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**DEPARTMENT: COMPUTER ENGINEERING**

**COURSE CODE: ENG 224**

**COURSE TITLE: STRUCTURED PROGRAMMING**

**DATE: 11TH APRIL, 2020.**

1. **Design the application following the software development cycle**
* Conceptualization: This application is designed for users to comfortable have access to their health status regarding the current pandemic (COVID-19). It’s an application that is seen on smart phones and contains only 74mb of space on the mobile device.

Automation of health care system. It is a smart phone based application that uses a sound monitor to detect if a person is infected or not.

* Specification:

Hardware

* + - * + Thermo-sensor (for detecting the temperature of the body at the moment).
				+ Sound monitor (a 3.5inch audio input acoustic sensor).
				+ Microphone
				+ A smart phone device.

Software

GUI (graphical user interface): push button, dialogue box, IDE, mobile user interface.

Timer

Error detection.

* Design: Algorithm and flowchart.
* Implementation or coding: Here I used a high level language to code
* Testing and debugging: The application is tested for further errors. The defects are logged into the defect tracking tool and is retested once fixed.
* Maintenance: There will be rule and regulations for the up keep of the application and it will be a free maintenance.
* Release and update: The application will be released at the agree time and will be updated from time to time.

**2. Critically discuss the hardware and software features.**

 Hardware features: The app has been developed using a 16gb of RAM, i7 2.9GHz 500gb hard disk space. It requires a thermos-sensor to help in detecting the temperature of the body at that point, processes it and then stores it. Also, one of the symptoms of this virus of constant coughing and a sound detector is also used to help detect the intensity of the cough and. This is what the application would be able to work with so as to detect whether a person is positive or not. It also had a 3.5inch audio input acoustic sensor that would be connected to the phone and then the app will process the result.

 Software features: The application was developed using the Microsoft operating system. I also used an IDE (integrated development environment) which is a graphical user interface for source code editing, compiling, and debugging and a code free development. It is especially useful for mobile app designers; features drag-and-drop interfaces, wizards and other visual interfaces for app development that allow non-technical users to build apps without writing code.

 Also, mobile user interface design is a user friendly interface used in its development so as to helps users to manipulate the system, and a device output that allows the system to indicate the effects of the user’s manipulation.

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|  |  App development software enables the synchronization of data created by apps when they’re offline with online services. Also a mobile app analytics gathers data about how users are engaging with the app after it’s deployed to spot bugs and opportunities for improvement.  |
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**ALGORITHM.**

 An algorithm to show whether a person is positive or negative.

Positive

Negative

STEP 1: start

STEP 2: positive A, negative B

STEP 3: Detect a

STEP4: Read detect

STEP 5: If A==P

 Print positive’

 Else if A==N

 Print negative

 Else

 Wrong code entered

**FLOWCHART**

START

ENTER CODE

IF CODE==P

PRINT POSITIVE

IF CODE==N

PRINT NEGATIVE

PRINT WRONG CODE OUTPUT

STOP

**BOTTOM-UP DESIGN OF THE APPLICATION**

PROCESS

DETECT

ALERT

SCAN

DISEASE DETECTION