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SPRINT-1

Date	29 oct 2022
Team ID	PNT2022TMID43463
Project Name	Smart waste management system
Points	20

```
#include <WiFi.h>
#include <PubSubClient.h>
#include<Servo.h>


void callback(char* subscribetopic, byte* payload, unsigned int payloadLength);



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



#define ORG "woaev0"//IBM ORGANITION ID

#define DEVICE_TYPE "abcde"//Device type mentioned in ibm watson IOT Platform
#define DEVICE_ID "112345"//Device ID mentioned in ibm watson IOT Platform
#define TOKEN "1a2b3c4d"
String data3;
float d,d1,w;



Servo Myservo;
int pos;
```

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```
#define trigpin    18

#define echopin    5



#define trigpin1 25

#define echopin1 33



//-------- 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/display/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




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

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);
  Serial.println();
```

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```
   pinMode(trigpin, OUTPUT);
  pinMode(echopin, INPUT);
  Myservo.attach(26);
  pinMode(trigpin1, OUTPUT);
  pinMode(echopin1, INPUT);


  wificonnect();
  mqttconnect();
}



void loop()// Recursive Function

{



   digitalWrite(trigpin1,LOW);
  digitalWrite(trigpin1,HIGH);
  delayMicroseconds(10);
  digitalWrite(trigpin1,LOW);
  float duration=pulseIn(echopin1,HIGH);
  d1=(duration/(58*4));
  if(d1<20){
    Myservo.write(180);
    delay(15);
    Serial.println("Putin waste here");

  }
```

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```
  else{
    Myservo.write(0);
  }
```

```
  digitalWrite(trigpin,LOW);
  digitalWrite(trigpin,HIGH);
  delayMicroseconds(10);
  digitalWrite(trigpin,LOW);
 float dura=pulseIn(echopin,HIGH);
  d=(dura/(58*4));
```

```
w=random(5,100);
String s="Kinathukadavu,Coimbatore";
String status="";
  Serial.print("WasteLevel:");
  Serial.println(d);
  Serial.print("WasteWeight:");
  Serial.println(w);
  Serial.println("Location:");
  Serial.println(s);
```

```
  PublishData(d, w);
  delay(1000);
  if (!client.loop()) {
    mqttconnect();
```

```
  }
}
```

```
/*.....................................retrieving to
Cloud. ............................. */
```

```
void PublishData(float dis, float wei) {
  mqttconnect();//function call for connecting to ibm
  /*
     creating the String in in form JSon to update the data to ibm cloud
  */
  String status="";

  String payload = "{\"DustbinContent\":";
  payload += dis;
  payload += "," "\"WateWeight\":";
  payload += wei;
  payload += "," "\"Location\":";
  payload += "\"Kinathukadavu,Coimbatore\"";
  payload += "}";

  Serial.print("Sending payload: ");
  Serial.println(payload);
```

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```
  if (client.publish(publishTopic, (char*) payload.c_str())) {

    Serial.println("Publish ok");// if it sucessfully upload data on the cloud
then it will print publish ok in Serial monitor or else it will print publish
failed

  } else {

    Serial.println("Publish failed");

  }


}




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
```

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```
{
  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)
```

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```
{


  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("data: "+ data3);
  if(data3=="lighton")
  {

Serial.println(data3);

  }



data3="";

}
```

Link :https://wokwi.com/projects/348308160332694100

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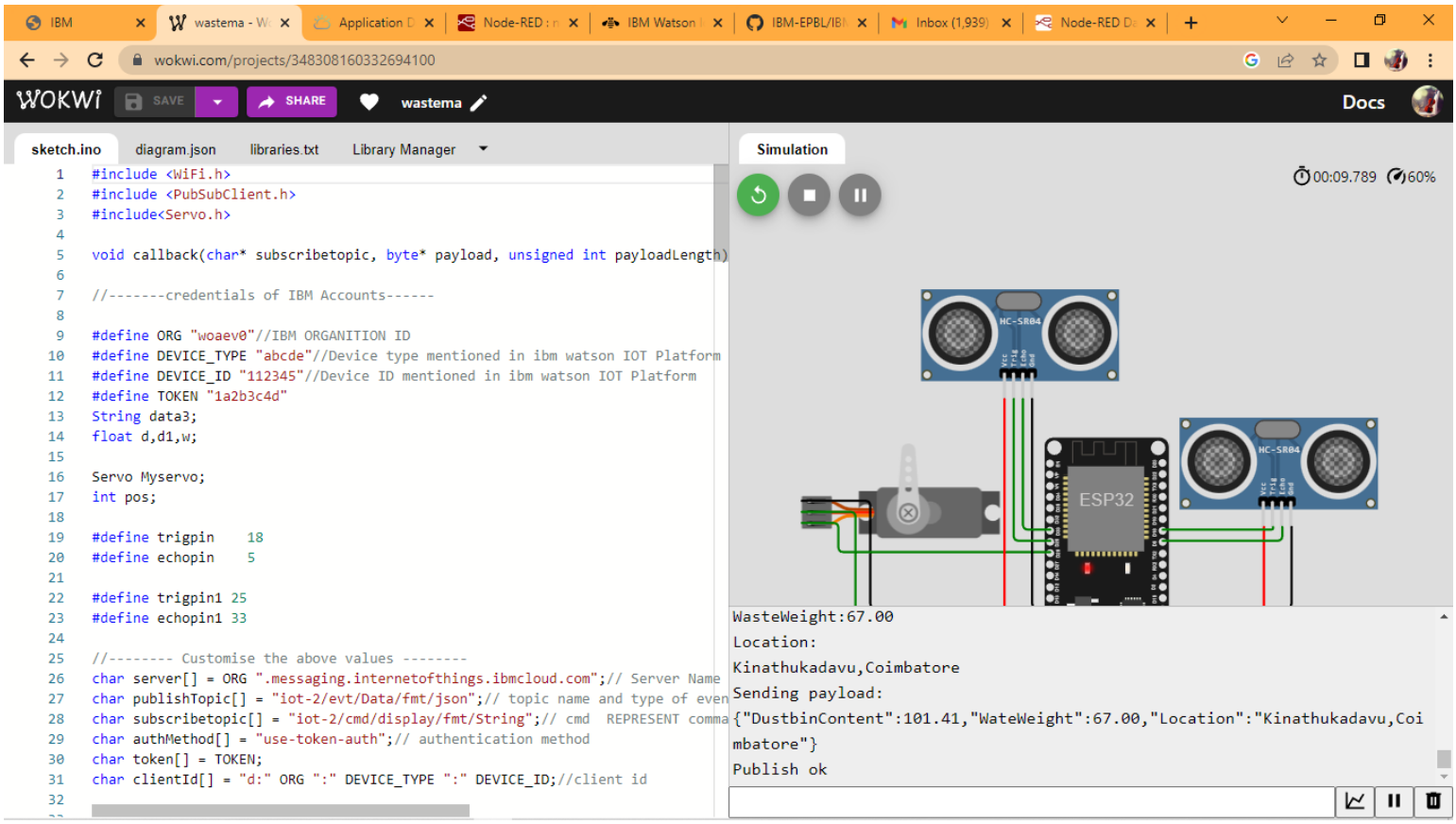
wokwi.com/projects/348308160332694100
WOKWI
SAVE
SHARE
wastema
Docs
sketch.ino
diagram.json
libraries.txt
Library Manager
#include <WiFi.h>
#include <PubSubClient.h>
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void callback(char* subscribetopic, byte* payload, unsigned int payloadLength)
//-------credentials of IBM Accounts------
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Servo Myservo;
int pos;
#define trigpin 18
#define echopin 5
#define trigpin1 25
#define echopin1 33
//-------- 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 even
char subscribetopic[] = "iot-2/cmd/display/fmt/String";// cmd REPRESENT comma
char authMethod[] = "use-token-auth";// authentication method
char token[] = TOKEN;
char clientId[] = "d:" ORG ":" DEVICE_TYPE ":" DEVICE_ID;//client id
Simulation
00:09.789
60%
HC-SR04
ESP32
HC-SR04
WasteWeight:67.00
Location:
Kinathukadavu,Coimbatore
Sending payload:
{"DustbinContent":101.41,"WateWeight":67.00,"Location":"Kinathukadavu,Coi
mbatore"}
Publish ok

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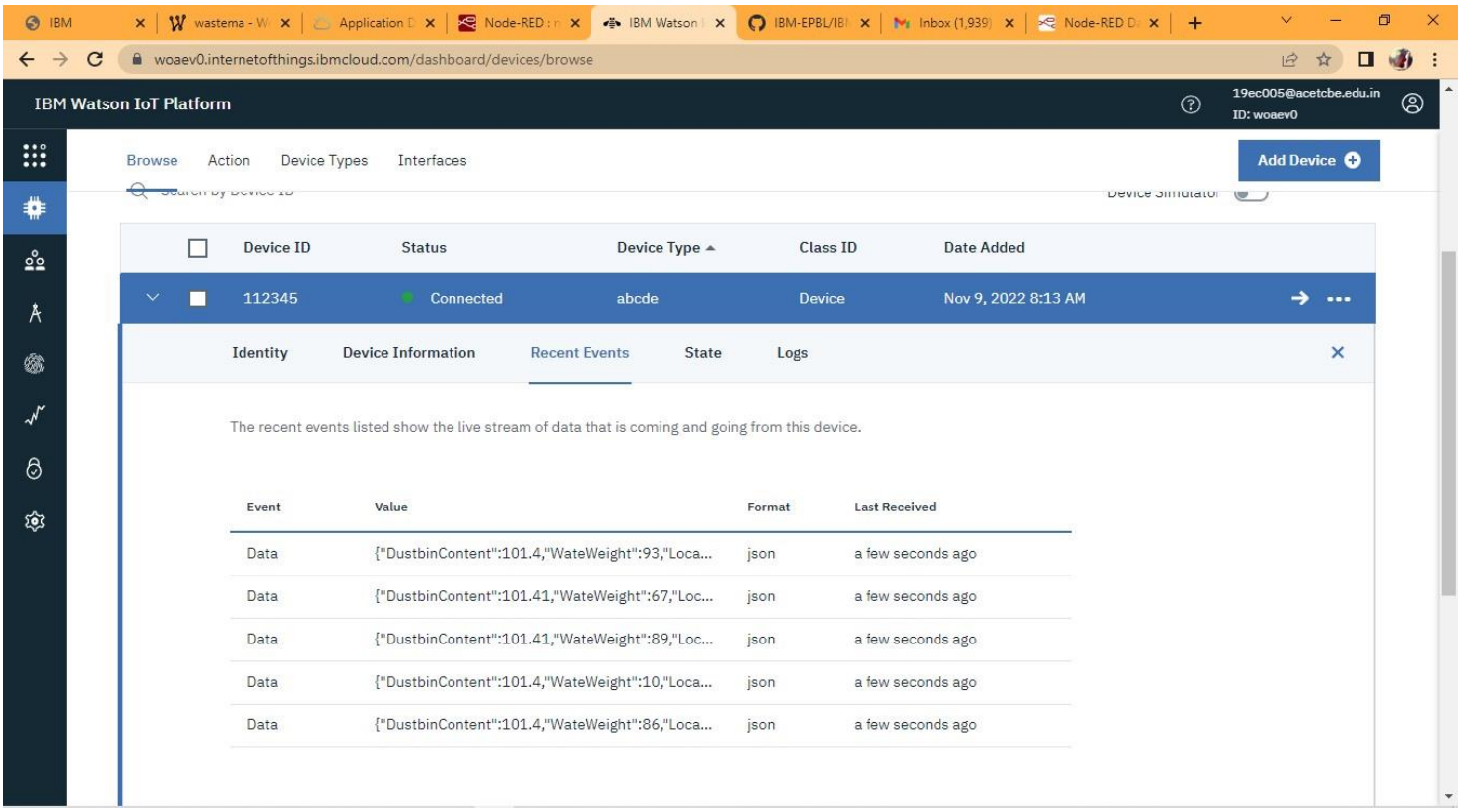
IBM Watson IoT Platform
19ec005@acetcbe.edu.in
ID: woaev0
Browse
Action
Device Types
Interfaces
Add Device
Device ID
Status
Device Type
Class ID
Date Added
112345
Connected
abcde
Device
Nov 9, 2022 8:13 AM
Identity
Device Information
Recent Events
State
Logs
The recent events listed show the live stream of data that is coming and going from this device.
Event
Value
Format
Last Received
Data
{"DustbinContent":101.4,"WateWeight":93,"Loca...
json
a few seconds ago
Data
{"DustbinContent":101.41,"WateWeight":67,"Loc...
json
a few seconds ago
Data
{"DustbinContent":101.41,"WateWeight":89,"Loc...
json
a few seconds ago
Data
{"DustbinContent":101.4,"WateWeight":10,"Loca...
json
a few seconds ago
Data
{"DustbinContent":101.4,"WateWeight":86,"Loca...
json
a few seconds ago