FINAL DELIVERY

Project Title:	Personal Assistant for Senior Citizen
Team ID:	PNT2022TMID25041

Code to subscribe topic in IBM watson:

```
#include <WiFi.h>//library for wifi
#include <PubSubClient.h>//library for MQtt
#include <LiquidCrystal_I2C.h>
#include "DHT.h"// Library for dht11
#define DHTPIN 15     // what pin we're connected to
#define DHTTYPE DHT11   // define type of sensor DHT 11
#define LED 2
DHT dht (DHTPIN, DHTTYPE);// creating the instance by passing pin and typr
of dht connected
void callback(char* subscribetopic, byte* payload, unsigned int
payloadLength);



//-------credentials of IBM Accounts------


#define ORG "1l6lvg"//IBM ORGANITION ID
#define DEVICE_TYPE "nodeMCU"//Device type mentioned in ibm watson IOT
Platform
#define DEVICE_ID "12345"//Device ID mentioned in ibm watson IOT Platform
#define TOKEN "?nUW@lkY)OglhHt)i6"     //Token
String data3="";



//-------- Customise the above values --------
char server[] = ORG ".messaging.internetofthings.ibmcloud.com";// Server
```

```
Name

char publishTopic[] = "iot-2/evt/Data/fmt/json";// topic name and type of

event perform and format in which data to be send

char subscribetopic[] = "iot-2/cmd/command/fmt/String";// cmd  REPRESENT
command type AND COMMAND IS TEST OF FORMAT STRING

char authMethod[] = "use-token-auth";// authentication method
```

```
char token[] = TOKEN;

char clientId[] = "d:" ORG ":" DEVICE_TYPE ":" DEVICE_ID;//client id

LiquidCrystal_I2C lcd(0x27,16,2);


//-------------------------------------------

WiFiClient wifiClient; // creating the instance for wificlient

PubSubClient client(server, 1883, callback ,wifiClient); //calling the

predefined client id by passing parameter like server id,portand

Wificredential

void setup()// configureing the ESP32

{
 Serial.begin(115200);

 dht.begin();

 pinMode(LED,OUTPUT);

 delay(10);

 Serial.println();

 wificonnect();

 mqttconnect();
}



void loop()// Recursive Function

{

 if (!client.loop()) {
   mqttconnect();

 }
}



void mqttconnect() {

 if (!client.connected()) {

   Serial.print("Reconnecting client to ");

   Serial.println(server);

   while (!!!client.connect(clientId, authMethod, token)) {
     Serial.print(".");

     delay(500);

   }



    initManagedDevice();

    Serial.println();

 }
}
```

```
void wificonnect() //function defination for wificonnect
{
 Serial.println();
 Serial.print("Connecting to ");

 WiFi.begin("Wokwi-GUEST", "", 6);//passing the wifi credentials to
establish the connection
 while (WiFi.status() != WL_CONNECTED) {
   delay(500);
   Serial.print(".");
 }
 Serial.println("");
 Serial.println("WiFi connected");
 Serial.println("IP address: ");
 Serial.println(WiFi.localIP());
}


void initManagedDevice() {
 if (client.subscribe(subscribetopic)) {
   Serial.println((subscribetopic));
   Serial.println("subscribe to cmd OK");
 } else {
   Serial.println("subscribe to cmd FAILED");
 }
}

void callback(char* subscribetopic, byte* payload, unsigned int
payloadLength)
{
  Serial.print("callback invoked for topic: ");
 Serial.println(subscribetopic);
 for (int i = 0; i < payloadLength; i++) {
   //Serial.print((char)payload[i]);
   data3 += (char)payload[i];
 }
  Serial.println("Medicine Name: "+ data3);
 if(data3 != "")
 {
   lcd.init();
   lcd.print(data3);


digitalWrite(LED,HIGH);
delay(20000);
digitalWrite(LED,LOW);
 }


 Else
 {
digitalWrite(LED,LOW);
```

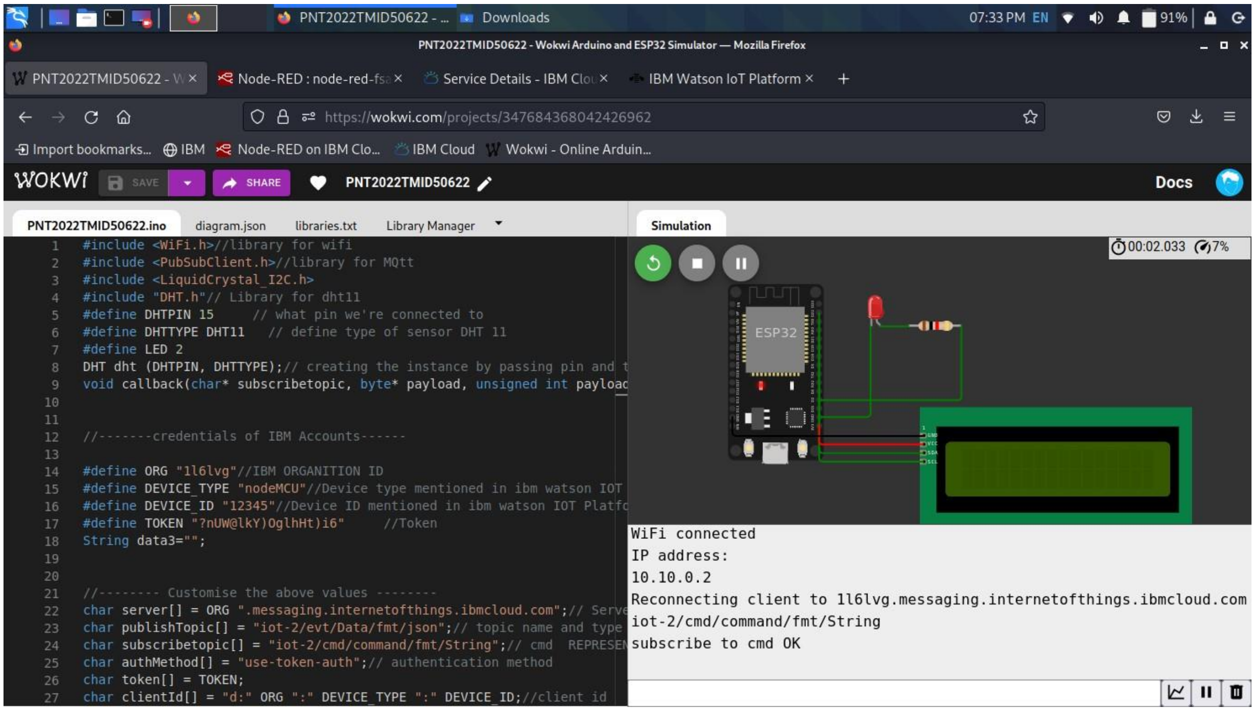
```
 }
data3="";



 }
```

Simulation on Wokwi before medicine added :

Wokwi url: https://wokwi.com/projects/347684368042426962



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char server[] = ORG ".messaging.internetofthings.ibmcloud.com";// Serve
char publishTopic[] = "iot-2/evt/Data/fmt/json";// topic name and type
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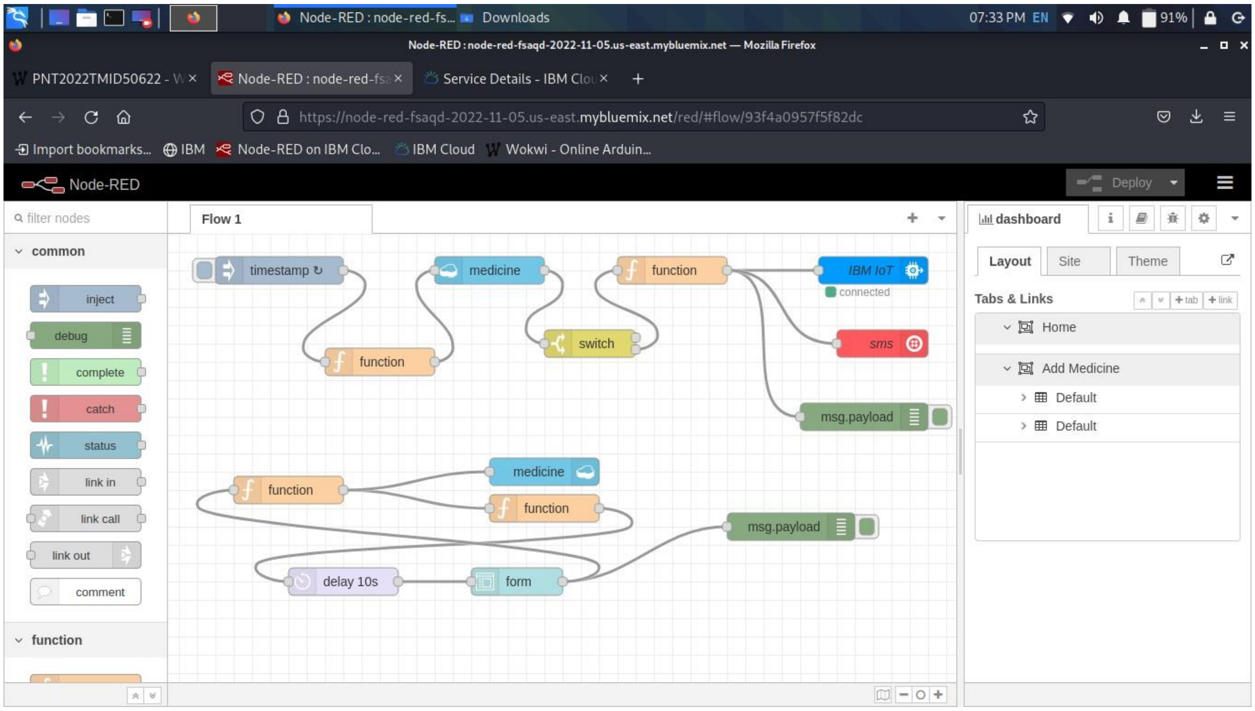
char authMethod[] = "use-token-auth";// authentication method
char token[] = TOKEN;
char clientId[] = "d:" ORG ":" DEVICE_TYPE ":" DEVICE_ID;//client id
```

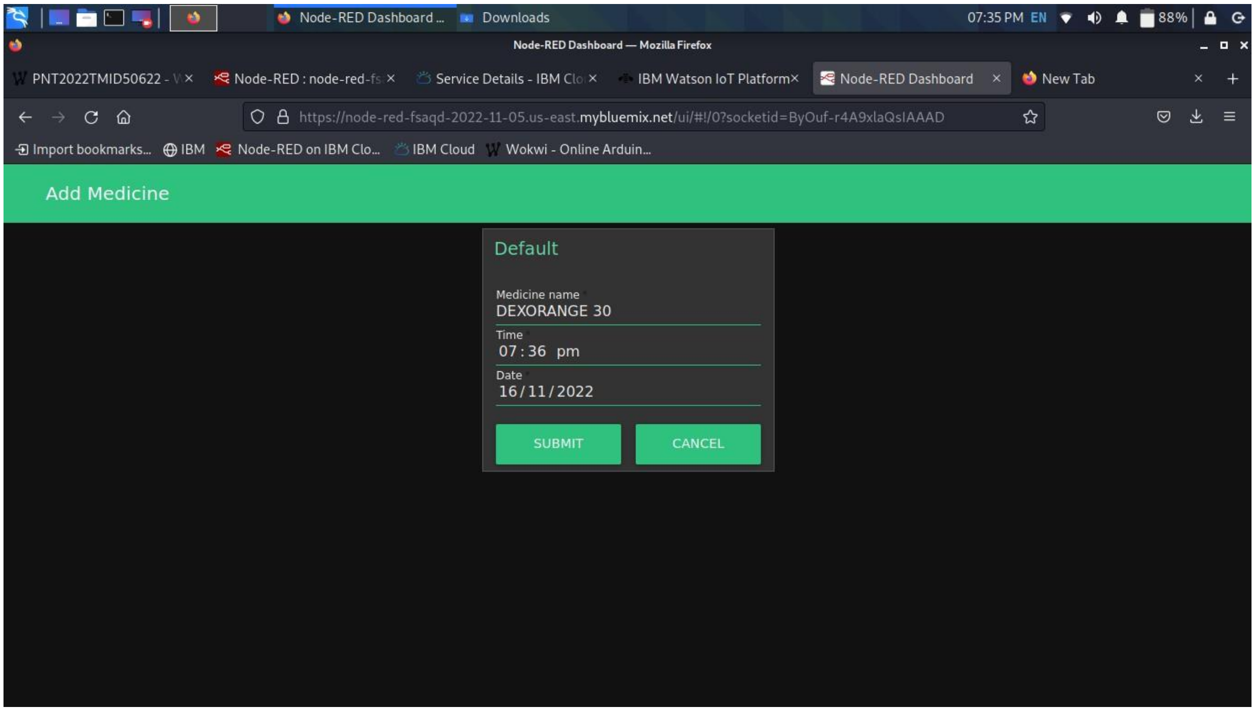
```
WiFi connected
IP address:
10.10.0.2
Reconnecting client to 1l6lvg.messaging.internetofthings.ibmcloud.com
iot-2/cmd/command/fmt/String
subscribe to cmd OK
```

Node-red configuration:

Node-red url: https://node-red-fsaqd-2022-11-05.us-east.mybluemix.net/red/



Added Medicine details in node-red form:


Node-RED Dashboard — Mozilla Firefox
https://node-red-fsaqd-2022-11-05.us-east.mybluemix.net/ui/#!/0?socketid=ByOuf-r4A9xlaQsIAAAD

Add Medicine

Default

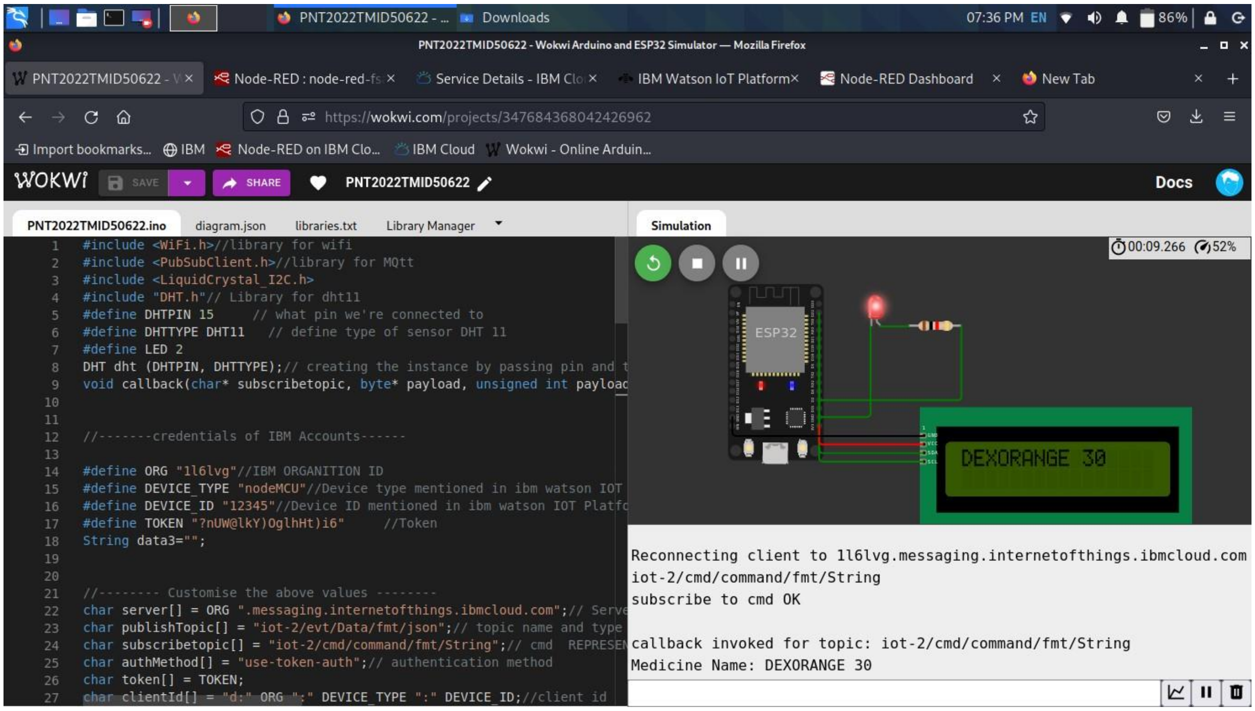
Medicine name
DEXORANGE 30

Time
07 : 36 pm

Date
16 / 11 / 2022

SUBMIT CANCEL

Simulation on wokwi after medicine added:



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String data3="";


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char publishTopic[] = "iot-2/evt/Data/fmt/json";// topic name and type
char subscribetopic[] = "iot-2/cmd/command/fmt/String";// cmd  REPRESEN
char authMethod[] = "use-token-auth";// authentication method
char token[] = TOKEN;
char clientId[] = "d:" ORG ":" DEVICE_TYPE ":" DEVICE_ID;//client id
```
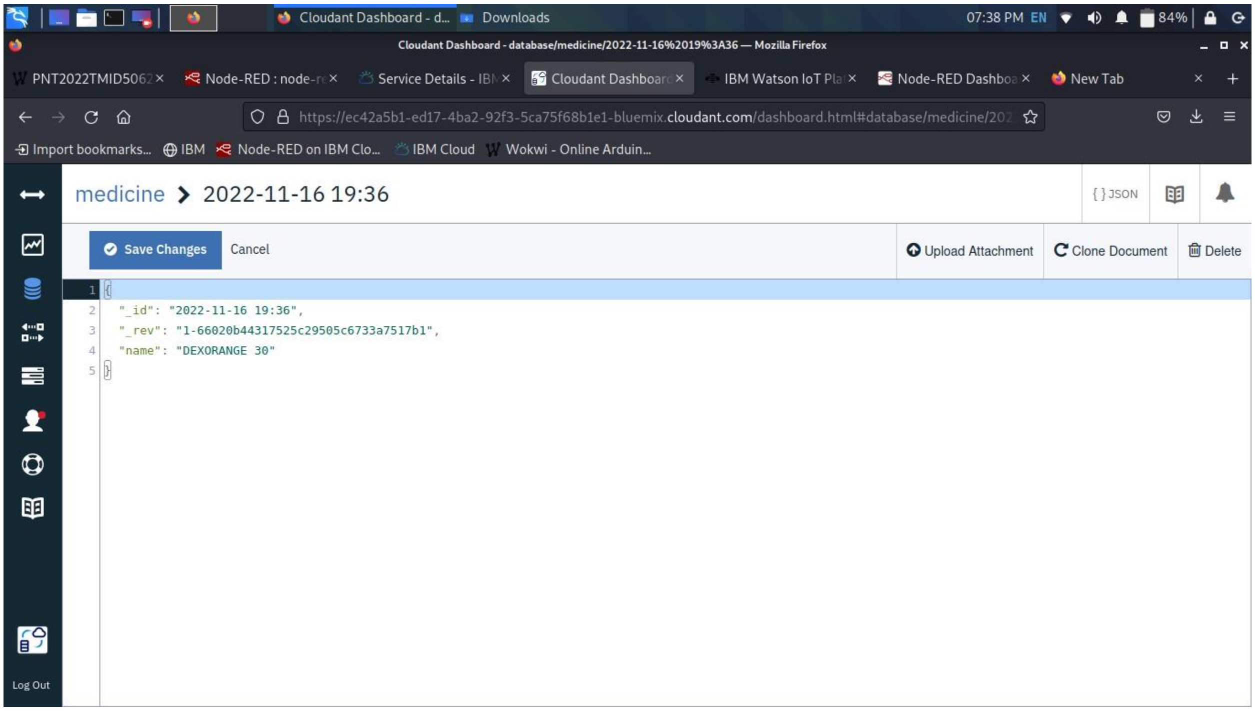

```
Reconnecting client to 1l6lvg.messaging.internetofthings.ibmcloud.com
iot-2/cmd/command/fmt/String
subscribe to cmd OK

callback invoked for topic: iot-2/cmd/command/fmt/String
Medicine Name: DEXORANGE 30
```

Medicine details added to the IBM cloud:



```
{
  "_id": "2022-11-16 19:36",
  "_rev": "1-66020b44317525c29505c6733a7517b1",
  "name": "DEXORANGE 30"
}
```