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Mechanical Engineering

ENG 224

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Structured Programming
Application Designed to Control Outbreak of Covid-19

Process of Web App Development

Concept

COVID-19 is a recently discovered disease with a very quick rate of spreading. The WHO has termed the disease a pandemic due it's shocking spread around the world in recent months. The corona virus currently has no cure but can be contained by reducing the rate at which it spreads, this have proven quite challenging as shown by recent numbers. Developing an app which can gather all the information concerning the disease in various parts of the world can reduce the spread.

The information will be stored on a cloud only accessible by health-care personnel. An exposed individual's increased knowledge will help them know how to self-quarantine or seek testing. The app will help reduce the spread of the disease as doctors find the cure and inform people of the spread of the virus around them.

Design of The App

The app would have a simple, user-friendly interface to avoid wasting time of users. This straight forward desing would make it easy for users to complete the survey for doctors to get information faster.

2) Step

Specifications
- The app will be web-based to wirelessly update the cloud
- The cloud data will only be accessible to health care personnel for analysis
- The app's interface will be straight forward to allow ease of use by all calibre of individuals
- Contact info. and locations of hospitals and isolation centres will be displayed
- The survey questions will cover the user's location, travel history and symptoms
- Suggestions from doctors will be provided based on the user's symptoms
- The app will ask the user to input name and location information
- The suggestions would be continue social distancing, self-quarantine or go for testing

Implementation
Web based apps are written with HTML, CSS and Javascript to allow internet access.

Testing and Debugging
Various random people input information pertaining to their symptoms, if they have any and their location. Any errors will be removed by debugging

App launch and Maintenance
The app is released and can be accessed through a web browser by the public. Any new developments will be used to update the app for user benefits

Hardware and Software Features
The software will gather data from users using surveys, location info and travel history from people that took part in the survey. Then the data will be analysed by doctors through the cloud

A web server and database working in conjunction with the app, there will be no need for a physical server because of the database. Each user will have a space in the database.

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Bottom - Up Approach Diagram

Display contact info of hospital

Display survey questions

Display suggestions

Survey

Coding

App

Store possible symptoms

Stores user's answers

Store suggestions

Stores survey questions

Cloud Database

```
          ( Start )
              |
              v
          [ Cloud ]
              |
              v
       / Get location and /
       / identity info.   /
              |
              v
        [ Add to Cloud ]
              |
              v
       / Fetch survey /
              |
              v
      [ Display  survey ]
              |
              v
      / Get travel history /
      / and symptoms       /
              |
              v
        [ Add answers
             to Cloud ]
              |
              v
         / If symptoms
              =                --- NO --->
           COVID-19
          symptoms /
              |
             YES
              |
              v
       [ Display suggestions
          from Cloud ]
              |
              v
       [ End  Survey ]
              |
              v
      [ Display hospital or
         isolation centre      ----->  ( Stop )
         contact ]
```