SMART MANUFACTURING

PROJECT REPORT

Title: SMART HEALTH MONITORING USING IOT

Group-05

K. Litheesh Kumar - S20190020218 (UG-3, ECE)

P. Govardhan Naik - S20190010135 (UG-3, CSE)

Srikanth Yadav - S20190010026 (UG-3, CSE)

K Rokesh Reddy - S20190010098 (UG-3, CSE)

K. Bhanu Chaitanya - S20190010097 (UG-3, CSE)

Abstract:

Internet of Things (IoT) based smart health monitoring system is a patient monitoring system in which a patient can be monitored 24 hours. In the present world, IoT is changing the infrastructure of technologies. Health monitoring systems are one of the most notable applications of IoT. Many types of designs and patterns have already been implemented to monitor a patient's health condition through IoT. In this paper, a review of IoT based smart health monitoring systems is presented. This review aims to highlight the common design and implementation patterns of intelligent IoT based smart health monitoring devices for patients.

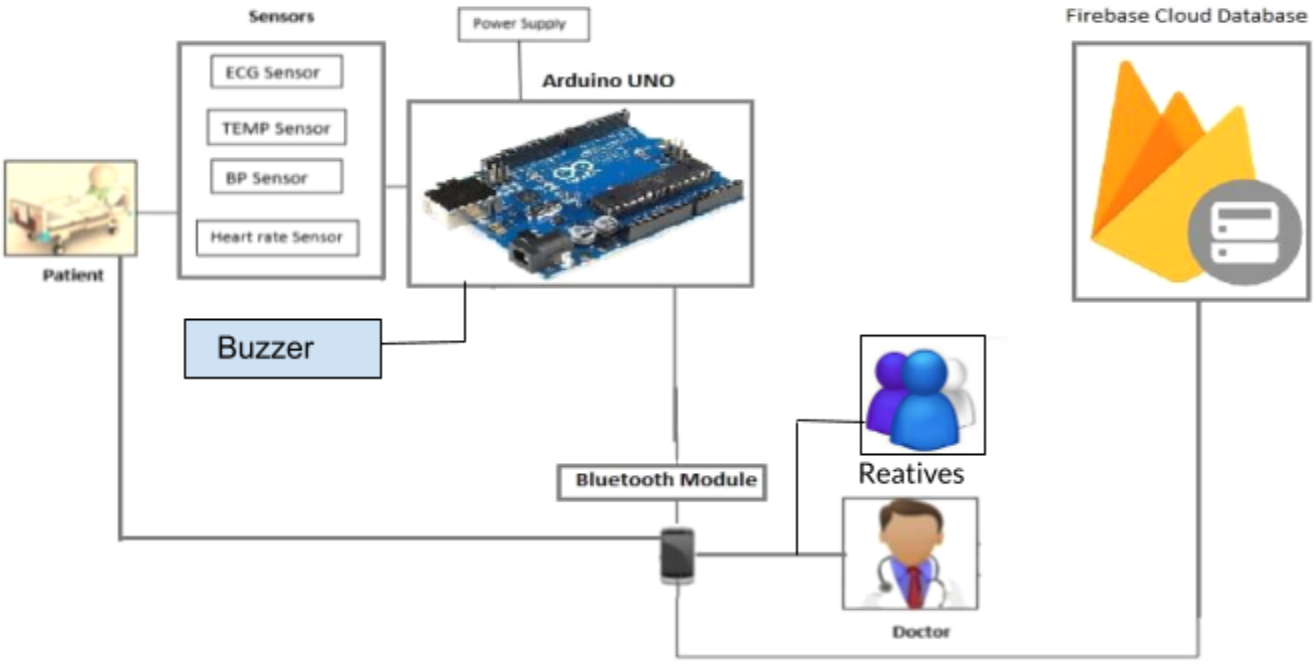
Continuously monitor the health i.e blood pressure, heart rate, ECG & temperature which will be collected using sensors. alert the user through a mobile app with respect to the collected health data using ML models. We build a health alert system which alerts the user about the health problems with the trained data set and deploy it.

Introduction:

IoT health monitoring has 4 sensors. First one is a temperature sensor, second is Heartbeat sensor and the third one is ECG sensor. We also measure the BP using sensors. This project is very useful since the doctor can monitor patient health parameters just by visiting a website or app. Nowadays many IoT apps are also being developed. So now the doctor or family members can monitor or track the patient's health through the app. To operate an IoT based health monitoring system project you need a Wi-Fi connection, the microcontroller or the Arduino board connects to the Wi-Fi network using a Wi-Fi module.

When an emergency situation occurs an alarm will be triggered to the nearby hospital. An alert call with a message will be sent to the hospital and immediate relatives of the patient who are registered in the app. So that in the absence of Wifi Network also this model will be helpful to indicate the emergency situation of the patient.

System Design:



Phase wise implementation:

Phase-1:

- Connection of all sensors like Temperature sensors, BP Sensor etc.
- Sending values to aws cloud
- Building the basic UI interface of the app.

Phase-2:

- Comparing the various ML Algorithms error rate and implementing the algorithm with the least error rate.
- Alerting through Alarm to near Hospital
- Creating a App for video call and to check the readings of patient

Materials Used:

Hardware components:

- BP sensor
- Heart rate sensor
- ECG Sensor
- Temperature sensor
- Buzzer
- Ardiuno board
- Nodemcu

Software components:

- Google Collab / Jupyter Notebook
- Firebase
- AWS
- Fire Store
- Flutter(Dart)

PROCEDURE

- We are collecting all the sensor data and it will be sent to the aws cloud using NodeMCU.
- Machine Learning algorithm would be using the cloud data to filter the patient's data based on the severity level of the health data.
- Then the data is sent to Firestore to upload in app
- We are creating an app in which users can login with email id and password.
- In the app all the details will be displayed and when the emergency situation occurs ,an alert call and notification will be sent to the doctor and immediate relations of the patient. A buzzer will be triggered at the nearby hospital to indicate the emergency of the patient.