INTERNET OF THINGS

PROJECT

ON

SMART HEALTH MONITORING SYSTEM FOR ELDERLY PEOPLE USING IBM CLOUD

By team 07 (sparks)

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1.INTRODUCTION:

1.1 OVERVIEW:

In this smart world everyone is busy with their own work that they didn't have time for monitoring the health of their beloved ones.It is also difficult for them to monitor the health manually.The issue of population aging seems more and more serious. So the use of technology in this aspect is very important.Health care and safety monitoring for the elderly is becoming an urgent issue to be solved.In order To solve this issue The healthcare Internet of things based
on medical digital devices makes the home health monitoring for the elderly people.The devices that are used directly connected to the server and the values that are retrieved collected and stored in the database.the vital values like temperature,pulse rate are collected and stored.Accessing of the values from the

cloud can be done through any mobile device or any web service as a mobile app and web url are created.If the vital values reaches a given critical value a message notification is delivered that makes the health care can reach the elderly more efficiently.

1.2 PURPOSE:

Taking care of our loved ones, this smart health monitoring system helps to identify their health status.The person is equipped with a wearable device in favor of monitoring his/her temperature levels and pulse rate.The wearable device is connected to the Mobile App where the patient can log -in to know their health status.Through Mobile App, the concerned people can get the status of health including Doctor

2.LITERATURE SURVEY:

2.2 EXISTING PROBLEM:

There are some existing techniques for measuring heartbeat and temperature. In this existing problem requires physical work that is patient has to go hospital for health checkup. There is no provision to check the parameters when they return to home. And hence there is a chance that the disease may return again.

2.2 PROPOSED SYSTEM:

In this proposed system i.e.,smart health monitoring system ,we measure primary parameters like temperature and pulse rate using pulse sensor.And this results will be uploaded to cloud and then to mobile app .We can access the patient health data for every minute by using mobile app .If the temperature or pulse rate is above or below the mentioned critical level then notification is sent to user using fast2 sms.In this system patient need not to attend hospital for temperature and pulse rate checkup.

3.THEORITICAL ANALYSIS:

3.1 BLOCK DIAGRAM:

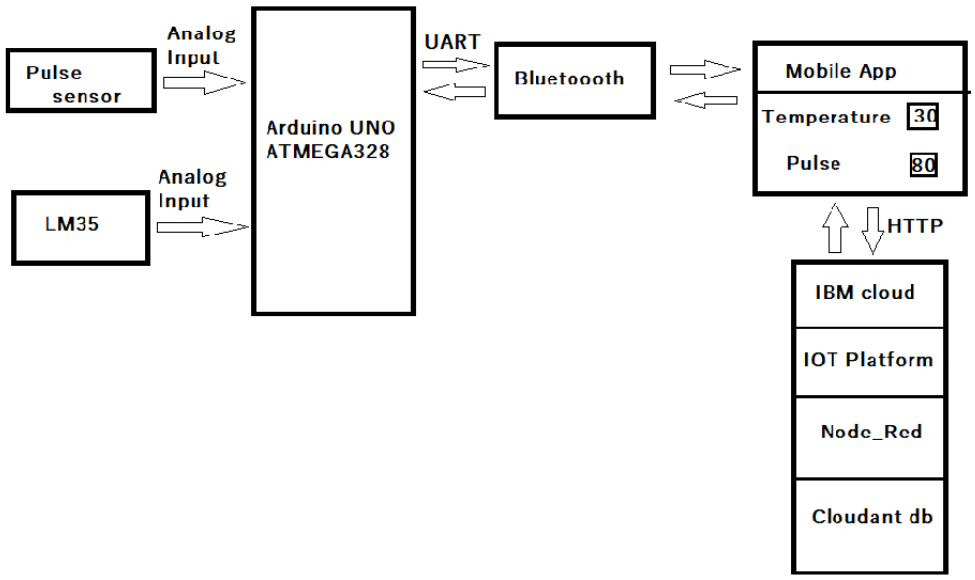

Fig:Block diagram of smart health monitoring system

3.2 HARDWARE/SOFTWARE DESIGNATION:

This smart health monitoring system is developed by using following software designations

1. IBM CLOUD
2. NODE RED
3. MIT APP
4. FAST2 SMS SERVICE
5. PYTHON SOFTWARE

4.EXPERIMENTAL INVESTIGATIONS:

While performing this experiment (or) Project we will investigate about temperature and pulse rate measurement the code we had written for displaying temperature and pulse rate values.By comparing temperature and pulse rate values with normal persons values if the values are increasing or decreasing it will send alert message to user by using Fast2 SMS service.

5.FLOWCHART:

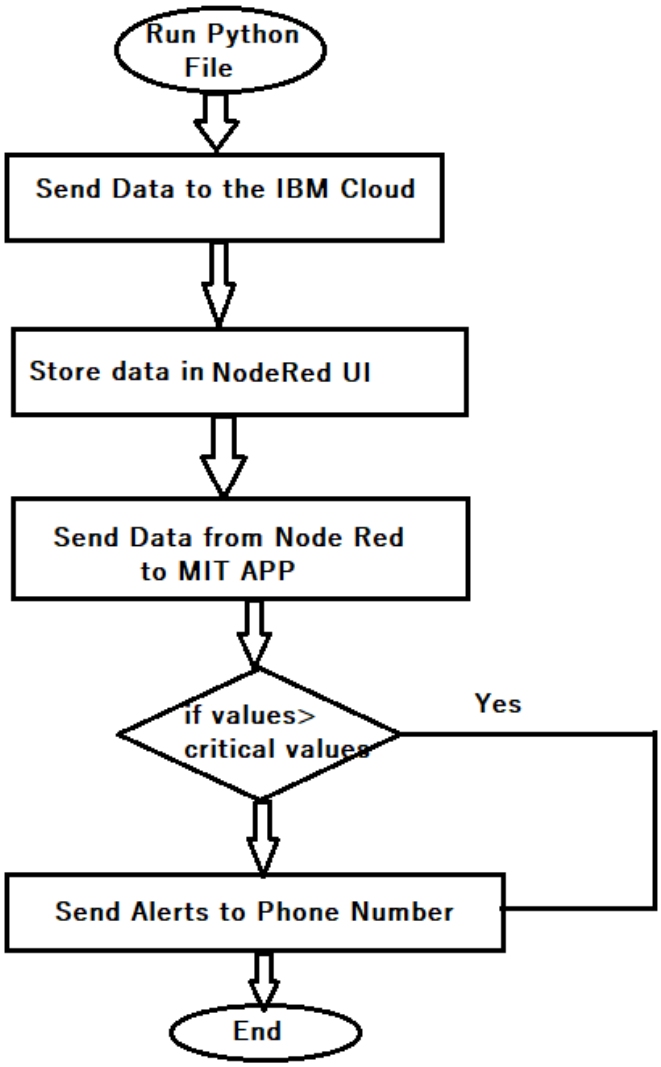

Fig:Flowchart of the Project Processing

6.RESULT:

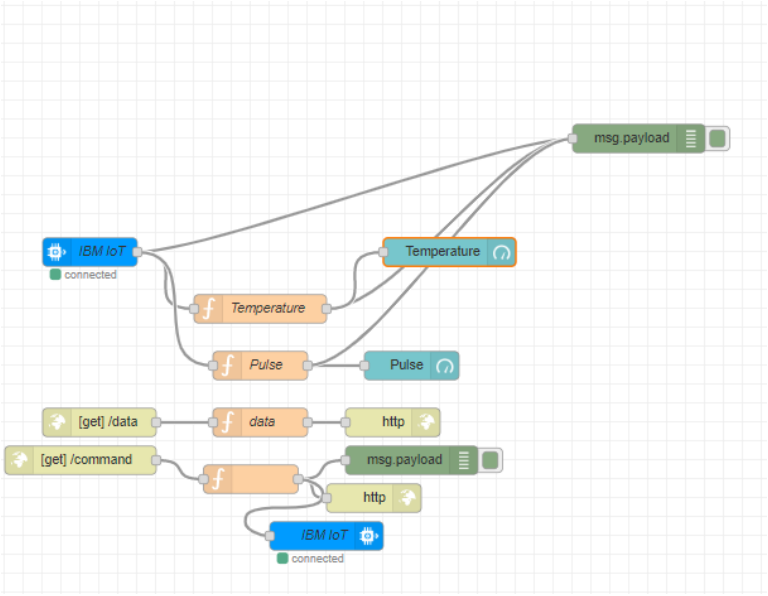

Fig:Node-Red Flow

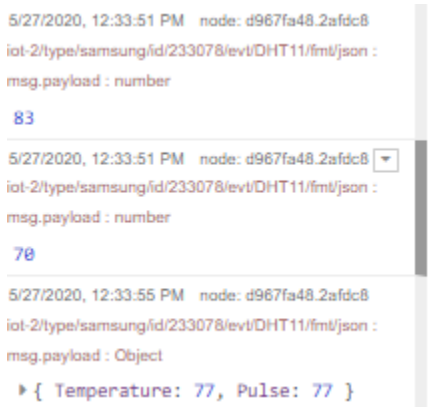

Fig:Output from Node-Red

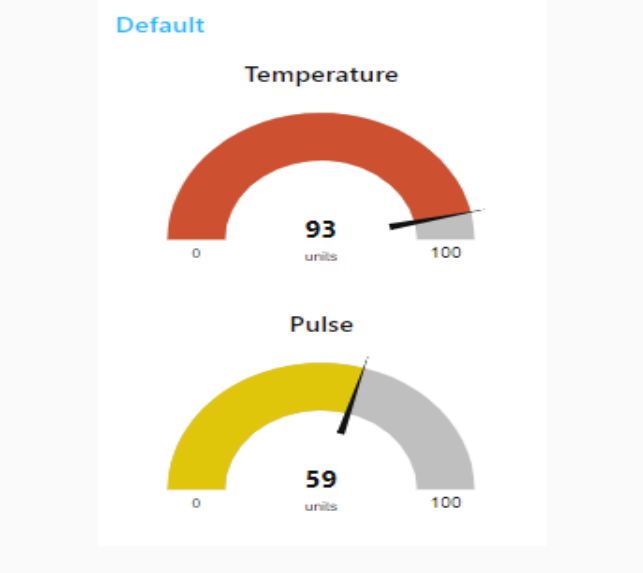

Fig:Output from Web App

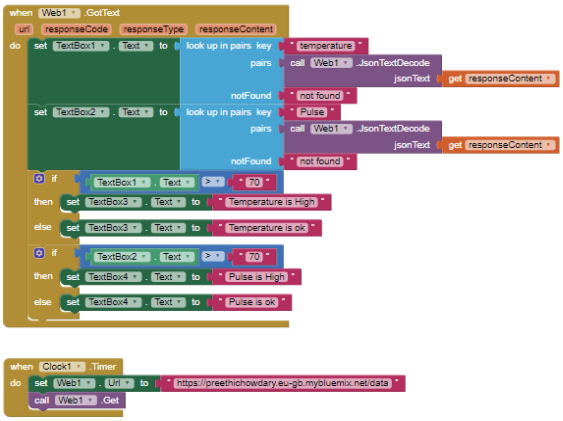

Fig:MIT Blocks

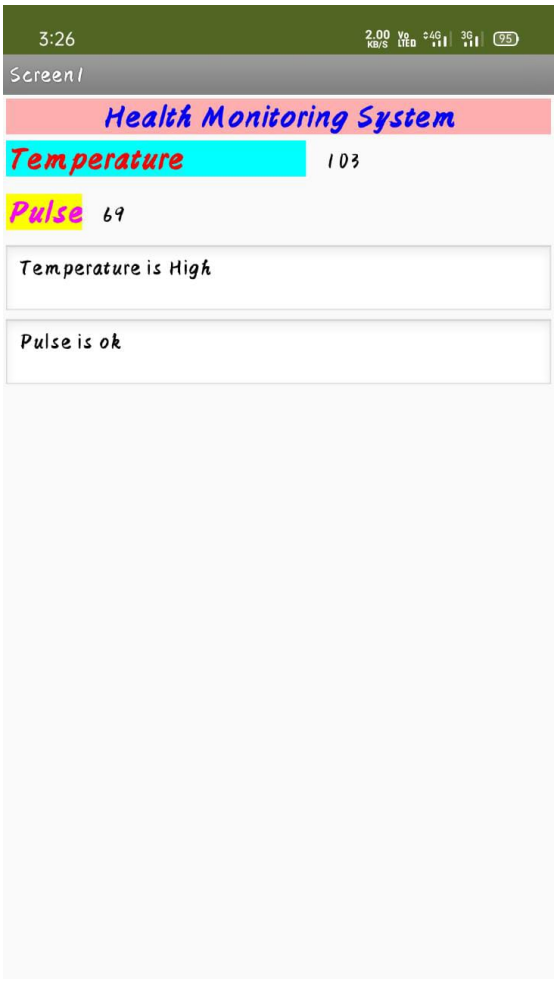

Fig:MIT APP Output

7.ADVANTAGES AND DISADVANTAGES:

7.1 ADVANTAGES:

1. The smart medical home can lower health care costs
2. use sensors to monitor patient health and can transmit information to health care workers so that it is accurate.
3. Even If the Relatives are far away they can monitor the elderly people health.
4. Reduced travel and wait time
5. Proximity to home and community

7.2 DISADVANTAGES:

1. If there is a network issue it causes a severe problem in emergency cases
2. Durability of the smart devices depends on the usage.

8.APPLICATIONS:

1. Reduces Risk of Heart failures
2. Prevent Dementia and Falls
3. Remote Patient Monitoring benefits

9.CONCLUSION:

These days Health Monitoring Systems are used widely in Medical Stream to keep in track with patients record.This application is mainly used to track the patient Temperature and Pulse. With this APP we can monitor the health status of the patient and take good care of the patient. The sensor send the real time data to the IBM cloud and App and send alerts to the Number registered.

10.FUTURE SCOPE:

This APP is designed to keep in track with the temperature and pulse of the human being. This can also be further developed to keep in track with various other parameters of the human body using different sensors. This makes the monitoring of Human Being even more easier.

11.BIBILOGRAPHY:

http://link.springer.com/

12.APPENDIX:

http://link.springer.com/

13.SOURCE CODE:

```
import time

import sys
```

```
import ibmiotf.application
import ibmiotf.device
import random
import requests
#Provide your IBM Watson Device Credentials
organization = "ekieae"
deviceType = "samsung"
deviceId = "233078"
authMethod = "token"
authToken = "90163638"

# Initialize GPIO

def myCommandCallback(cmd):
        print("Command received: %s" % cmd.data)



try:
deviceOptions = {"org": organization, "type": deviceType, "id": deviceId, "auth-method": authMethod, "auth-token": authToken}
deviceCli = ibmiotf.device.Client(deviceOptions)
```

```
#.....
except Exception as e:
print("Caught exception connecting device: %s" % str(e))
sys.exit()

# Connect and send a datapoint "hello" with value "world" into the cloud as an event of type "greeting" 10 times
deviceCli.connect()



while True:
        pul=random.randrange(55,90)
        #print(pul)
        temp = random.randrange(70,105)    #temp in fahrenheit
        #Send Temperature & Humidity to IBM Watson
        data = { 'Temperature' : temp, 'Pulse': pul }
        #print (data)
        def myOnPublishCallback():
            print ("Published Temperature = %s C" % temp, "Pulse = %s %%" % pul, "to IBM Watson")
        success = deviceCli.publishEvent("DHT11", "json", data, qos=0,
```

```
on_publish=myOnPublishCallback)
        if (temp>99 or pul>72):

r=requests.get("https://www.fast2sms.com/dev/bulk?authorization=SO1CpF52fevPGtRyiwlHXhZ9g7Md4AxTLQKE0rDNJns38qcYW6SQMOGgvipXFm1k0qjolfCyYbLeHuK7&sender_id=FSTSMS&message=Danger&language=english&route=p&numbers=7989233078")
        if not success:
            print("Not connected to IoTF")
        time.sleep(2)
        deviceCli.commandCallback = myCommandCallback
# Disconnect the device and application from the cloud
deviceCli.disconnect()
```