# Delivery of Sprint 2

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| Team ID | PNT2022TMID11663 |
| Date | 19 November 2022 |
| Project Title | IoT Based SafetyGadget for Child Safety Monitoringand Notification |

Code:

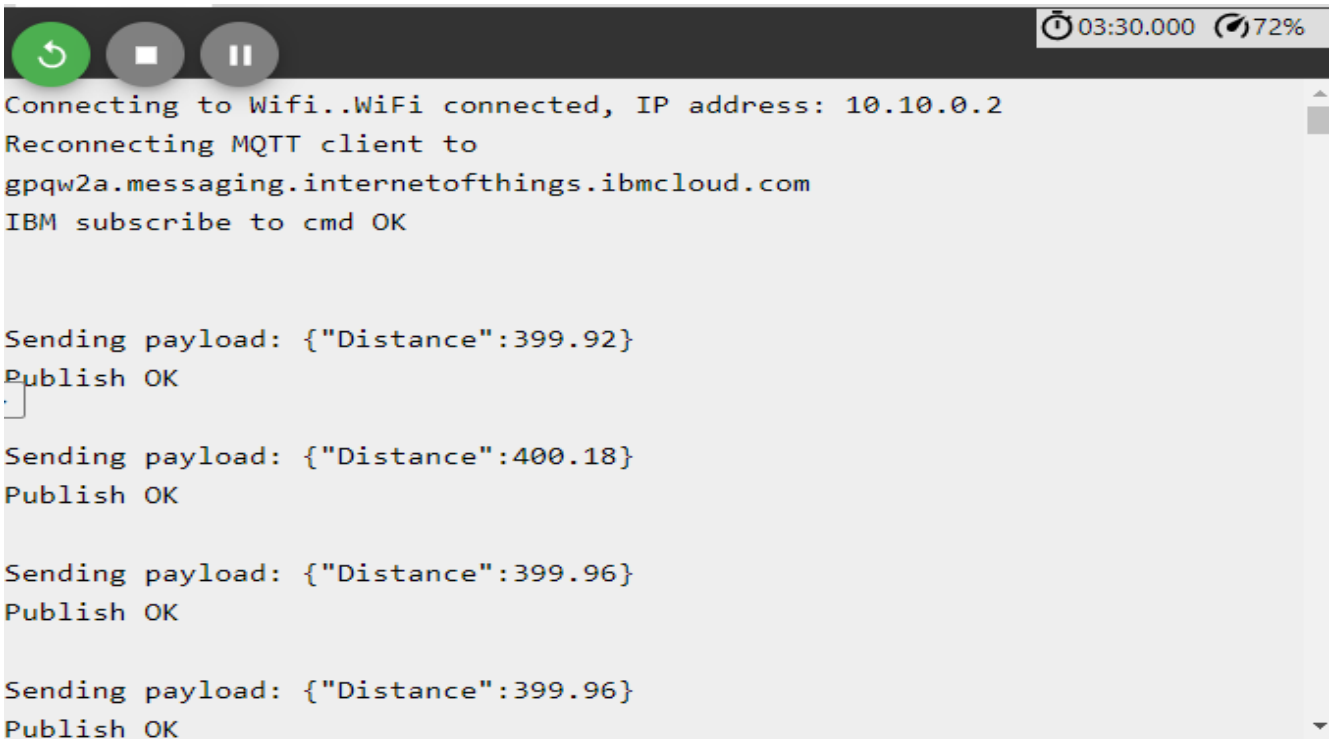
```
include<WiFi.h>//library for wifi #include
<PubSubClient.h>//libr ary for MQTT
void callback(char* subscribetopic, byte* payload,unsigned int payloadlength);
//---------------credentials of IBM Account
#define ORG "45z3o2"// IBM ORGANIZATION ID
#define DEVICE_TYPE "ESP32_Controller"//DEVICE TYPE MENTIONED IN IOT WATSON PLATFORM #define DEVICE_ID "bme2"//DEVICE ID
MENTIONED IN IOT WATSON PLATEFORM
#define TOKEN
"OKZ+q@JfPWDOd6wBTj"//Token String data3;
float dist;
//------------customize the above value
char server[]=ORG ".messaging.internetofthings.ibmcloud.com";//server name char
publishtopic[]="ultrasonic/evt/Data/fmt/json";/*topic name and type of event performand format in which data to be send*/
char subscribetopic[]="ultrasonic/cmd/test/fmt/Strin g";/*cmd REPRESENT Command tupe 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 an instance for wificlient PubSubClient client(server, 1883 , callback ,
wifiClient);/*calling the predefined client idby
passing parameter like server id,portand wificredential*/
int LED =4;
int trig =5;
```

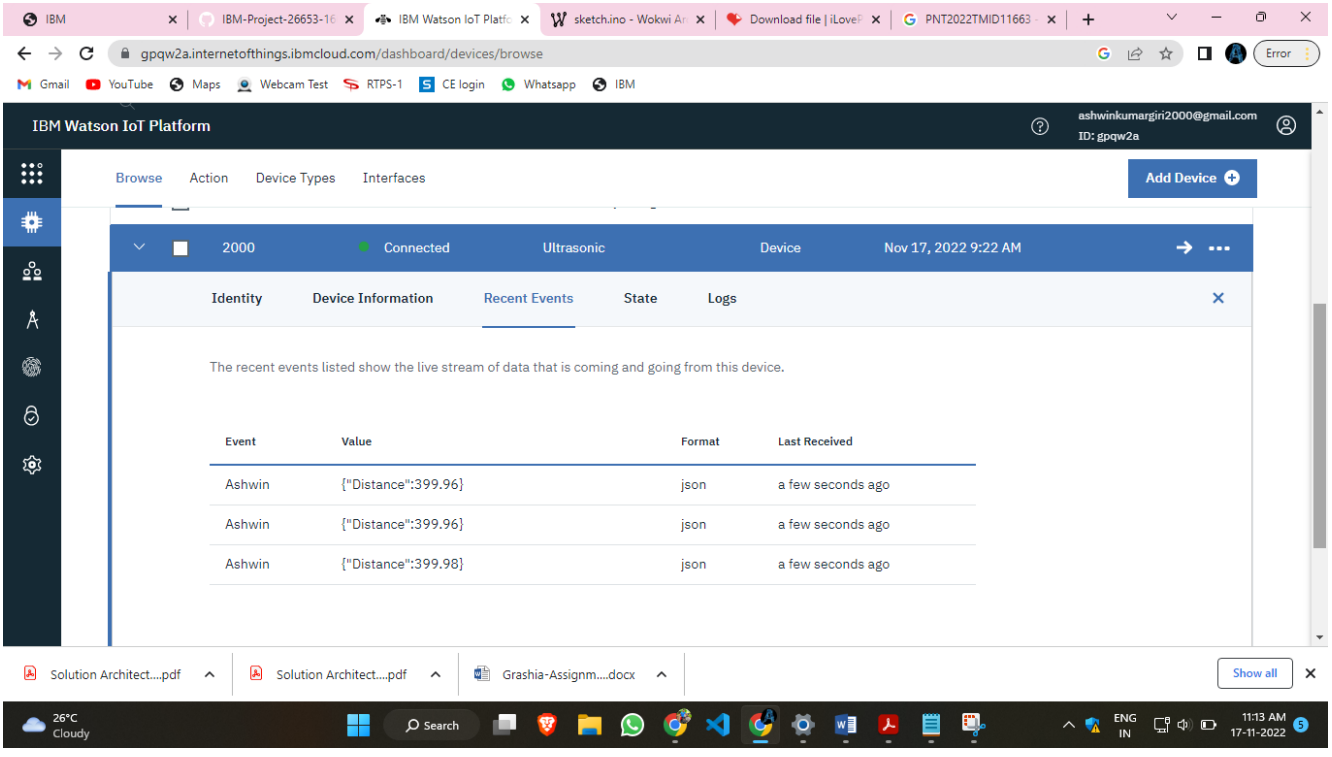
```
int echo=18; void setup()
{
Serial.begin (115200);
pinMode(tri g,OUTPUT);
pinMode(echo, INPUT);
pinMode(LED,OUT
PUT);
delay(10); Serial.printl n(); wificonnect(); mqttconnect();
}
void loop() { digitalWrite(t rig,LOW); digitalWrite(t rig,HIGH); delayMicrosecon ds(10); digitalWrite(t rig,LOW); float dur=pulseIn(echo, HIGH); float  dist=(dur *
0.0343)/2;
Serial.print("dis tance in cm"); Serial.println(di st); PublishData(dist)
; delay(1000); if (!client.loop())
{
mqttconnect();
}
}

/*.      retrivi
ng      to      cloud
        */
void PublishData(float dist){ mqttconnect();//function call  for  connecting  to  ibm
/*creating the string in form of JSON to update the data to ibm cloud*/String object;

if(dist<100)

{
digitalWrite(LED,HIGH);
Serial.println("no object is near"); object="Near";
} else
{
digitalWrite(LED,LOW);
Serial.println("no object found");
object="No";
}

String payload="{\"dista nce\":"; payload +=dist;
payload +="," "\"object\":\""; payload += object;
payload += "\"}";
Serial.print("Sending payload:  ");
Serial.println(payload);
```

```
if(client.publish(publishtopic,  (char*)  payload.c_str())){
Serial.println("Publish ok");/* if its  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(clie ntid,authMethod, token)){
Serial.print(". ");
delay(500);

} initManagedDevice();
Serial.println();
}

}
void wificonnect()//function defenition for  wificonnect

{

Serial.println();
Serial.print("Connecting to ");

WiFi.begin("vivo  1816",  "taetae95",6);//PASSING  THE  WIFI  CREDIDENTIALS  TO  ESTABLISH  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((subscribetop ic)); 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(subsc
ribetopic); for(int

i=0;  i<  payloadLength; i++){
//Serial.print((ch ar)payload[i]); data3
+=(char)payload[i];
}
//Serial.println("dta: "+ data3);
//if(data3=="Near")
//{

//Serial.println(data3);

//digitalWrite(LED,HIGH);

//}

//else //{
//Serial.println(data3);
//digitalWrite(LED, LOW);//} data3="";
}
```

# Output:


03:30.000
72%
Connecting to Wifi..WiFi connected, IP address: 10.10.0.2
Reconnecting MQTT client to
gpqw2a.messaging.internetofthings.ibmcloud.com
IBM subscribe to cmd OK
Sending payload: {"Distance":399.92}
Publish OK
Sending payload: {"Distance":400.18}
Publish OK
Sending payload: {"Distance":399.96}
Publish OK
Sending payload: {"Distance":399.96}
Publish OK


gpqw2a.internetofthings.ibmcloud.com/dashboard/devices/browse
IBM Watson IoT Platform
ashwinkumargiri2000@gmail.com
ID: gpqw2a
Browse
Action
Device Types
Interfaces
Add Device
2000
Connected
Ultrasonic
Device
Nov 17, 2022 9:22 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
Ashwin
{"Distance":399.96}
json
a few seconds ago
Ashwin
{"Distance":399.96}
json
a few seconds ago
Ashwin
{"Distance":399.98}
json
a few seconds ago
Solution Architect....pdf
Solution Architect....pdf
Grashia-Assignm....docx
Show all
26°C
Cloudy
Search
ENG
IN
11:13 AM
17-11-2022