Assignment -4

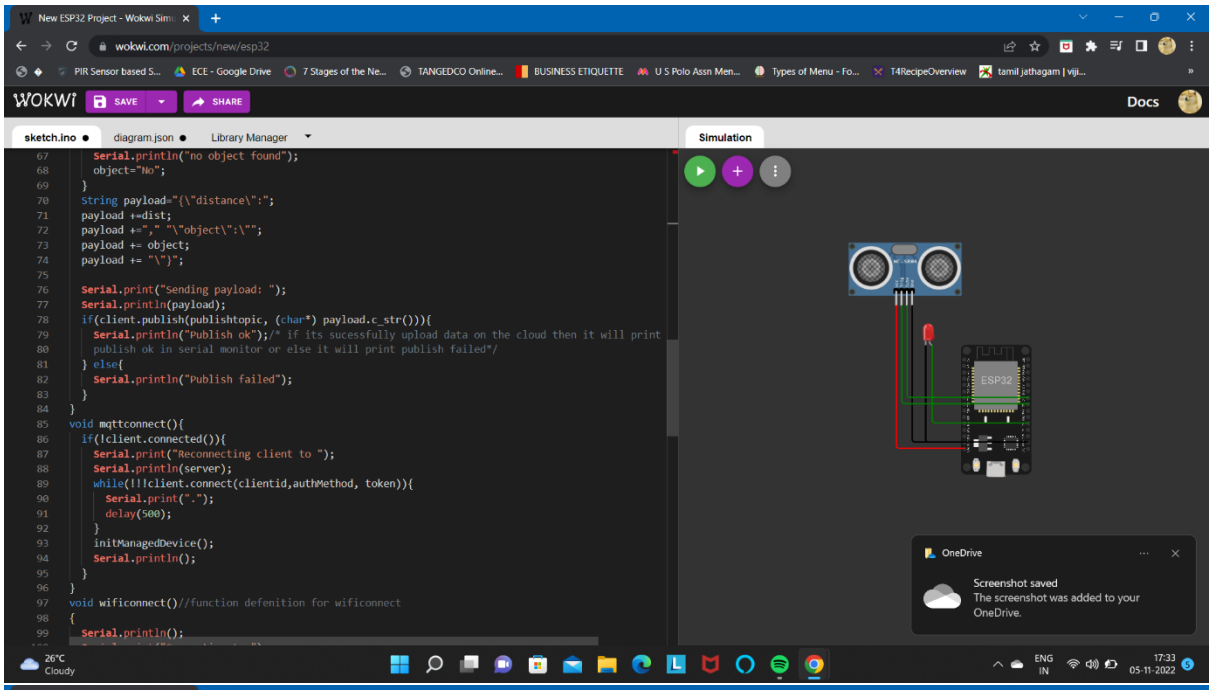
NAME	Arun R
TEAM ID	PNT2022TMID25961
Project	Real-Time River Water Quality Monitoring and Control System

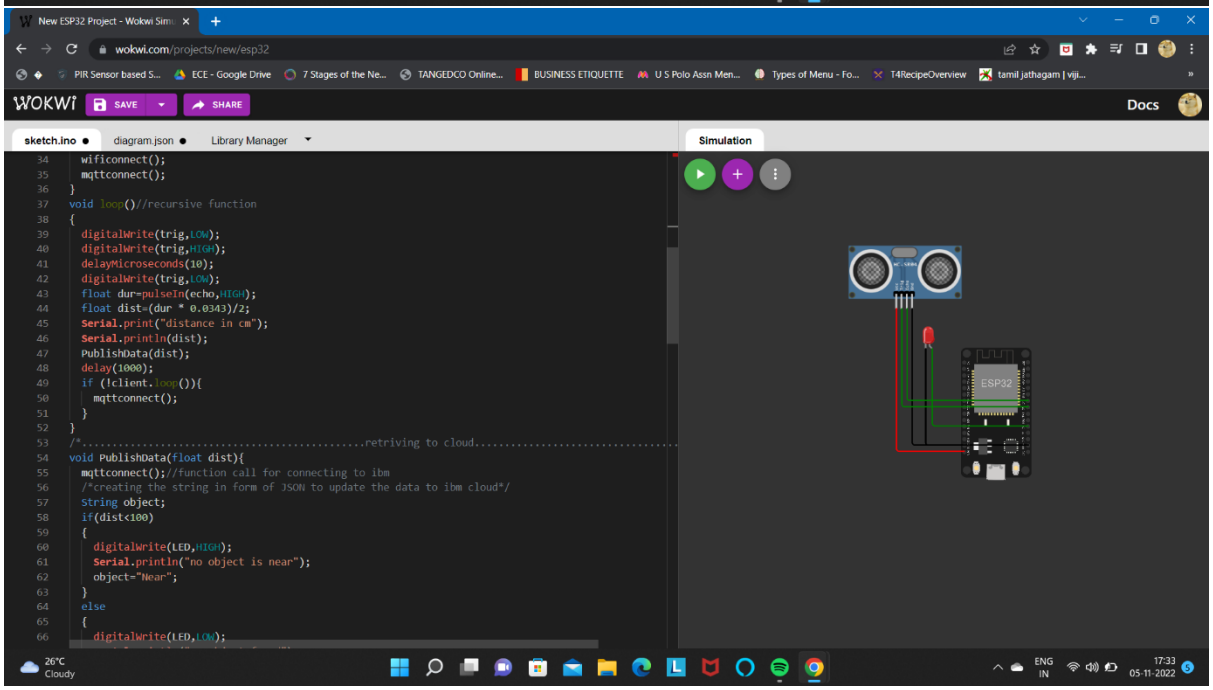
Question:

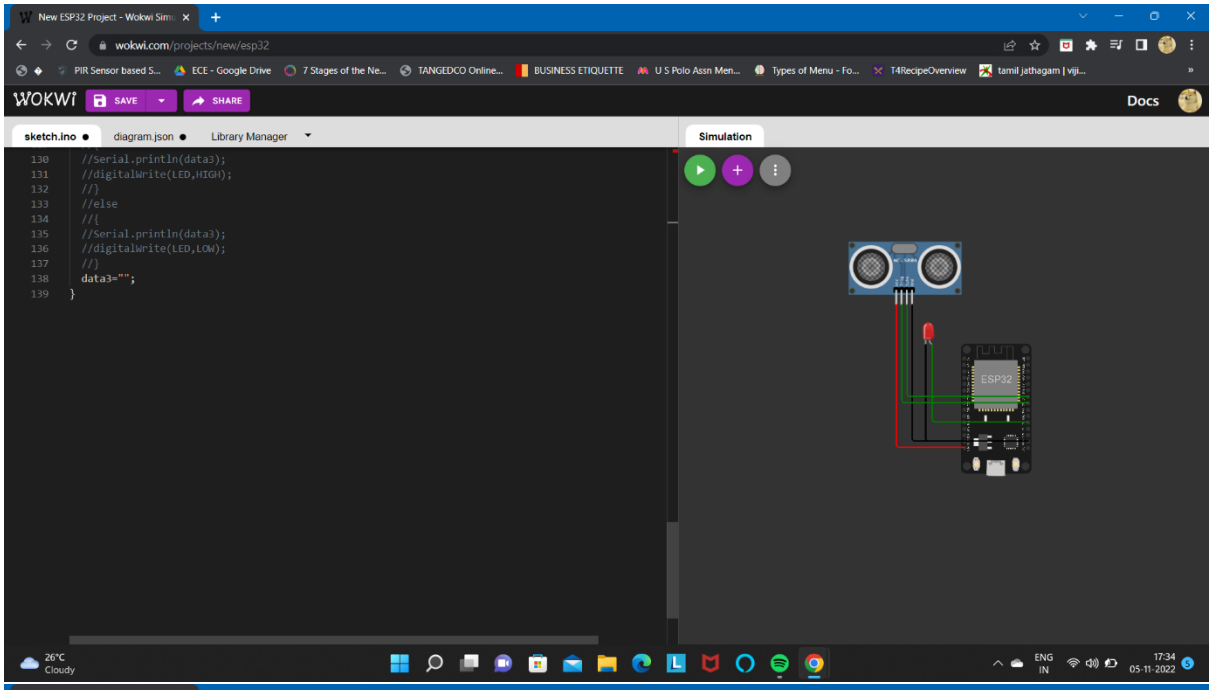
Write code and connections in wokwi for ultrasonic sensor.

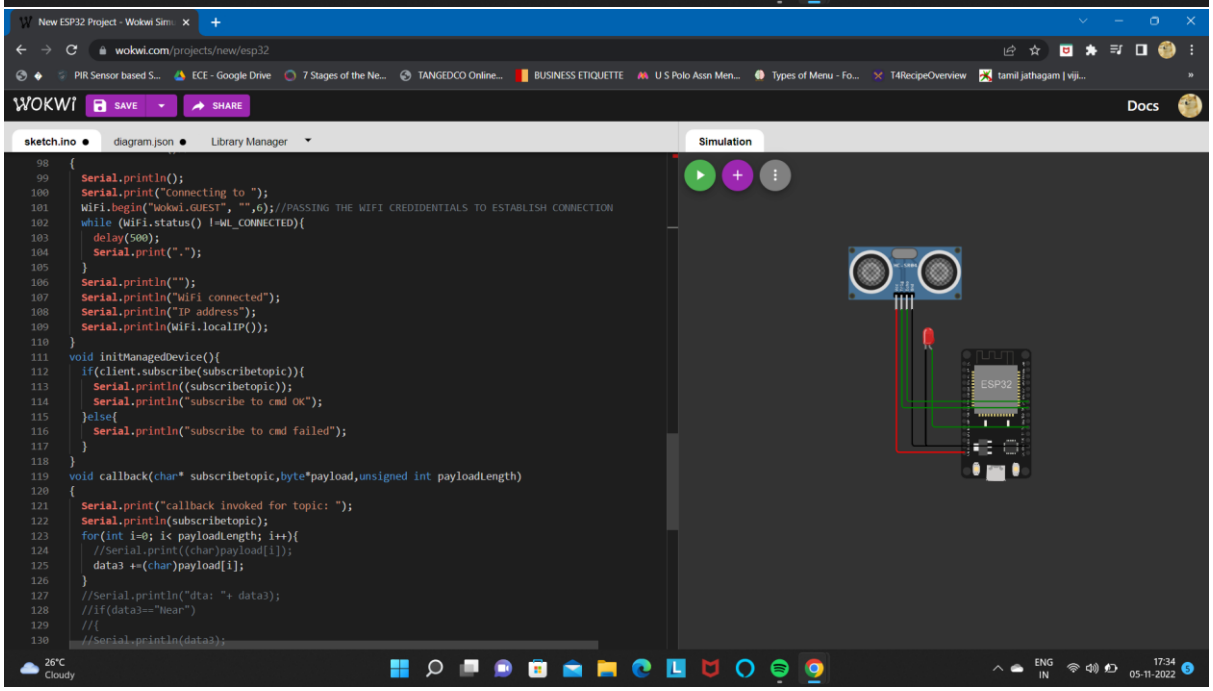
Whenever distance is less than 100 cms send "alert" to ibm cloud and display in device recent events.

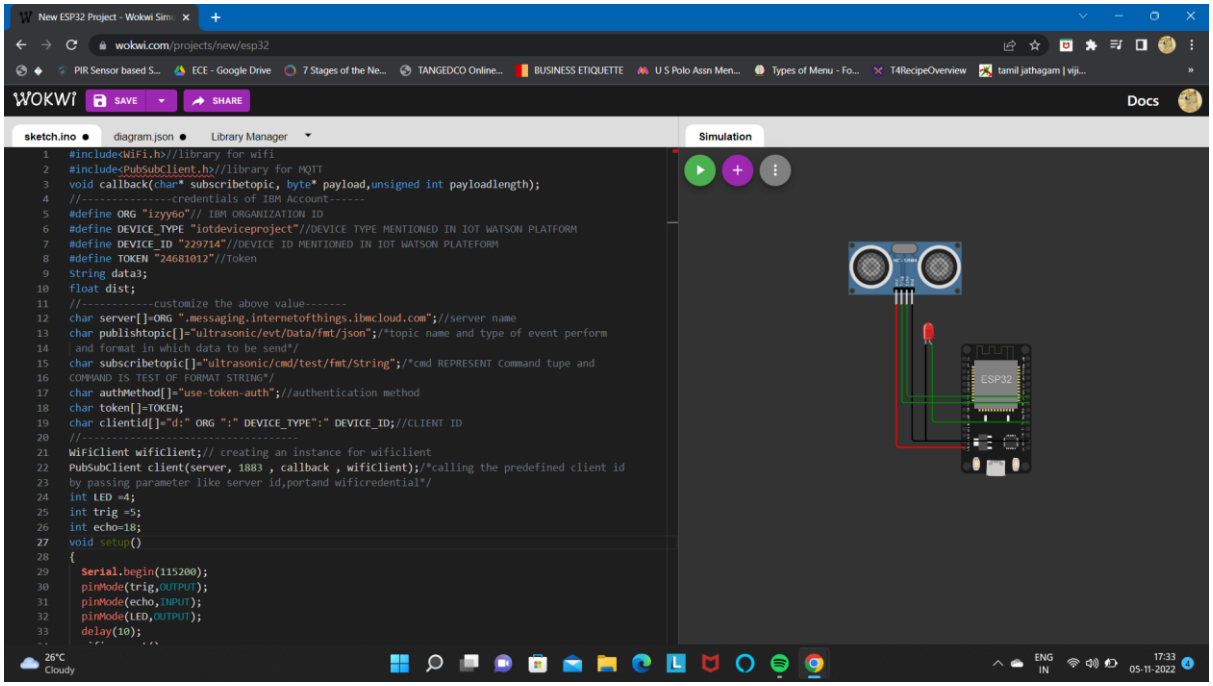
Upload document with wokwi share link and images of ibm cloud





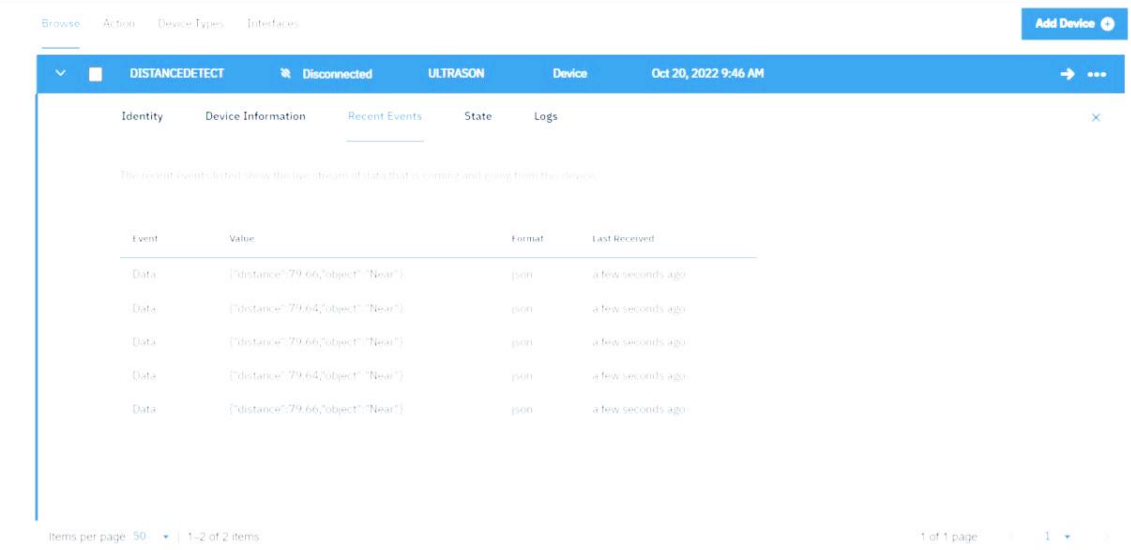

New ESP32 Project - Wokwi Sim
wokwi.com/projects/new/esp32
WOKWI
SAVE
SHARE
Docs
sketch.ino
diagram.json
Library Manager
Simulation
//Serial.println(data3);
//digitalWrite(LED,HIGH);
//}
//else
//{
//Serial.println(data3);
//digitalWrite(LED,LOW);
//}
data3="";
}
ESP32
26°C
Cloudy
ENG
IN
17:34
05-11-2022


New ESP32 Project - Wokwi Sim
wokwi.com/projects/new/esp32
WOKWI
SAVE
SHARE
Docs
sketch.ino
diagram.json
Library Manager
Simulation
{
Serial.println();
Serial.print("Connecting to ");
WiFi.begin("Wokwi.GUEST", "",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((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("dta: "+ data3);
//if(data3=="Near")
//{
//Serial.println(data3);
ESP32
26°C
Cloudy
ENG
IN
17:34
05-11-2022

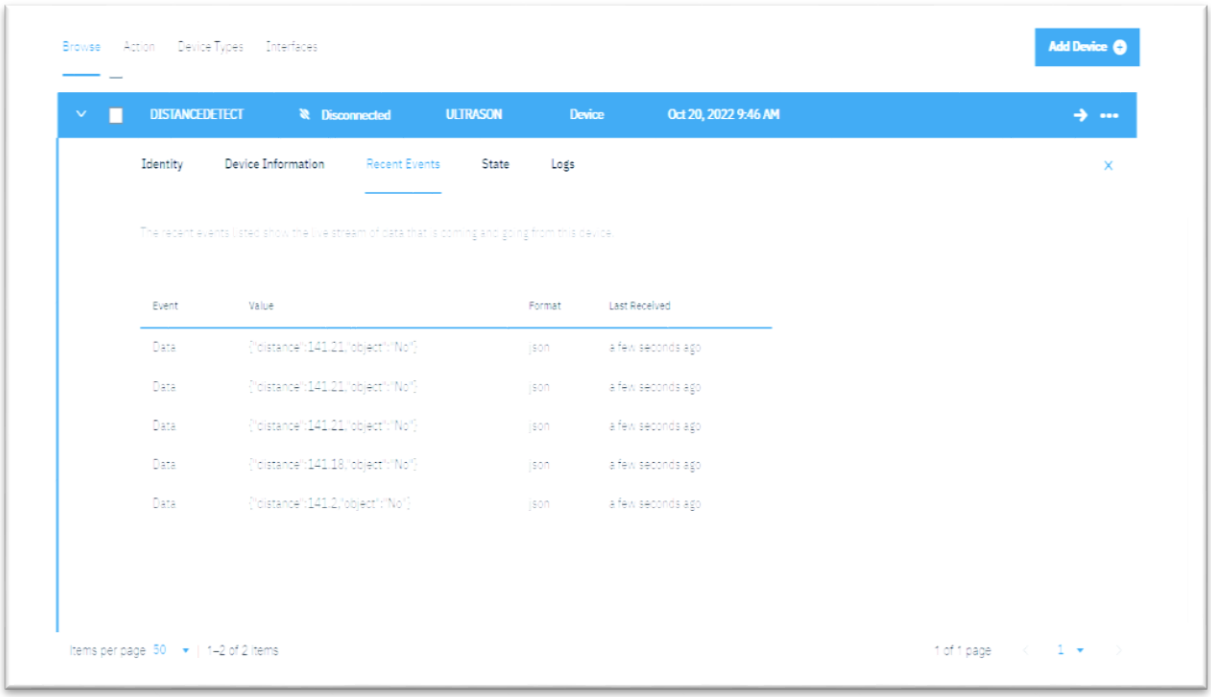



```ino
#include<WiFi.h>//library for wifi
#include<PubSubClient.h>//library for MQTT
void callback(char* subscribetopic, byte* payload,unsigned int payloadlength);
//---------------credentials of IBM Account------
#define ORG "izyy6o"// IBM ORGANIZATION ID
#define DEVICE_TYPE "iotdeviceproject"//DEVICE TYPE MENTIONED IN IOT WATSON PLATFORM
#define DEVICE_ID "229714"//DEVICE ID MENTIONED IN IOT WATSON PLATEFORM
#define TOKEN "24681012"//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 perform
and format in which data to be send*/
char subscribetopic[]="ultrasonic/cmd/test/fmt/String";/*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 id
by passing parameter like server id,portand wificredential*/
int LED =4;
int trig =5;
int echo=18;
void setup()
{
  Serial.begin(115200);
  pinMode(trig,OUTPUT);
  pinMode(echo,INPUT);
  pinMode(LED,OUTPUT);
  delay(10);
```

https://wokwi.com/projects/347489586971148882



Data sent to the IBM Cloud Device when the object is near



Data sent to the IBM Cloud Device when the object is far.