**NAME: OJO TEMITAYO ADEPEJU**

**MATRIC NO: 18/ ENG05/044**

**DEPARTMENT: MECHATRONICS**

**COUSRE CODE:ENG 224**

**COUSRE TITLE :STRUCTURED COMPUTER PROGAMING**

**COVID-19 DECTECTOR WEB BASED APPLICATION**

DESIGNED BY TEMITAYO

**INTRODUCTION**

The coronavirus COVID-19 pandemic is the defining global health crisis we are experiencing presently and the greatest difficulty we have faced so far in the world. The outbreak was defined in wuhan , china , in December 2019 and was declared to be a public health emergency of international concern on 30th January 2020 , the virus cases are rising daily in Africa, the Americas, and Europe. The pandemic has led to severe global socioeconomic distruption,. The postponement or cancellation of sporting, religious, political and cultural events, and widespread shortages of suppiles.

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 be of assistance to health workers and also to inform the public of the damages the virus can cause and how to prevent it.

**SOFTWARE DEVELOPMENT CYCLE**

1. **Planning and Requirement Analysis**

The development of the web based system is to be of great aid to the health workers community and the general public and also help contain the spread of the virus to the infected places. The system will be able to retract information and updates on the number of corona virus cases and the areas that are densely populated with the infected indivials, the locations and display it on the main interface on a daily basis, in order to avoid the area and reduce the rate of spread of the infection and also help the health workers to be able to track infection and recovery rate accurately and effectively.

1. **SPECIFICATION**

The front end development using languages like HTML, CSS and Java script would be used to ensure a user friendly interphase such anyone would be able to access for optimum user experience. The back end development using languages like java or python will bring about proper communication between the database and the application .so that the application would respond at a level of optimum speed at all times.

**HARDWARE AND SOFTWARE FEATURES**

Hardware features of the application essentially involve any device capable of accessing the internet e.g. mobile phones, tablets, etc.

Software features should include;

1. An administration interface which can only be accessed by specified users through an approved password, an admin can modify and make changes to various part of the application
2. A world map that shows countries affected by the disease with their numbers in a well defined legend
3. A section to forecast on the increase and decrease of the spread of the pandemic up to a month ahead of the specified date.
4. An interface that indicates number of recorded cases world wide.
5. Via the use of Bluetooth connection amongst various users, asymptomatic users will be notified if they are at a high risk of infection
6. A questionnaire with preset questions on the symptoms to check if the user is infected with the disease.
7. User language choice of the application and the preferred units of temperature etc.
8. **DESIGN**

Algorithm and flowcharts are used to accomplish the software design, one of which is given further below. It deals with interactions and functions that is part of the software.

The architecture goes further to comply with the specifications for the application which systematically extract these techniques as solutions to the problems

1. **IMPLEMENTATION**

The architecture of the program will be addressed in two phases have a front end and back end development .

**Front End Development**

This manages everything users visually see first in the application. It’s

Responsible for the look and feel of the website. Programming languages such as HTML(Hypertext Markup Language)which is the standard markup language for documents designed to be displayed in a web browser .It can be assisted by technologies such as Cascading Style Sheets ( CSS)and scripting languages such as Java Script to create the interphase and added functions.

**Back End Development**

The backend will be coded using Node Js .The Js stands for Java script. Node Js Is a Java script library that helps programmers connect their sites to the database or rather servers for data storage. Here Google's Fire Base 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.

1. **TESTING AND VERIFICATION**

Once the features of the product are complete, In-depth testing is done. The product is released to a small group of beta testers, UX tools are also used to track how users interact with it. The product is assessed then checked for errors and bugs, which are corrected. It prevents the release of a faulty product to the end users.

1. **Release and Update**

There is a need to update the system in real time as information on the virus is constantly changing. (Not to mention the basic upkeep and maintenance of the application). The application is also released for users as all conditions have been satisfied

**TOP-DOWN DESIGN APPROACH**

**ALGORITHM**

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. Esle {

Display User(Customers’ Site )

}

**FLOWCHART OF THE ABOVE ALGORTHIM**

API

PROMPT TO SAVE AND EXIT

ADMIN DISPLAY

IF PASSWORD=TRUE

REQUEST PASSWORD

PASSWAORD

ADMIN UPDATE

USER DISPLAY

IF ADMIN

STORES INFO