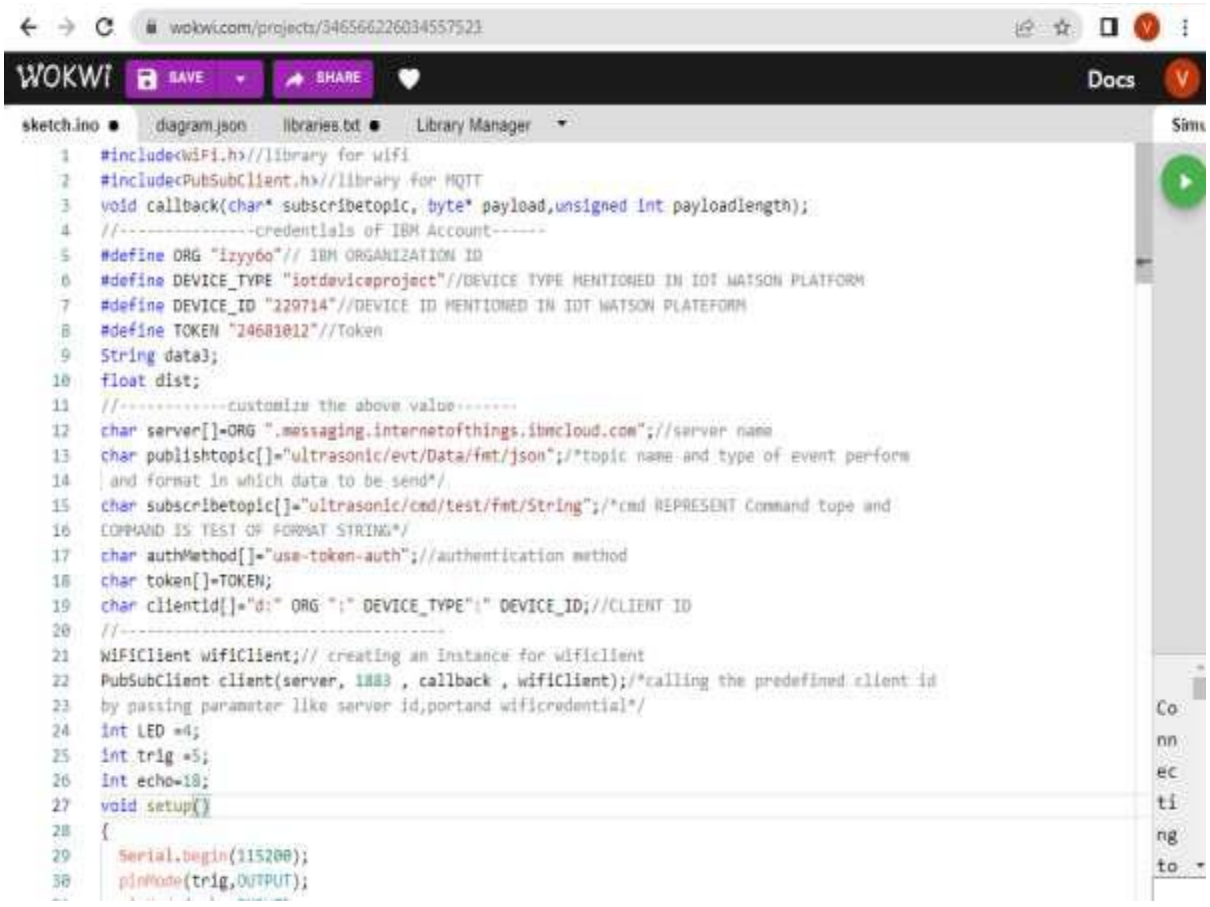
Assignment 4:

IOT Enabled Smart Farming Application"

Batch NO: B9-3A5E

Assignment 4:

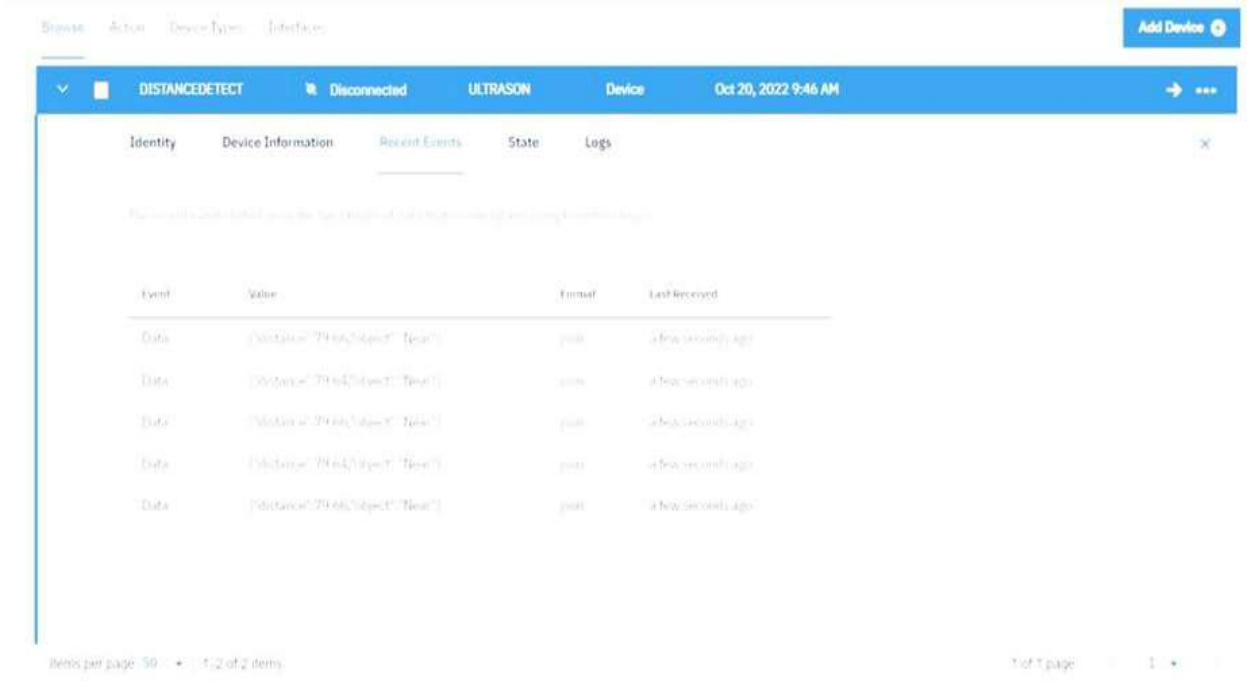
Write code and connections in wokwi for ultrasonic sensor. Whenever distance is less than 100 cms send "alert" to ibm cloud and display in device recent events. Upload document with wokwi share link and images of ibm cloud.



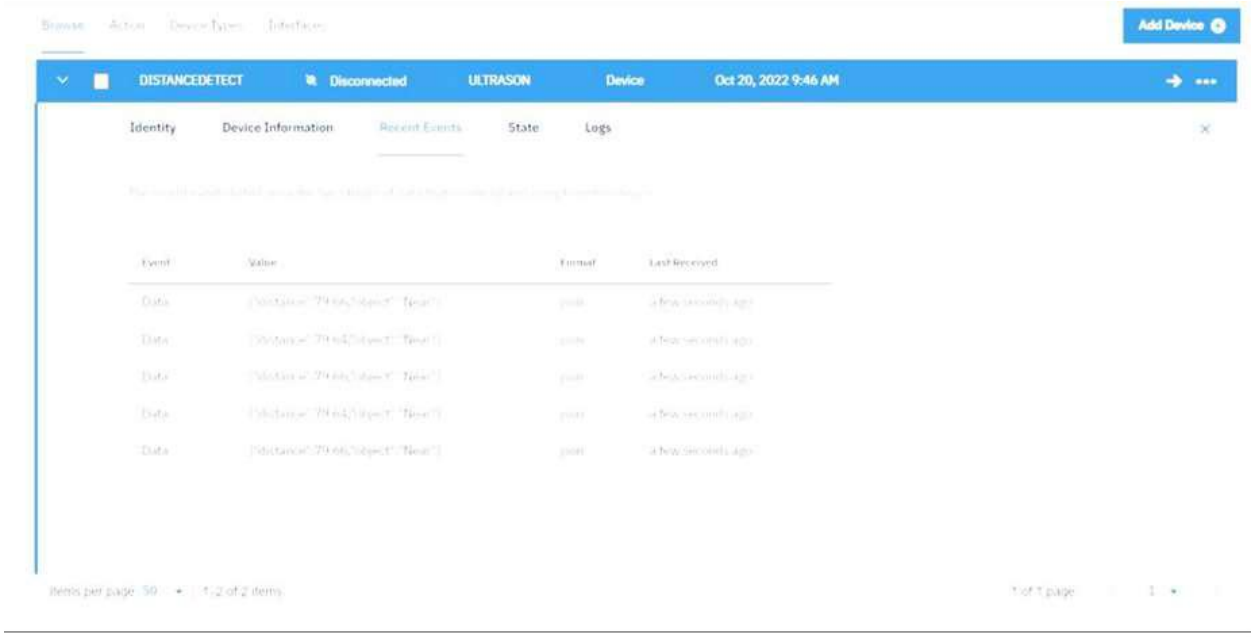
```
    Serial.println("no object is near");
    object="Near";
  }
  else
  {
    digitalWrite(LED,LOW);
    Serial.println("no object found");
    object="No";
  }
  String payload="{\"distance\":";
  payload +=dist;
  payload +="," "\"object\":\"";
  payload += object;
  payload += "\"}";

  Serial.print("Sending payload: ");
  Serial.println(payload);
  if(client.publish(publishtopic, (char*) payload.c_str())){
    Serial.println("Publish ok");/* if its successfully 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 definition for wificonnect
{
  Serial.println();
  Serial.print("Connecting to ");
  WiFi.begin("Wokwi-GUEST", "",6);//PASSING THE WIFI CREDENTIALS 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);
```

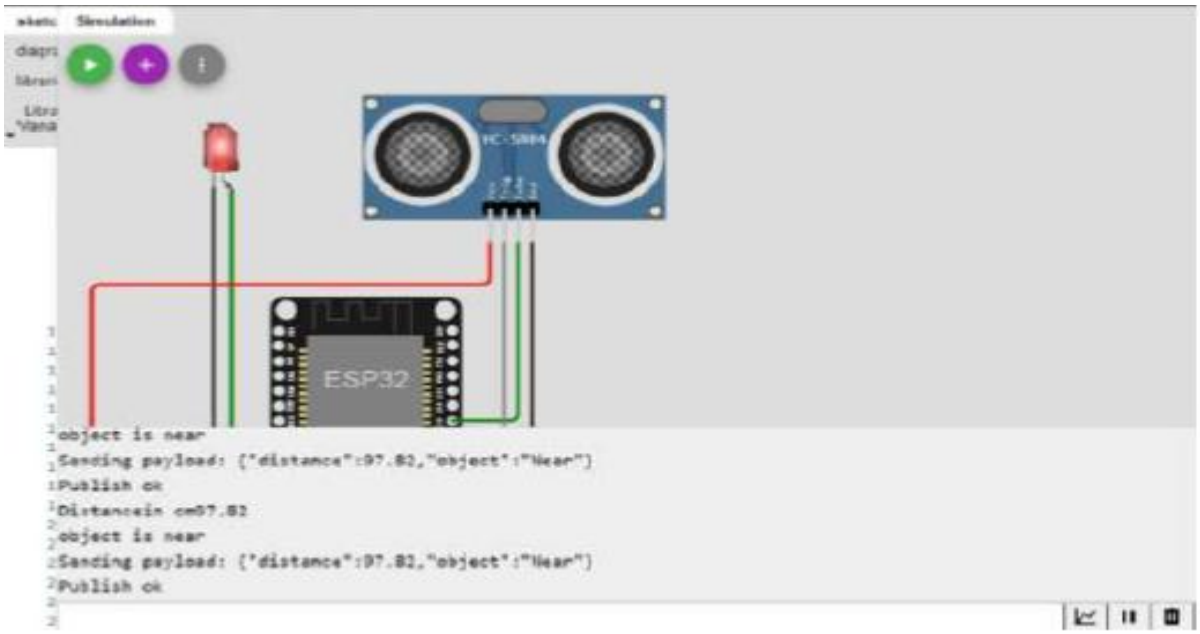
OUTPUT:
DATA IS SENT TO IBM CLOUD WHEN NO OBJECT IS DETECTED



When no object is detected



Circuit:



DONE BY

BATCH NO: B9-3A5E (917719D023, 917719D011, 917719D049, and 19D069)