Assignment – 4

Date	29 October 2022
Team ID	PNT2022TMID15872
Project Name	Smart Waste Management System For Metropolitan Cities
Maximum Marks	2 Marks

Question:

Write code and connections in wokwi for the ultrasonic sensor.

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

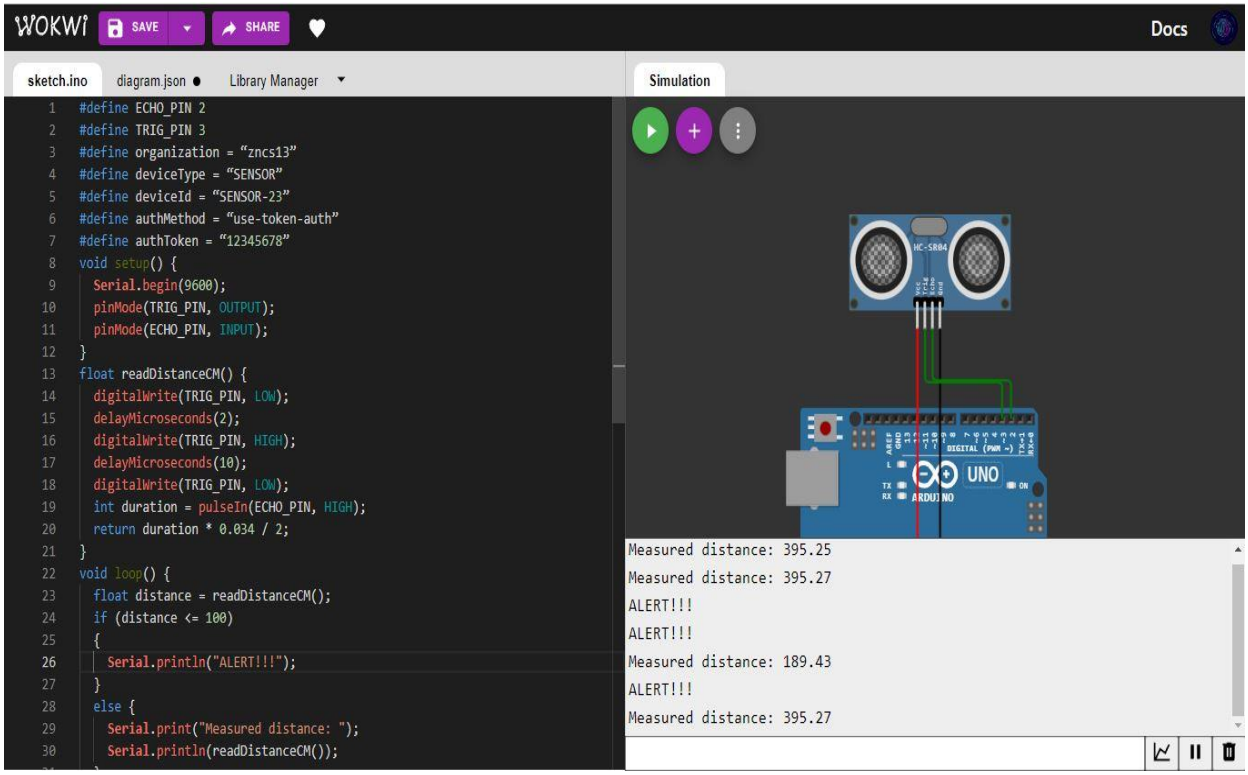
Upload document with wokwi share link and images of IBM cloud

Solution:

```
#define ECHO_PIN 2
#define TRIG_PIN 3
#define organization = “zncs13”
#define deviceType = “SENSOR”
#define deviceId = “SENSOR-23”
#define authMethod = “use-token-auth”
#define authToken = “12345678”
void setup()
{
  Serial.begin(9600);
  pinMode(TRIG_PIN, OUTPUT);
  pinMode(ECHO_PIN, INPUT);
}
float readDistanceCM()
{
  digitalWrite(TRIG_PIN, LOW);
  delayMicroseconds(2);
  digitalWrite(TRIG_PIN, HIGH);
  delayMicroseconds(10);
  digitalWrite(TRIG_PIN, LOW);
  int duration = pulseIn(ECHO_PIN, HIGH);
  return duration * 0.034 / 2;
}
void loop()
{
  float distance = readDistanceCM();
```

```
  if (distance <= 100)
  {
    Serial.println("Alert!!");
  }
  else
{
    Serial.print("Measured distance: ");
    Serial.println(readDistanceCM());
  }
  delay(1000);
}
```

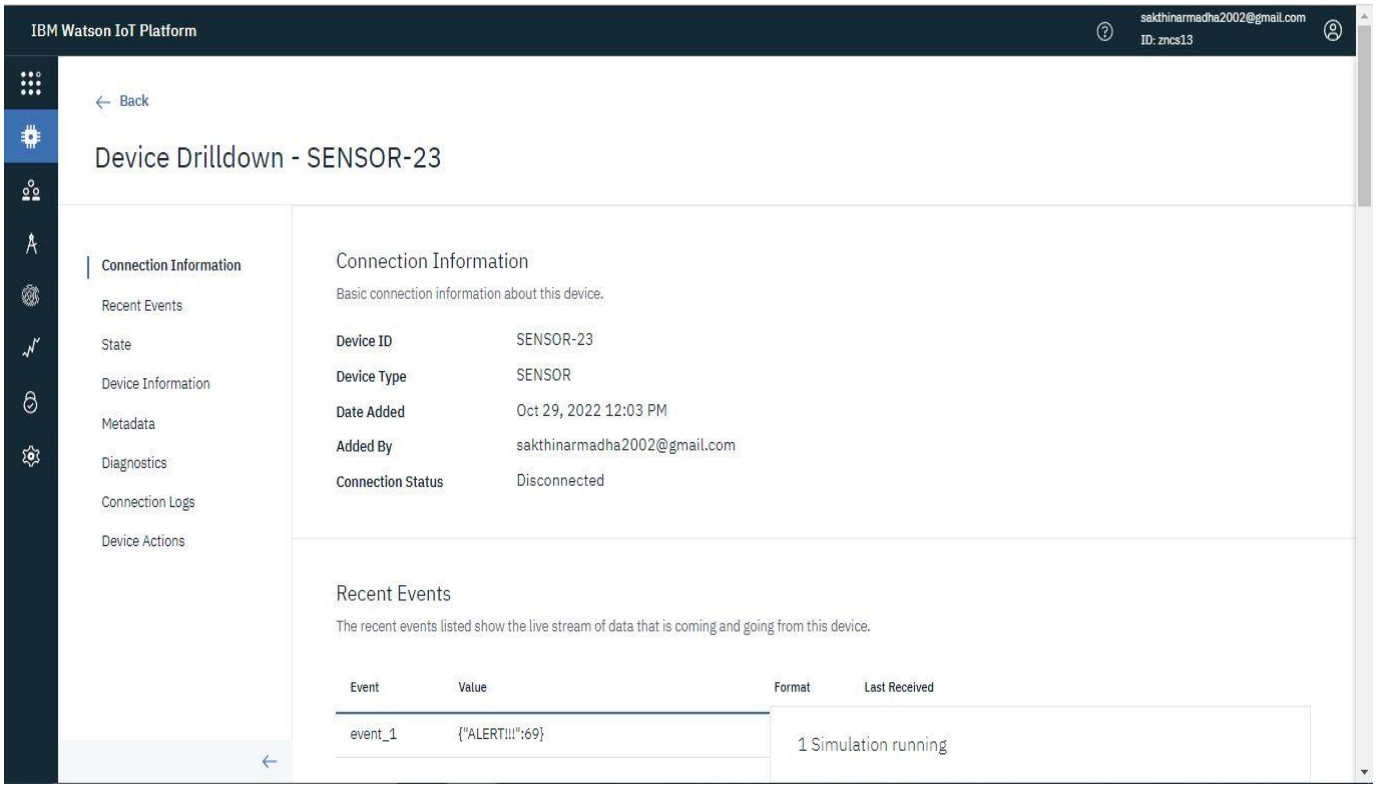
Simulation Output:



Wokwi Share Link

https://wokwi.com/projects/347139253809971794

IBM Cloud Device Details:



IBM Cloud Device Recent Events