



## COVID-GO: Cultivating a Culture of Daily Preventative Care for Covid-19

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## The Challenge

COVID-19 is an infectious disease caused by SARS-CoV-2 that has killed millions worldwide and has reaped unsurmountable impacts on the global and domestic economy for years to come. The virus spreads rapidly and most intensely impacts people with underlying conditions such as heart or lung ailments as they become more susceptible to developing more serious complications from the virus (Callaway, 2020).

## Research Objectives

In 2020 the COVID-19 global pandemic began. It caused hospitals to be overwhelmed while the public was continually stressed about possibly catching the virus (Vahey, 2021). We saw this as a opportunity to seize at the idea of creating a COVID-19 symptoms monitoring application. Viruses have the ability to mutate at an exponential rate, thus having this application can not only assess symptoms, but can provide assurance if one has possibly been infected with COVID-19 or not(Singh, 2020). Our app checks specific numbers and patient feedback to assess whether or not the patient has acquired the COV/ID-19 virus. The major goal of the app is to provide users a better understanding and assurance of their health status by providing feedback through explanations and graphs.

## App Design Process

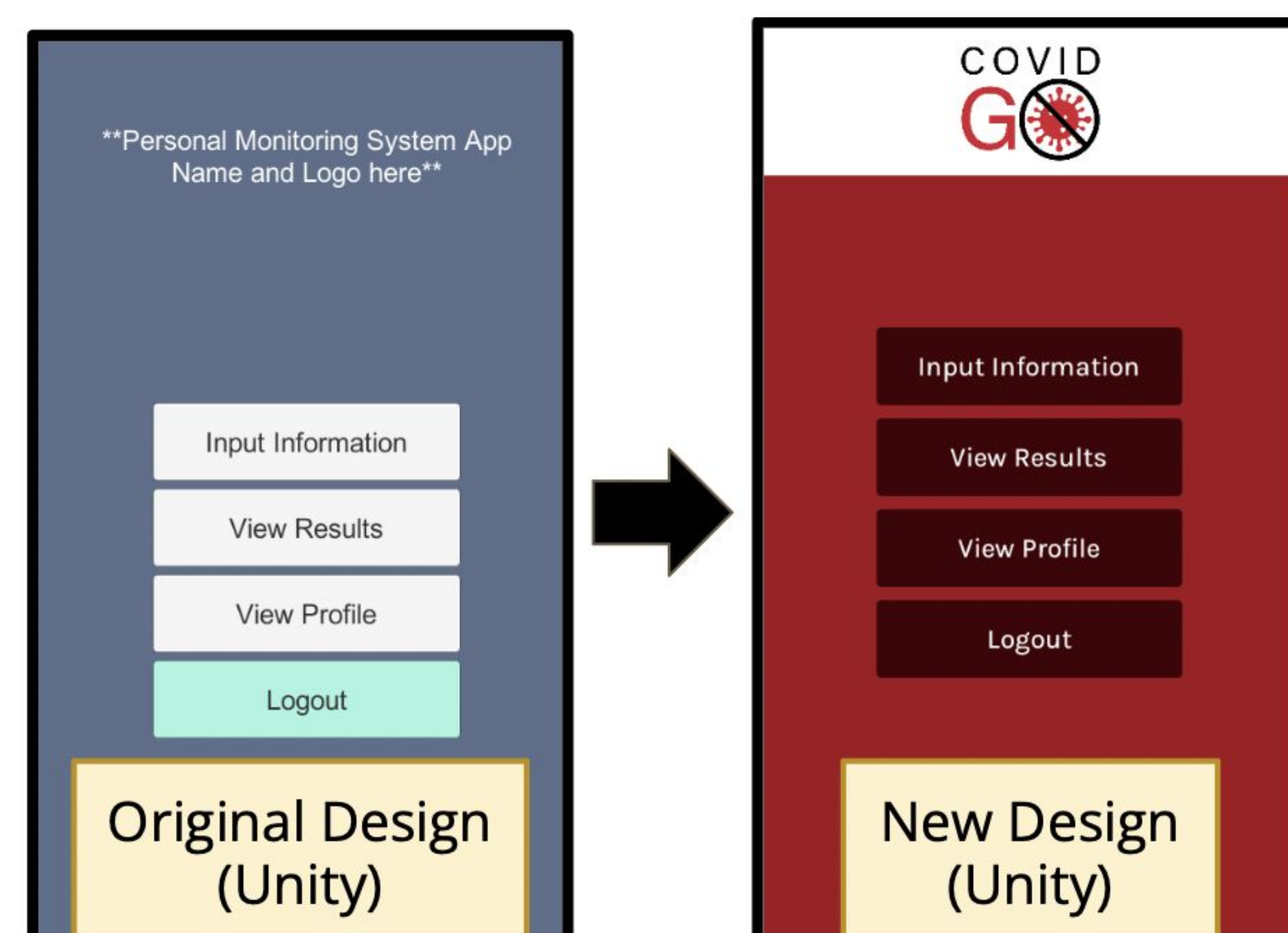


Figure 1. After mocking up the app flow in Google Drawings, we started making scenes in Unity with a blue color scheme. With the creation of our new logo, our app was completely redesigned, as shown above. All of the Unity scenes were updated to a red color scheme instead. To keep track of the hexadecimal codes for the new color scheme, we created a style guide in Google Docs.

## Core App Functionality

Figure 2. Each day, the user inputs their:

- (1) body temperature
- (2) blood oxygen level
- (3) heart rate

Based on these numbers, the app provides a suggestion. This suggestion details whether or not the user is likely to have COVID-19, symptoms they may have developed, and if they should get tested and isolate. By filling out the additional questionnaire, the user can get a more accurate suggestion. The user can only input their information once every 24 hours. If 24 hours have not passed and the user attempts to input their information again, they are met with an error message and taken back to the main menu scene, where they can choose to view their results, log out, or view their profile information.

## Questionnaire

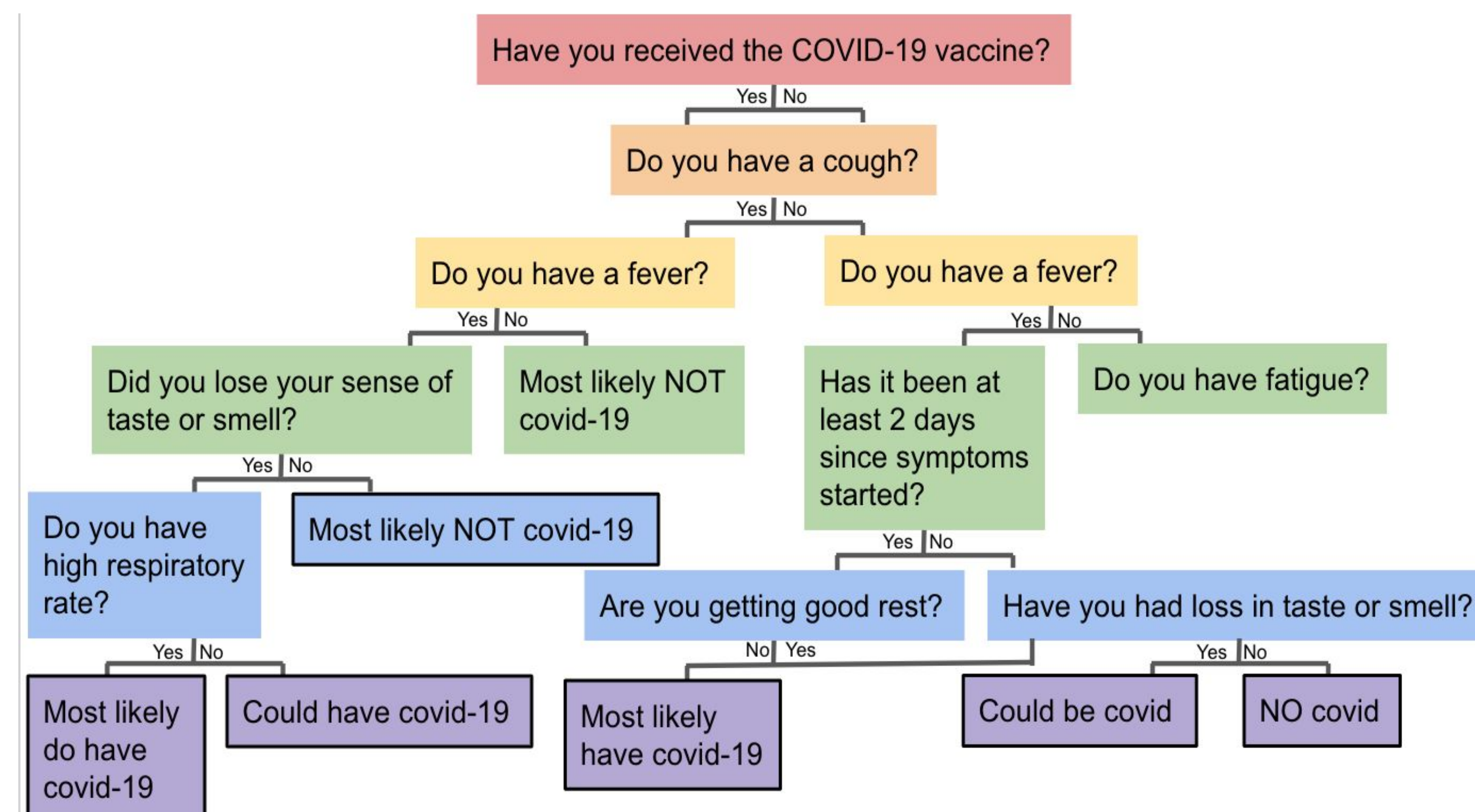


Figure 3. This flow chart was created as an outline for the app development team to create the questionnaire for the app. The questionnaire is meant to be a way for the patient to check quickly if they have COVID-19 or not based on their symptoms. This is only part of the official flowchart implemented in the application.

## The Database

We created an external, online MySQL database on GCP to store our patients' vitals data, which allowed us to store all of our clients data anonymously and without storage hardware. This will also allow us to run time series analytical models on our data, in order to optimize our diagnoses.

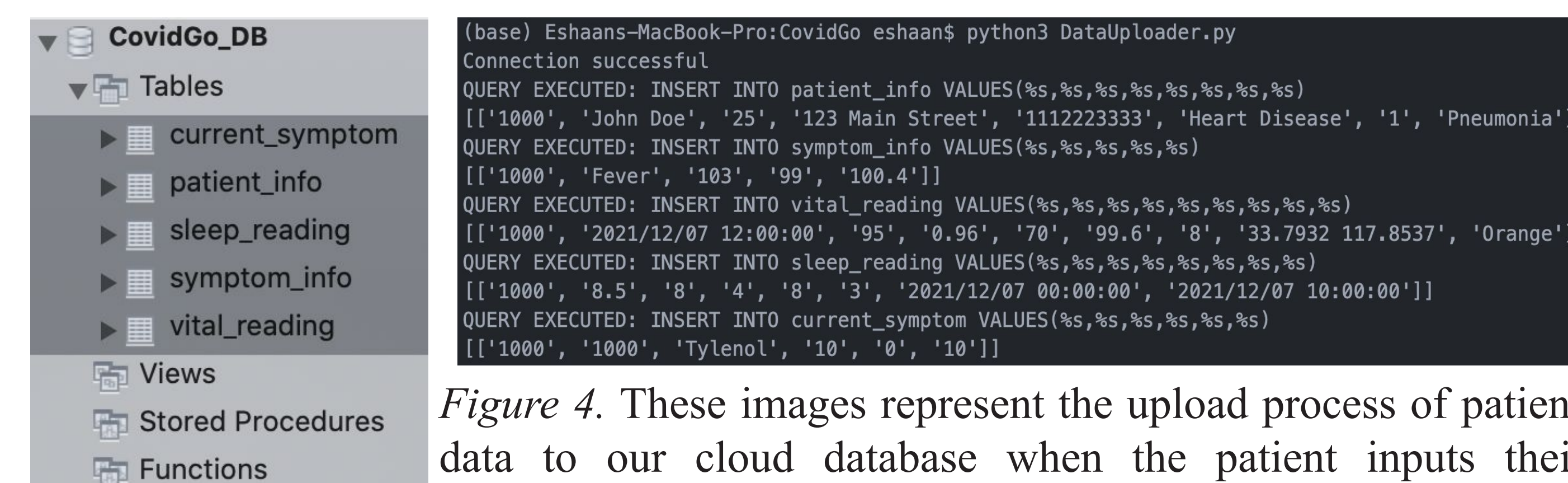


Figure 4. These images represent the upload process of patient data to our cloud database when the patient inputs their personal information on the app. The image on the left represents the entities, or tables, in the database. The image on the right shows the data from the app being inserted into our MySQL database.

## Table and Graphs

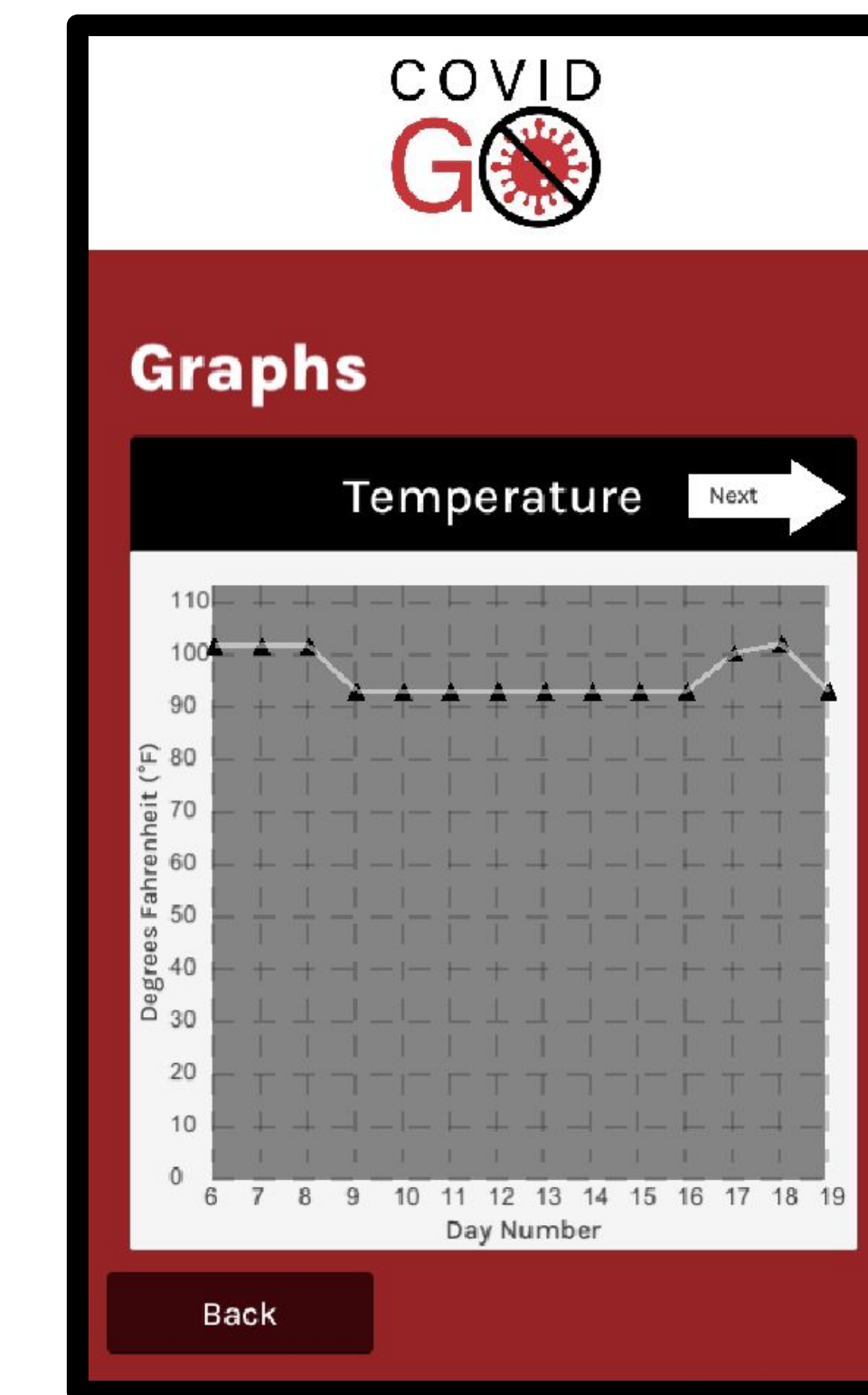


Figure 5A. The user can track their progress with each measurement through individual graphs. Entries for the most recent 14 days are graphed.

	4/2/2022	3/26/2022	3/26/2022
Body Temperature (°F)	90	90	9
Blood Oxygen Level (%)	90	3	3
Heart Rate (bpm)	99	30	30

Figure 5B. The user can also track their progress with each measurement with a scrollable table. The table shows the records for each day the user submitted their information for, with the most recent one displayed first.

## Future Applications

This app can be further advanced to allow research for other viral ailments and designed in a way to allow the app to receive updates to effectively account for this. We could also incorporate information regarding the different variants into the application, which will expand the educational aspect of the software.

In the future, we could also publish the app on the App Store and Google Play store. Additionally, we could incorporate the app into a wearable device so that people have more options to choose which device to monitor their vitals on. Seeing those, this will increase repurchase rates on the App Store and Google Play store as well as keep the device relevant for quite some time.

Finally, we would want to conduct user testing with our app to gain feedback that we could use in future updates to ensure the best user experience.

## Acknowledgements

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## References

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