Assignment -4

ULTRASONIC SENSOR

Assignment Date	29 October 2022
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Student Roll Number	412519106110
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

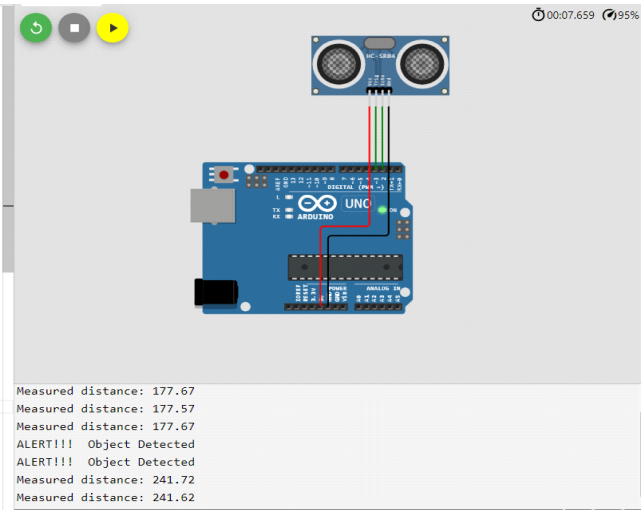
SOLUTION:

```
#define ECHO_PIN 2
#define TRIG_PIN 3
#define organization = “x0cl0i”
#define deviceType = “ultrasonicsensor”
#define deviceId = “ultrasonic_sensor”
#define authMethod = “use-token-auth”
#define authToken = “yfZ@HoxcWNUv3ZePkK”
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!!!  Object Detected");
}
else
{
Serial.print("Measured distance: ");
Serial.println(readDistanceCM());
}
delay(1000);
}
```

SIMULATION OUTPUT :

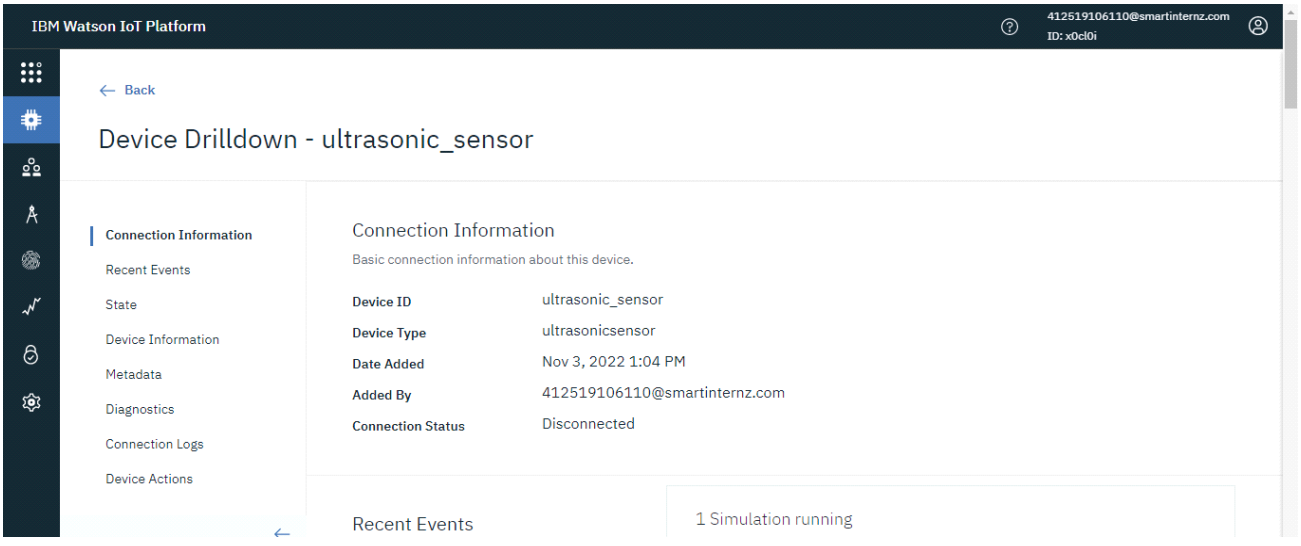
```
#define ECHO_PIN 2
#define TRIG_PIN 3
#define organization = "x0cl0i"
#define deviceType = "ultrasonicsensor"
#define deviceId = "ultrasonic_sensor"
#define authMethod = "use-token-auth"
#define authToken = "yfZ@HoxcWNUv3ZePkK"
void setup()
{
Serial.begin(9600);
pinMode(TRIG_PIN, OUTPUT);
pinMode(ECHO_PIN, 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!!!  Object Detected");
}
else
{
Serial.print("Measured distance: ");
Serial.println(readDistanceCM());
}
delay(1000);
```



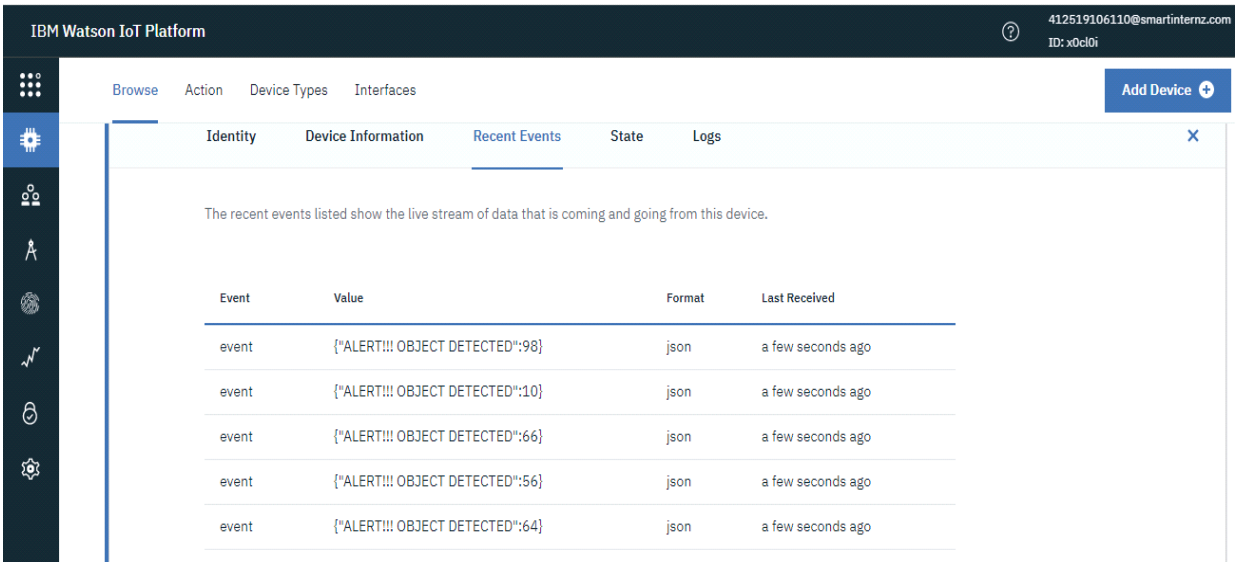
WOKWI SHARE LINK:

https://wokwi.com/projects/347291092185514580

IBM CLOUD DEVICE DETAILS :



IBM CLOUD DEVICE RECENT EVENTS:



LINE CHART OF IBM CLOUD DEVICE: