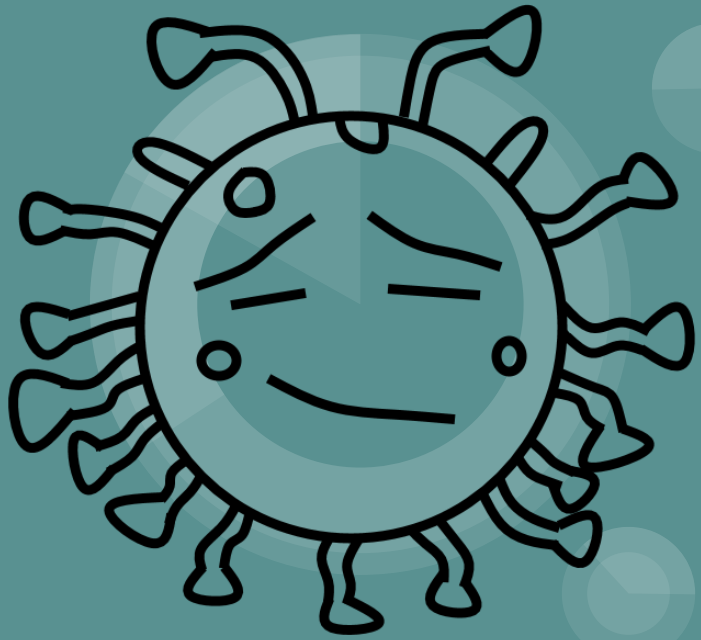
# Developing an App for COVID-19 Information



# Problem/Purpose

There has been an immense amount of misinformation about COVID-19 causing an uneasy time for people to verify if the information is true or false. Finding a way to verify whether or not certain information about COVID-19 is true or false will help us fight against the pandemic. The main purpose of this project is for people to  don't break certain guidelines or spread the virus due to the misleading information they have in causing the pandemic to worsen.

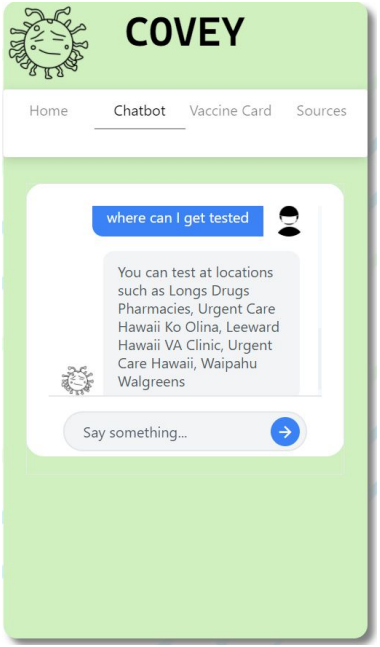
# Solution

The solution to the problem of ineffective and misleading information about COVID-19 would be an app heavily dedicated to COVID-19. The app will include a text chatbot to answer questions about COVID-19, recommended sites for trustworthy sites, and a functionality of uploading your vaccine card for easy access to showing your vaccine card. This solution would be more efficient than searching questions up or verifying any statement because there will be less hassle and time in trying to find the right information about COVID-19.

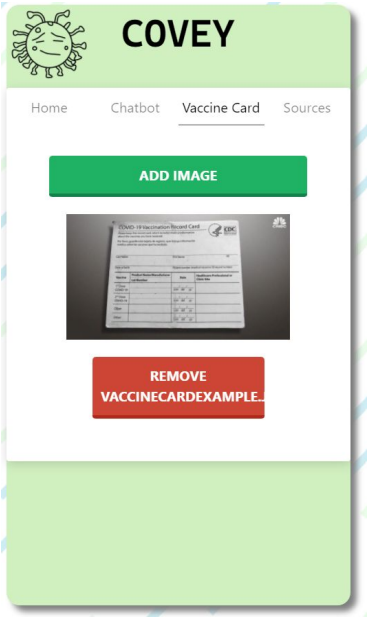
# Prototype Description

App link:

https://bit.ly/34ljHNy

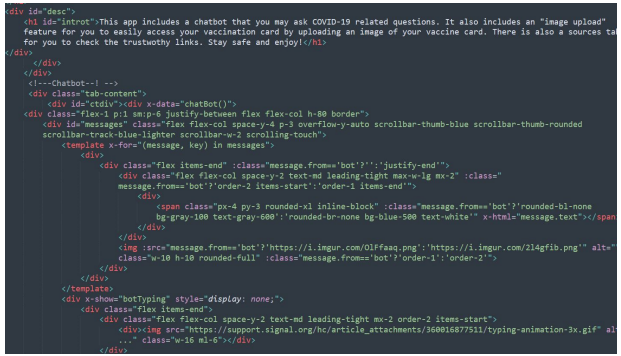



This page includes the chatbot where you can ask questions about COVID-19 to the chatbot




This page includes an image uploading feature where you can upload your vaccination card. It's helpful when you are out and are required to show your vaccination card.


This page includes all of the useful and trustworthy sites that you can go to for additional information.



The coding languages used to create the front-end -interface of the app were *HTML5* and *CSS*. The programming language used to program the back end was *JavaScript*. The code was written and tested with the software *Sublime*.

# Basic Process of Design

The front end includes divs which are digital containers. It includes elements such as text, images, and even more divs. These divs are organized in the html code. The appearances of these elements are styled through the use of the css code. In the css code, certain ids and classes that the elements are given in html, are styled. Styles such as background color or text alignment are included. Now with the back end of the app includes the javascript. Javascript is used to program functionalities of certain elements created in the front end. With the use of logical statements and arrays including a database of questions and answers, a chatbot is developed.

Repository of the code:

https://github.com/ralphramos22/covey

There are comments in the code describing what happens in the certain part of the code.

# Testing Procedures and Variables

**Independent Variable:** People testing the app

**Dependent Variable:** The overall rating of the app from each person.

**Constants:** Same WiFi, same app, same website.

**Procedures:**

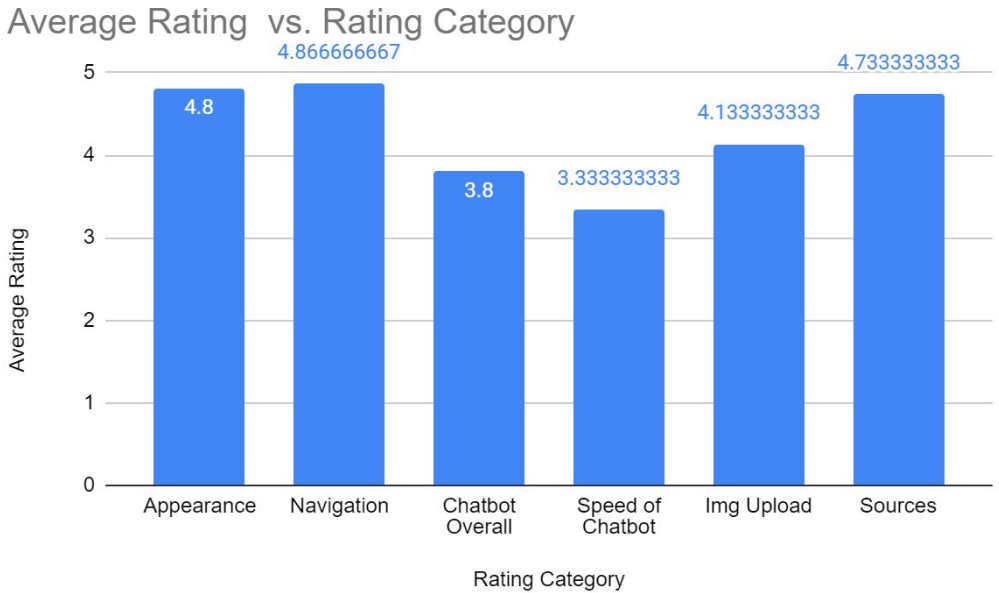
- Give the app testers the app
- Have them test the navigation
- Have them test the chatbot, make them ask COVID-19 to the chatbot.
- Have hem test the Image Upload Feature. Have them upload a picture of their vaccine card.
- Let them rate your app based on the given questions of the app.
- Collect responses.

# Data Table

| Person Number | appearance | navigation | Chatbot Overall | Chatbot Speed | Img Upload | Useful Sources |
|---|---|---|---|---|---|---|
| Person 1 | 5 | 5 | 4 | 3 | 4 | 5 |
| Person 2 | 5 | 5 | 3 | 2 | 3 | 5 |
| Person 3 | 5 | 5 | 4 | 3 | 4 | 5 |
| Person 4 | 4 | 5 | 4 | 3 | 3 | 4 |
| Person 5 | 4 | 5 | 4 | 2 | 4 | 4 |
| Person 6 | 5 | 5 | 4 | 3 | 4 | 5 |
| Person 7 | 5 | 5 | 3 | 2 | 5 | 5 |
| Person 8 | 5 | 5 | 4 | 4 | 4 | 4 |
| Person 9 | 5 | 5 | 5 | 4 | 5 | 5 |
| Person 10 | 5 | 5 | 4 | 3 | 3 | 5 |
| Person 11 | 5 | 5 | 4 | 4 | 5 | 4 |
| Person 12 | 5 | 5 | 4 | 4 | 5 | 5 |
| Person 13 | 5 | 5 | 3 | 4 | 4 | 5 |
| Person 14 | 4 | 4 | 5 | 4 | 5 | 5 |
| Person 15 | 5 | 4 | 2 | 5 | 4 | 5 |

| Person Number | What are some problems?/ What can be improved? |
|---|---|
| Person 1 | Certain questions that have long answers cause the chatbot to take a longer time to answer. |
| Person 2 | The vaccine card image doesn't save after closing the app/website. |
| Person 3 | Some of the questions can't be answered by the chatbot yet. Potentially add more questions that can be answered. |
| Person 4 | The input of the the chatbox is too small. |
| Person 5 | The ui is too small when using the phone, need to zoom in |
| Person 6 | Some questions take a while to be answered. |
| Person 7 | Slow response from chatbot |
| Person 8 | Could include direct sources towards questions. |
| Person 9 | Possibly have shorter answers for the questions so that answers can load faster. |
| Person 10 | Vaccine image is too small when I upload it. |
| Person 11 | Could talk about what the sources is about. |
| Person 12 | add a voice chatbot |
| Person 13 | image upload doesn't save image forever |
| Person 14 | Some links are hard to click on |
| Person 15 | Some of the questions like getting the place of a vaccine spot took long |

# Data Analysis - for graphs/visuals



# Data Analysis

There were a total of 15 app testers that were interviewed. The overall rating score of the Appearance was 4.80.The overall rating score of the Navigation was 4.86.(Highest rating category). The overall rating score of the Chatbot Overall was 3.8 . The overall rating score of the Chatbot Speed was 3.33(Lowest rating category). The overall rating score of the Image Upload was 4.13. The overall rating score of the Sources was 4,73. The average overall rating score from 15 app testers was 4.27. (Calculated by the average of all overall rating scores of each category (values above).)

# Data Analysis

Overall, the app had a solid rating score of 4.27 out of 5. The lowest rating scores were in the category of *Chatbot Speed*. This lacking rating may be caused due to the factor of inefficient speed of word detection of a string in the javascript code. The answer processing slow after asking certain questions, may be caused from the long answers containing a handful of words. Another error that could have caused the rating to be low was the inability of the chatbot to answer certain questions. One error however. noticed by the testers, included the images not being able to remain saved after closing the app. The error is due to the cause of data saving functionality which has not been added to the project yet. If these errors were fixed, the rating of the speed and image feature could potentially increase causing the average rating to increase as well.

# Conclusion

In summary, the purpose of the project was fulfilled due to the overall rating of the app testers. The rating determines the effectiveness of the app and how it helps them get trustworthy information about COVID-19 efficiently. The solution was a viable solution since the app is a great method in finding COVID-19 information efficiently compared to a google search and not knowing what sites to trust. From the data, it had a solid rating of 4.27 out of 5 which makes it reasonable for one to say that it's a reliable app. The rating for the sources tab had a decent rating of 4.73 proving that the sources were beneficial and trustworthy. According to the data, the speed of the chatbot may not have been ideal but certain questions are capable of answering a question faster than finding a link to the answer on google search. For the most part, the average rating verify the usefulness and effectiveness of the app.

The future steps with the app features such as importing a source link and determining whether the COVID information is reliable. Other steps would be to fix any errors such as slow response and data saving. One of the steps such as programming the chatbot to machine based learning so that the more possibilities of questions; the more information it can intake and produce more accurate answers. Another step to improve the chatbot would be to program it through *TensorFlow* where a set of data bases can be used for the AI to answer questions from a link. One step to improve the image feature would be to program it so that the image can save even after closing and reopening the app. This can be done by having the user input or data saved in PHP or jquery. Some minor steps would include fixing the interface of the app so that it's flexible for whatever resolution the device. This can be done by having a flex feature for the main div. As for the next steps as a community with the use of the app, together we can fight not only the pandemic of COVID-19 but the pandemic of misleading information about the virus itself.

# Bibliography


Center for Disease Control and Prevention (2021). *COVID-19 Indicated County View*. US Department of Health and Services.
https://covid.cdc.gov/covid-data-tracker/#county-view

This site shows statistics of COVID-19 total cases in the country of the United States alone. Statistics of total deaths and cases in the last 30 days are shown. A map of the country is provided showing different severity of COVID-19 transmission in each county.

Center for Disease Control and Prevention (2021). *mRNA Vaccines.* US Department of Health and Services.
https://www.cdc.gov/coronavirus/2019-ncov/vaccines/different-vaccines/mrna.html

This site mainly explains what mRNA Vaccines are and how they work. It also explains how they are regulated for safety and how the vaccines are new but not unknown since they have been studied for decades.

Maragakis, L, David Kelen, G (2021, September 21). *COVID-19 — Myth Versus Fact.*
https://www.hopkinsmedicine.org/health/conditions-and-diseases/coronavirus/2019-novel-coronavirus-myth-versus-fact

This site talks about the different statements claiming whether it is true or false. It also backs up the claims with factual evidence. Common misleading questions are answered true or false such as “Does a Negative COVID test mean you are safe?”

Refense Data (2021) *What is HTML, HTML Page Structure.*
https://www.w3schools.com/html/default.asp