

**NAME: ORUMWENSE OSAYAMEN EDNA**

**MATRIC NUMBER : 18/ENG04/068**

**DEPARTMENT : ELECTRICAL/ELECTRONICS ENGINEERING**

**COURSE CODE: ENG 224**

**COURSE TITLE : STRUCTURED COMPUTER PROGRAMMING**

# **A WEB BASED APPLICATION TO DETECT AND DETER THE SPREAD OF CORONA VIRUS**

## **TABLE OF CONTENT**

- Introduction
- Planning and requirement
- Designing the product architecture
- Algorithm represented in a psedocode
- Implementation /developing the product
- Testing and verification
- Hardware and software features

## **INTRODUCTION**

Coronavirus disease 2019 (COVID-19) is defined as

illness caused by a novel coronavirus now called severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2; formerly called 2019-nCoV), which was first identified amid an outbreak of respiratory illness cases in Wuhan City, Hubei Province, China. It was initially reported to the WHO on December 31, 2019. On January 30, 2020, the WHO declared the COVID-19 outbreak a global health emergency. On March 11, 2020, the WHO declared COVID-19 a global pandemic, its first such designation since declaring H1N1 influenza a pandemic in 2009.

Illness caused by SARS-CoV-2 was recently termed COVID-19 by the WHO, the new acronym derived from "coronavirus disease 2019." The name was chosen to avoid stigmatizing the virus's origins in terms of populations, geography, or animal associations. On February 11, 2020, the Coronavirus Study Group of the International Committee on Taxonomy of Viruses issued a statement announcing an official designation for the novel virus:

severe acute respiratory syndrome coronavirus 2

(SARS-CoV-2).

It is as such that we choose to design the web-based application that can detect, display, rate (degree of infection), store, transmit data obtained wirelessly and access the data via the web together with other

features. All this to help create awareness of how fast the virus is spreading so as to help health workers know how much work needs to be put in and also to help get information to the public of how damaging the virus can be and how to avoid it.

## **PLANNING AND REQUIREMENT ANALYSIS**

The development of the web based system is a feasible project that which concluded will create great aid to the health workers community and the world's population at large it will consist of several phases and parts which will later be discussed concisely in the following stages of the report. The system will be able to retract information and updates on the number of COVID-19 cases, their

locations and display it on the main interface (i.e browsers). For the fulfillment of this project a full stack web app developer can be employed for the development and this helps save cost or a front end and a backend web developer can be employed for faster development and system efficiency. All these said, the cost of online data storage and deployment after production should also be considered.

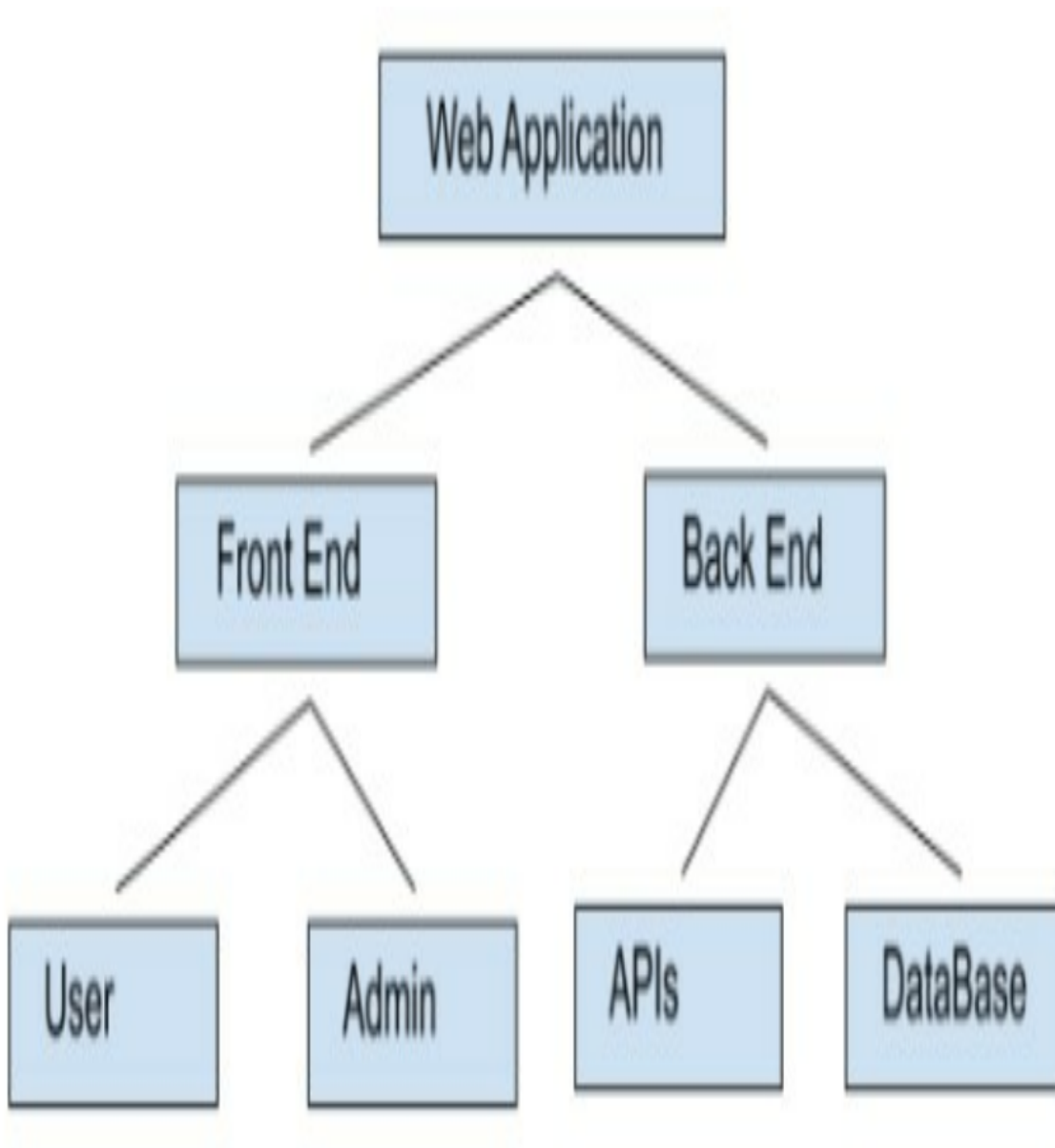
## **Designing the Product Architecture**

Using the top-bottom design we will approach from the main web application which is subdivided into the frontend and the backend. The front end where we have the User(Customer's display) and the Admin where information can be edited and updated by the health company. The backend consists of the APIs(Application Programmable Interfaces) which helps source for updates and information on COVID-19 and the database where all information and data are stored. Below is the Top-Down design diagram:

All the systems seen above will be integrated to work together thereby forming the COVID-19 Web Based Statistics Application. Below is an Algorithm and a Flowchart to support its working processes.

Algorithm represented in a Pseudocode

1. Start



2. Source information on COVID-19 using API into the Database

3. If .admin {

4. Require password

If password = true{

Display Admin Page

If Admin makes changes{

Prompt to save and exit

}

Else password wrong. Go Back to LINE 4

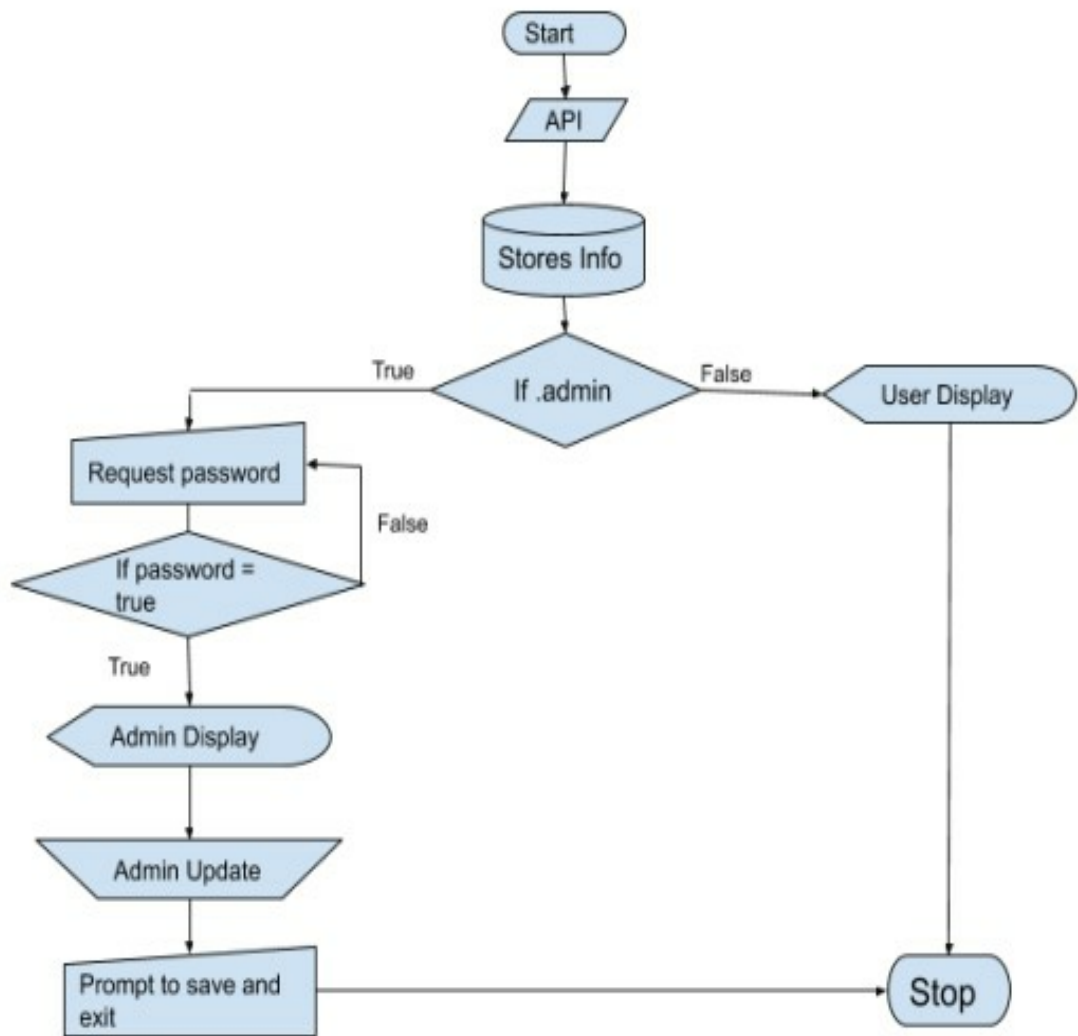
}

}

5. Else {

Display User(Customers' Site )

}



**Control Flowchart of the above Algorithm:**

## **Implementation/ Developing the Product**

The development of the web application following the design structure will be addressed into two sections the frontend and the backend.

### **FrontEnd**

The front end is been coded in three parts using the HTML(Hypertext Markup Language) which is the language of the web and the skeleton of every webapp, the CSS(Cascading Style Sheet) which gives the web app its beautiful looks and Javascript which helps give the app its functionality and adds interactivity. For the web application to be able to run efficiently on all browsers, the UTF-8 character encoding is been made use of.

### **BackEnd**

The backend will be coded using Node Js. The Js stands for Javascript. Node Js is a Javascript library that helps programmers connect their sites to the database or rather servers for data storage. Here Google's FireBase has been used for Data Storage also the recently developed google



map API which is used by google and many healthcare systems to provide real time information and statistics on COVID-19 around the world has been used.

## **Testing and Verification**

Although at each stage of development the system has been tested, after the front end and the backend of the webapp has been developed, they are all integrated together for final testing which can be done manually on the company's system before uploading to the internet. The testing is a critical part of the development processes because it helps detect bugs which are being fixed and helps provide a perfect system for customer's use.