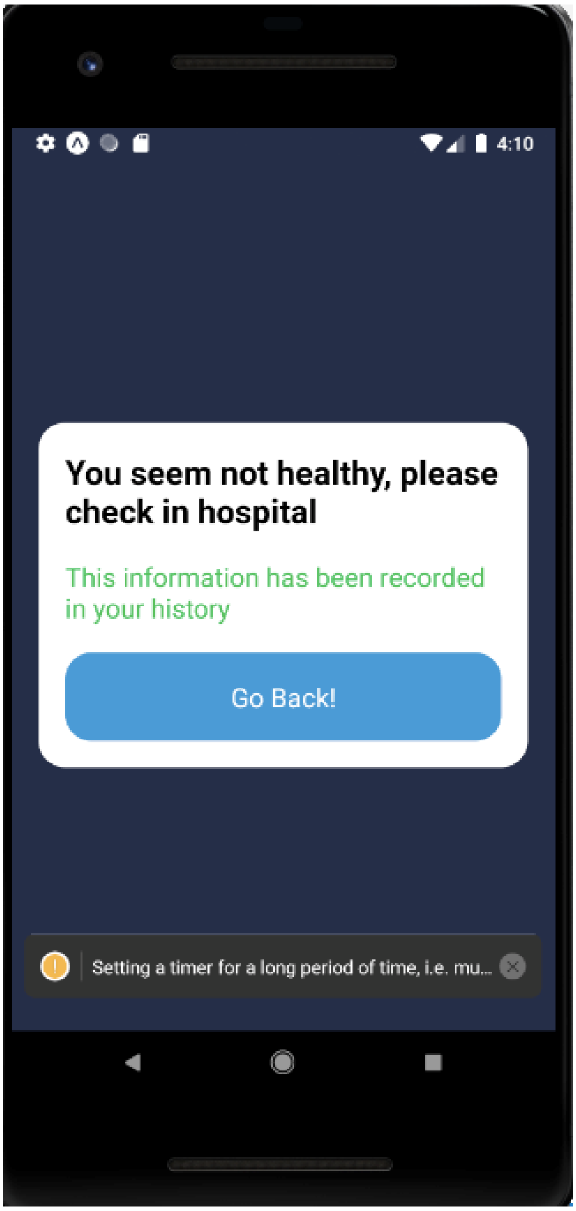
Ashish

2 / 9

Are you experiencing fatigue

yes

[✓ no]



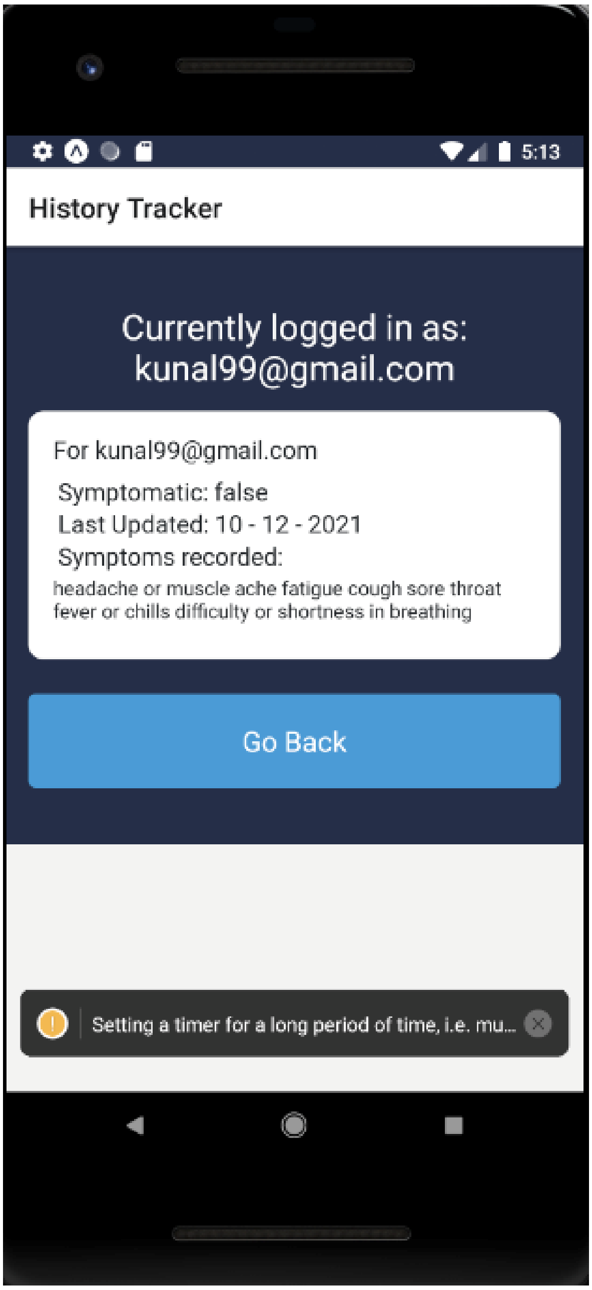
You seem not healthy, please check in hospital

This information has been recorded in your history

Setting a timer for a long period of time, i.e. mu...

Success Scenario VI: - Check History, Report History

For Implementing Check History & Report history, we have used the data stored in firebase. In **CheckHistory.js** and **ReportHistory.js** we have written the code to fetch (GET request) the data from firebase and response is displayed in the application when user clicks check history or report history button. In application following information is shown like email id of the user, symptomatic details, last updated date is shown of user and the symptoms user has selected while filling the survey form. In test report test type, test result and the date of user on which he/she was tested.



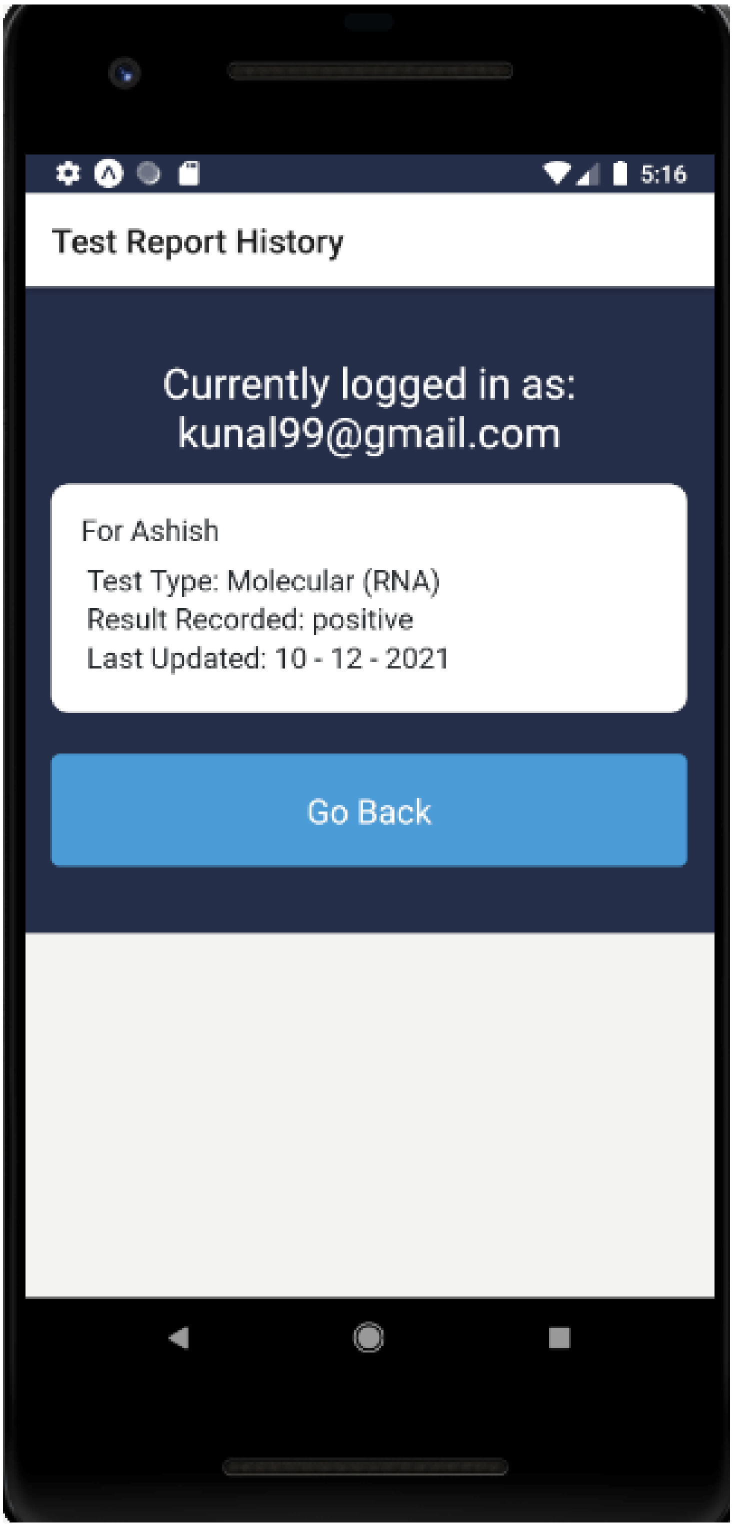
History Tracker

Currently logged in as:
kunal99@gmail.com

For kunal99@gmail.com

Symptomatic: false
Last Updated: 10 - 12 - 2021
Symptoms recorded:
headache or muscle ache fatigue cough sore throat fever or chills difficulty or shortness in breathing

Setting a timer for a long period of time, i.e. mu...



Test Report History

Currently logged in as:
kunal99@gmail.com

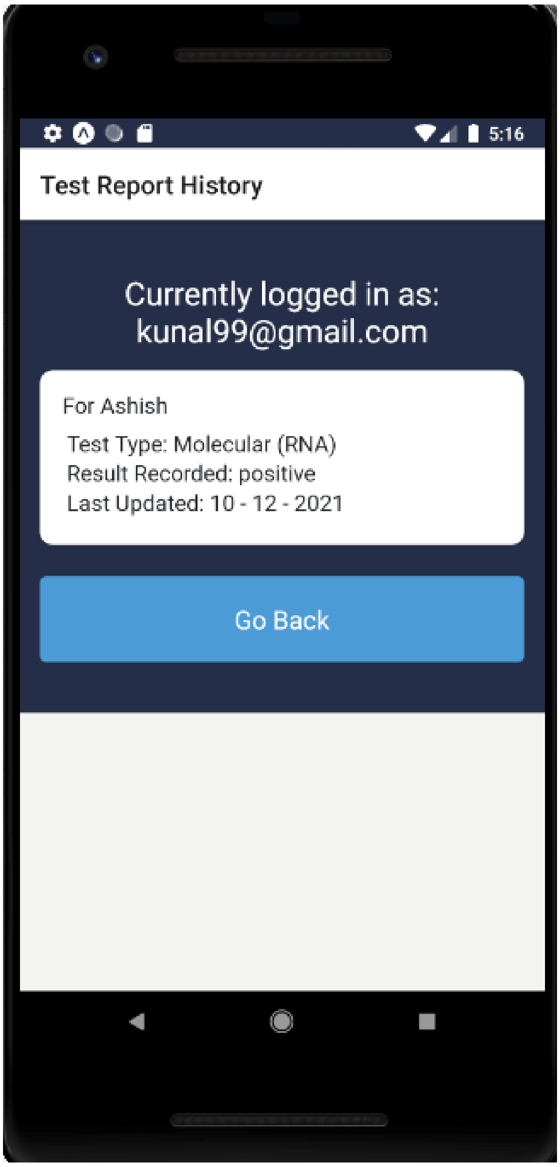
For Ashish

Test Type: Molecular (RNA)
Result Recorded: positive
Last Updated: 10 - 12 - 2021

Success Scenario VII: - Quarantine Info, Vaccination Info

For implementing Quarantine info and vaccination info, we have used web component to display the details.

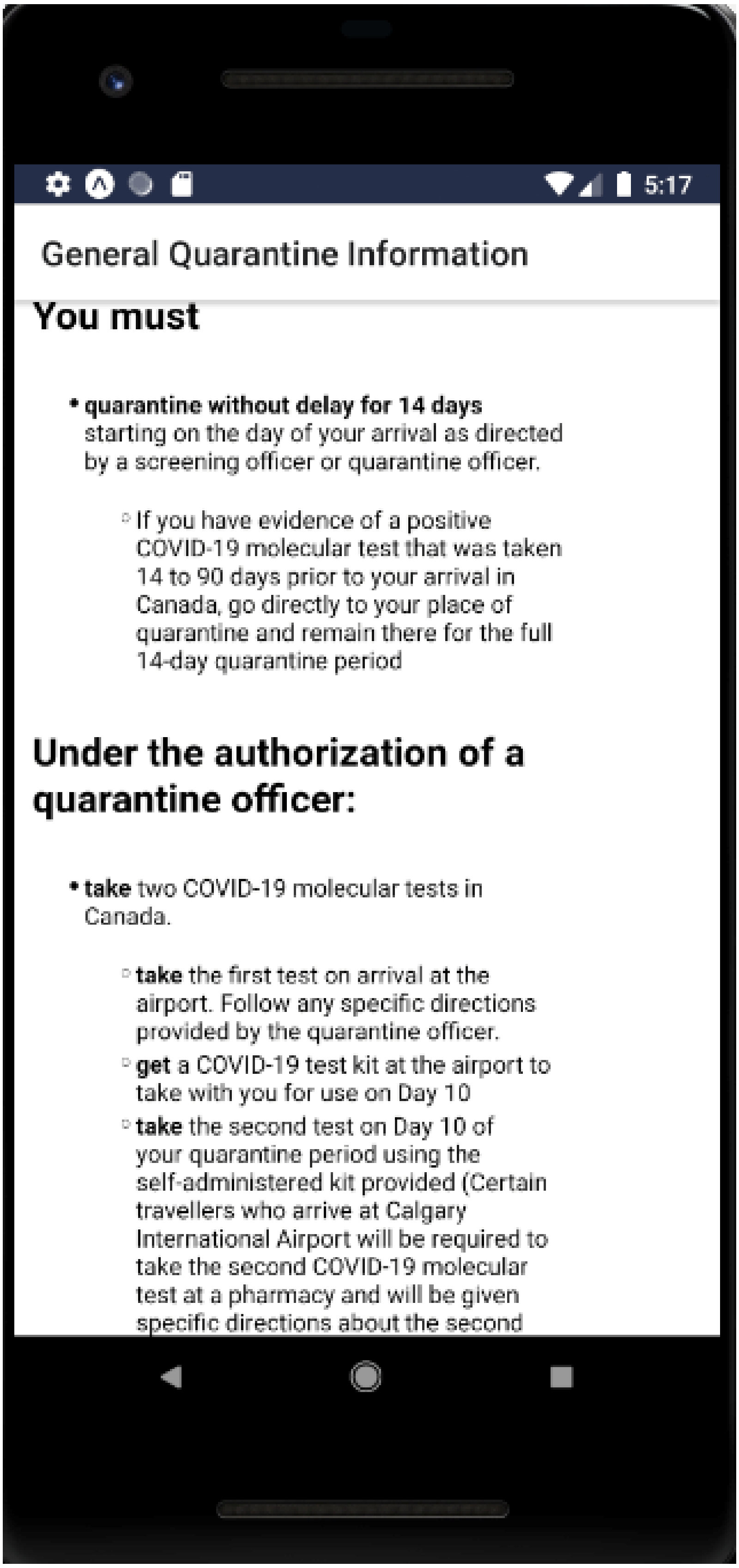
In **QuarantineInfo.js** and **VaccinationInfo.js** we have written the code to fetch the data for the user so that it becomes easy for finding details. we have used bootstrap to enhance the user interface and axios to fetch data and there is also option to see details of a particular country and user can login and get the information easily. React native components are used in order to get the benefit of reusable components and firebase to store the data of the user.



Currently logged in as:
kunal99@gmail.com

For Ashish

Test Type: Molecular (RNA)
Result Recorded: positive
Last Updated: 10 - 12 - 2021



5:17

General Quarantine Information

You must

- **quarantine without delay for 14 days** starting on the day of your arrival as directed by a screening officer or quarantine officer.
    - If you have evidence of a positive COVID-19 molecular test that was taken 14 to 90 days prior to your arrival in Canada, go directly to your place of quarantine and remain there for the full 14-day quarantine period

Under the authorization of a quarantine officer:

- **take** two COVID-19 molecular tests in Canada.
    - **take** the first test on arrival at the airport. Follow any specific directions provided by the quarantine officer.
    - **get** a COVID-19 test kit at the airport to take with you for use on Day 10
    - **take** the second test on Day 10 of your quarantine period using the self-administered kit provided (Certain travellers who arrive at Calgary International Airport will be required to take the second COVID-19 molecular test at a pharmacy and will be given specific directions about the second

3 e)User Manual for Covid Companion project

Abstract

Across the arena, humans are dealing with unforeseen demanding situations because of the Coronavirus pandemic. Almost 213 nations are below the effect of the virus and the entire international populace is unsure approximately how lengthy this pandemic will last. The best issue which can save you its exponential boom aside from a vaccine is to be well aware of the scenario and observe the necessary precautions. In this report, we layout and increase an android software to unfold focus and to assist the humans of the arena amid this COVID-19. The app connects the humans with the Doctors and the management to return collectively and combat the pandemic. With this app, it is easy to sing the unfold of the COVID-19 epidemic, test stays statistics, test for symptoms, browse an interactive map, and additionally get prevention details. Mobile packages like those assist to attach the government with humans and offer the essential facts and offerings wished on this pandemic. We have demonstrated our app via way of means of dispensing it with a large variety of humans and gathering comments on various functions of the app.

1 INTRODUCTION

On thirty-first December 2019, China alerted WHO approximately the Flu-like instances in Wuhan. After that on seventh Jan 2020, the virus turned into diagnosed as 2019n-CoV. WHO on eleventh March 2020 determined to claim it as a worldwide fitness emergency Currently, as of scripting this paper, the big overall instances for COVID-19 have reached 24 three million with overall death counts surged to 828,000 in numbers and the end to unfold isn't any manner close to a halt till a vaccine is now no longer developed. Various tries were made for containing the unfold of a virus with the aid of using governments such as Lockdown, Travel Restrictions, etc. however they unfold remain exponential and the principal difficulty nonetheless exists with estimating the unfold of COVID-19 among human beings. Various methodologies were made on Contact tracing for accomplishing and caution the user approximately the unfold and capacity dangers of the COVID-19 unfold. The most important query arises with the authenticity of the facts and strong proofs for the virus infections with authoritative facts in databases. In this report, we strive to clear up troubles with the aid of using taking surveys from the Users and comparing the results to covid symptoms, providing vaccination center's information through trackers using postal code of areas in Canada, making Covid information available using charts and written data, provide users a test report of Covid-19.

1.1 Purpose and Scope

The purpose of this project is to help people to get information about covid-19 virus and to spread awareness about vaccination and to track the details of the user and its symptoms to protect other people from covid patients and help them to get vaccinated.

1.2 Organization

Lakehead University Project.

1.3 System Requirements

An android phone, Internet.

2. Features and how to operate the covid companion application

2.1 Features

1. Authentication System

2. Covid Tracker

3. Survey Form for checking Whether patient is positive or negative

4. Test Reports Tracker

5. Vaccination Tracker

6. Report History

7. Check History

8. Quarantine Info

9. Vaccination Info

2.2 How to use Covid Companion Application

1. First user have to install the apk of covid companion.

2. After installing the app user has to register by providing crediantials, and then user can login.

3. Home screen appears there are many features and following are the details of features to use the application

4. To use covid tracker user have to select the country to get the information about that country after selecting the country the information is displayed on the screen.

5. To use vaccination tracker user has to provide the pincode of which user is searching for vaccination center, after entering the pincode the details of vaccine and center, helpline number is displayed on the screen.

6. To use Survey form feature, user have to answer some questions on basis of that the app will provide the information of health of the user.

7. To use test report Survey form feature, user have to answer some questions on basis of that the app will provide the information of health of the user.

8. To use Quarantine info and vaccination info feature, user can click the respective button to get the details.

9. To see the history of the users or to check the test reports, user can click the respective button to get the details.

3 f) Details of Meeting Minutes

Participants

1.Kunal Wadhwa

2.Ashish Vishwakarma

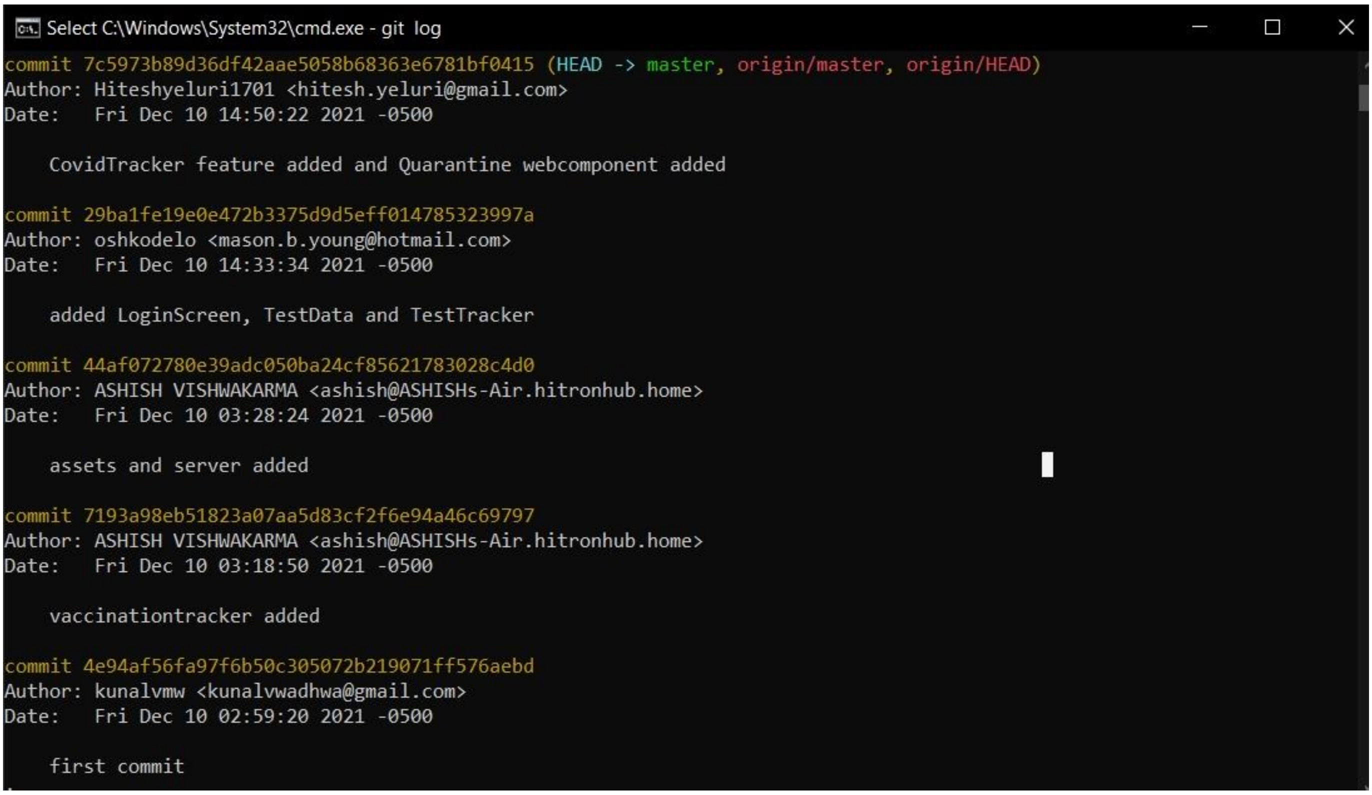
3.Hitesh Yeluri

4.Mason Young

Date	Time	Short Summary (Outcome)
10-11-21	6:30pm	project idea was discussed, technology selected, basic functionality was documented
17-11-21	8:00pm	User interface design was selected, work for developing features was started
25-11-21	11:00am	Database schema created, few features were implemented and tested
1-12-21	5:00pm	Remaining implementation of features was completed and tested with deployed server
3-12-21	6:00pm	More features were added as per proffer guidelines
4-12-21	4:00pm	Made a bot web scraping for fetching data in vaccination tracker
5-12-21	5:00pm	Api's were developed for fetching and posting of data
7-12-21	11:00am	Testing and deploying of features, server deployment.
8-12-21	8:00am	Fixing error in application and finalizing the project
9-12-21	10:00am	Started working on milestone 3 report
10-12-21	11:00am	Preparing presentation

3 g) Git Logs and Git Source Code Link

Git Logs: -



```
commit 7c5973b89d36df42aae5058b68363e6781bf0415 (HEAD -> master, origin/master, origin/HEAD)
Author: Hiteshyeluri1701 <hitesh.yeluri@gmail.com>
Date:   Fri Dec 10 14:50:22 2021 -0500

    CovidTracker feature added and Quarantine webcomponent added

commit 29ba1fe19e0e472b3375d9d5eff014785323997a
Author: oshkodelo <mason.b.young@hotmail.com>
Date:   Fri Dec 10 14:33:34 2021 -0500

    added LoginScreen, TestData and TestTracker

commit 44af072780e39adc050ba24cf85621783028c4d0
Author: ASHISH VISHWAKARMA <ashish@ASHISHs-Air.hitronhub.home>
Date:   Fri Dec 10 03:28:24 2021 -0500

    assets and server added

commit 7193a98eb51823a07aa5d83cf2f6e94a46c69797
Author: ASHISH VISHWAKARMA <ashish@ASHISHs-Air.hitronhub.home>
Date:   Fri Dec 10 03:18:50 2021 -0500

    vaccinationtracker added

commit 4e94af56fa97f6b50c305072b219071ff576aebd
Author: kunalvmw <kunalvwadhwa@gmail.com>
Date:   Fri Dec 10 02:59:20 2021 -0500

    first commit
```

Git source code Link: -

https://github.com/kunalvmw/CovidCompanion