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**APPLICATION NAME:** E-DOCTOR.

**FUNCTION:** The “E-DOCTOR” is used for running diagnostics in the human body and giving results by displaying temperature, the type of disease and the degree of infection.

### **SOFTWARE DEVELOPMENT CYCLE FOR “E-DOCTOR”**

REQUIREMENT → ANALYSIS → SOFTWARE DESIGN → TESTING → MAINTENANCE.

The Application design is based on the current COVID-19 pandemic, it is an application that effectively detects various diseases, including the corona virus.

Data Analysis will be carried out by integrating numerous data collected into the algorithm design, including:

The regular human temperature i.e. 37°C, Symptoms of Diseases e.g. Fever, High Temperature, Persistent Cough, etc, Body System Vitals i.e. Heart Rate, Blood Pressure, Pulse.

The Application Design is shown below in a Structured Flowchart and an Algorithm.

A python code was implemented to integrate the algorithm into instructions that could be understood by the computer system.

This is a prototype and it was tested on Malaria, coming to a conclusion based on high temperature and Fever, applying these sensors on a hardware device that appear like a box with a conical pin sticking out that will be attached to the measurand which will test for certain conditions.

### **HARDWARE COMPONENTS**

The hardware components of the application consist of a digital box and an integrated sensor. The box would be used for displaying the output e.g. the concluded disease result, temperature, blood pressure and a breakdown of the problem related to your result for example high blood pressure, temperature readings if your pulse exceeds the regular rate. The integrated sensor will serve as a clinical Thermometer that will send readings to the box.

### **SOFTWARE COMPONENTS**

The software components of the application include a python program used to execute the steps and also bring it to an end. Most of it comprises of signals which attain certain conditions in this case is physical conditions of the measurand, it is connected to transducer with converts measured values into signals that can be taken and then displayed. This integrates a well constructed set of instructions which executes with precision an accuracy with an installed mini data base to ensure body conditions are the regular observed readings otherwise we can say there is a problem.

## SENSORS USED IN THE APPLICATION AND USES

**Pulse Sensor:** Used in measuring Heart rate and Blood pressure.

**SPO<sub>2</sub> Sensor:** Used in measuring Arterial Oxygen Saturation.

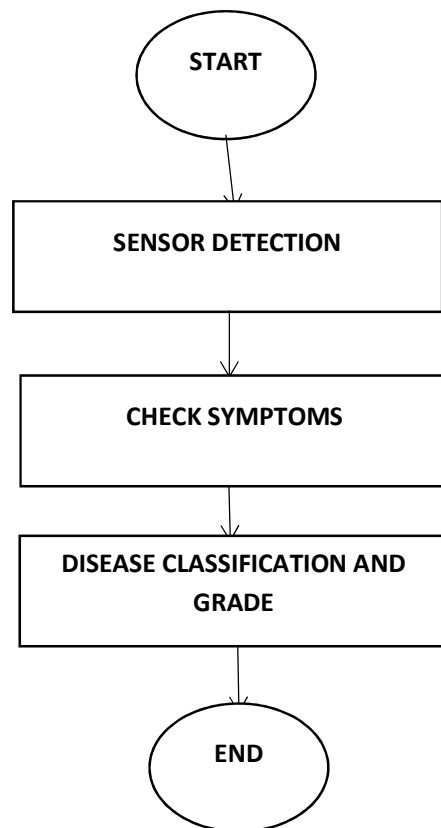
**Airflow Sensor:** Used in measuring respiratory rates.

**Electromyography sensor:** Used in measuring Electrical activity of Muscles.

**Body Temperature Sensor(thermometer):** Used in measuring body temperature.

**(ECG) sensor:** Assess the electrical and muscular functions of the heart.

## FLOWCHART



## ALGORITHM

1. Start
2. Collect information from sensor for processing.
3. Read database of the system to determine body condition.
4. Breakdown data and analyse each body condition.
5. Convert input from the sensors into visual output.
6. Check for errors.
7. Stop.

## TOP DOWN APPROACH

