



COVID Lens

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Project Definition

COVID Lens is an iOS application that will be utilized as a viable data-driven tool to help combat the current safety and social threats posed by the COVID-19 virus. The global COVID-19 pandemic was declared on March 11, 2020 by the World Health Organization and, as the new year is slowly approaching, the virus shows no apparent signs of disappearing soon. This suggests a necessity of new data-driven tools and methods to help society work around and cope with COVID-19 while promoting safety. The main goal of COVID Lens is to produce a novel COVID-19 tracking and public awareness system that will inform and protect members of the UNCG community from the COVID-19 virus. COVID Lens will regularly update and inform users of the possibility of COVID-19 exposure in their area. Users will be provided with information and resources - from reliable sources such as the Centers of Disease Control and World Health Organization - to stay up-to-date with current COVID-19-related news as well as current safety measures. Users will also be able to view a real-time map that displays areas where positive COVID-19 diagnoses have been reported.

Functional Requirements

- The application should be able to track user location data and update it in real time.
- The application should be able to display data on a real-time map.
- The application should be able to gather required data from users.
- Users should be able to successfully sign up and sign in using their login credentials.
- The application should provide users with guidance and reminders regarding COVID-19 safety measures.
- The user should be able to view current COVID-19 statistics in their area.
- Users should be able to self-report a positive diagnosis for COVID-19 while preserving anonymity.
- The application should provide users with nearby COVID-19 testing locations.

Usability Requirements

- Users will be able to adjust settings to personalize their experience with the app.
- Authorized users will have fast access to data upon request.
- The functionality of the user interface should be clear to the users.
- Elements of the user interface (e.g., menus) should be easy to understand.
- Users should be able to use and navigate the application with no prior knowledge.
- The user interface should be visually appealing to the user.
- The user interface actions and elements should maintain consistency.

System Requirements

- Supporting any major version of iOS 13 or higher.
- Basic internet connectivity or cellular data service.
- Additional recommended requirements:
 - Bluetooth-supported devices
 - Mobile location data enabled

User Requirements

- Users must have an email address to sign-up and sign-in.
- Users must own an Apple mobile device running iOS 13 or higher.
- Allow application to access basic Application & Privacy Permissions.
 - Notifications
 - Camera
 - Location Services
 - Photos
 - Bluetooth Sharing

Security Requirements

- Application must maintain the confidentiality of all sensitive data that is classified confidential.
 - Emails
 - Passwords
 - Location data
 - User diagnosis report
- Application libraries/database/APIs must follow and ensure the confidentiality of login information.
 - Sign-up/sign-in APIs.
 - User's personal medical data.

Project Specifications

Focus Domain

COVID Lens will serve to inform and protect members of the UNCG community from the COVID-19 virus by containing it as it encourages users to self-quarantine when needed and social distance. It would also focus on informing the UNCG community on preventive measures from the virus.

Libraries / Frameworks

- MySQL for database services
- Swift for front end development
- Python for data analysis
- PHP for REST API/ back end development

Platform

An iOS application available for Apple mobile devices.

Genre

An iOS application fitting into the Health and Education genres. COVID Lens strives to promote health and safety of the community and to keep users informed and educated about the current threats imposed by the COVID-19 virus.

Feasibility

Cost(s)

- The list of softwares, applications, and other virtual equipment are all free and open-sourced. Thus, the estimated goal for the financial cost of developing this application is of no cost.

Potential Risks

- An API or third party application could fail to load information needed to run COVID Lens.
- Users are liable to upload valid proof of positive diagnosis and false information can be provided in this approach if not evaluated correctly.

Risk Minimization

- In regards to unexpected API behavior, this risk will be minimized by adaptable architecture for simple switching to new API's
- By having trusted human verifiers, the risk

Potential Benefits

Successful implementation of COVID Lens will likely:

- Contribute to help minimize the risk of further infections.
- Promote more awareness of the severity of the situation.
- Encourage self-quarantine, social distancing, and wearing face coverings.
- Inform or help users self-educate themselves.

Overall Viability

Taking the overall costs, potential risks, and benefits into consideration, we believe implementation of COVID Lens is viable.