

## **ASSIGNMENT – 4**

Team ID	PNT2022TMID15172
Project Name	Project : Smart Waste Management System For Metropolitan Cities

### **TEAM MEMBERS:**

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- VASANTHAN V
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### **Assignment 4:**

**Write code and connections in wokwi for the ultrasonic sensor.**

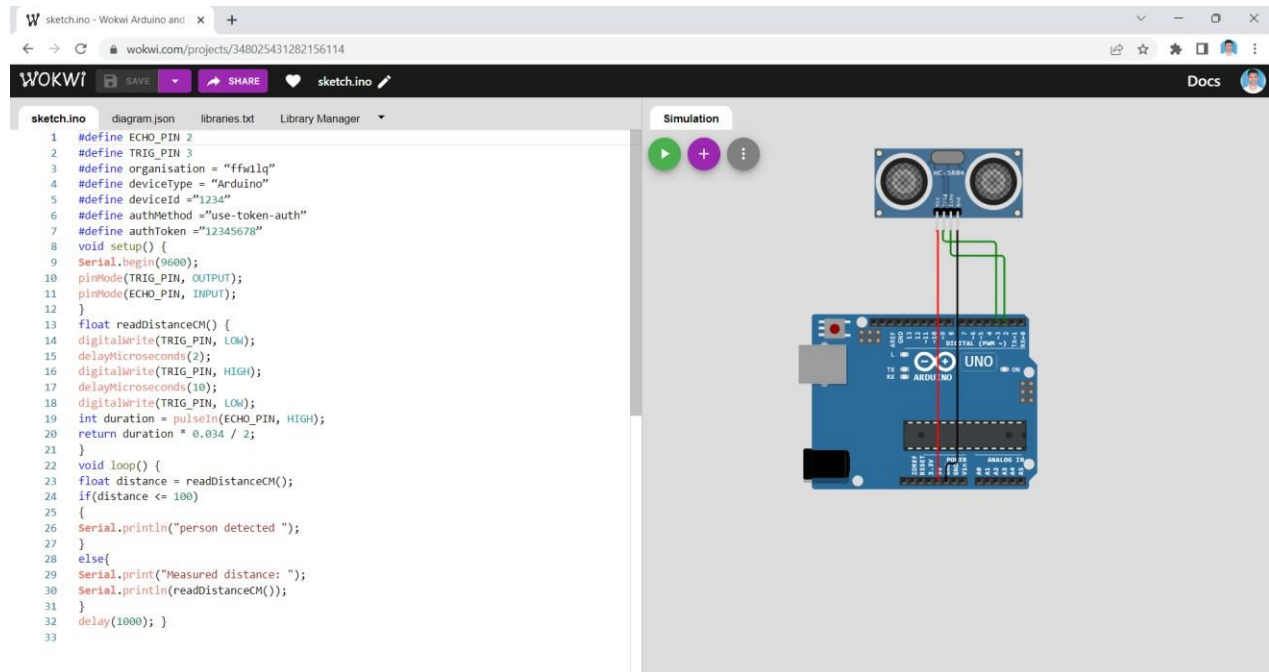
**Whenever the distance is less than 100 cms send an "alert" to the IBM cloud and display in the device recent events.**

### **CODE:**

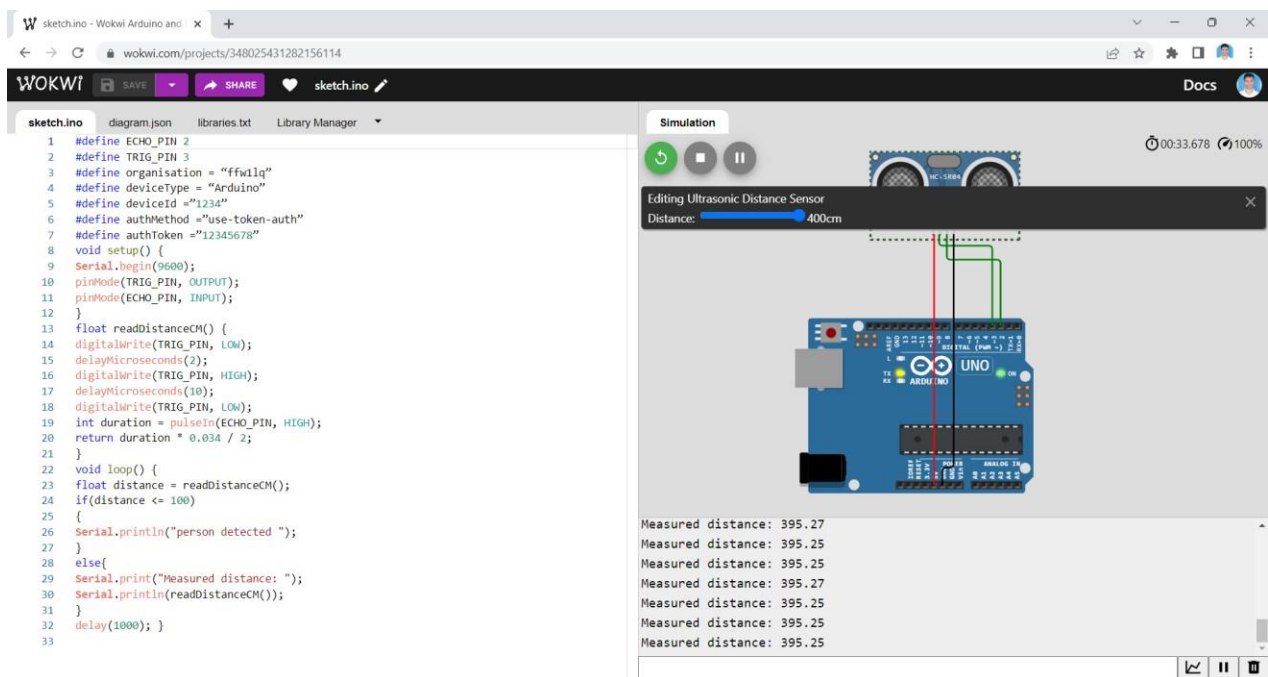
```
#define ECHO_PIN 2
#define TRIG_PIN 3
#define organisation = "ffw1lq"
#define deviceType = "Arduino"
#define deviceId ="1234"
#define authMethod ="use-token-auth"
#define authToken ="12345678"
void setup() {
```

```
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("person detected ");  
    }  
    else{  
        Serial.print("Measured distance: ");  
        Serial.println(readDistanceCM());  
    }  
    delay(1000); }
```

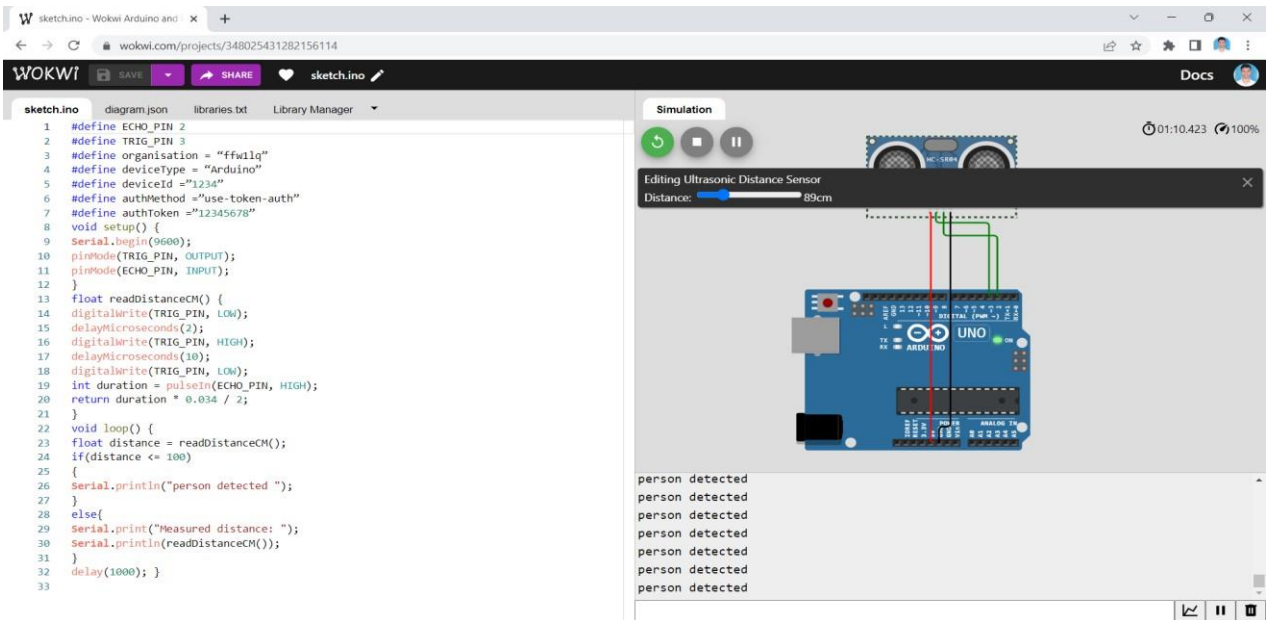
## OUTPUT:



## When the distance is greater than 100 cm:

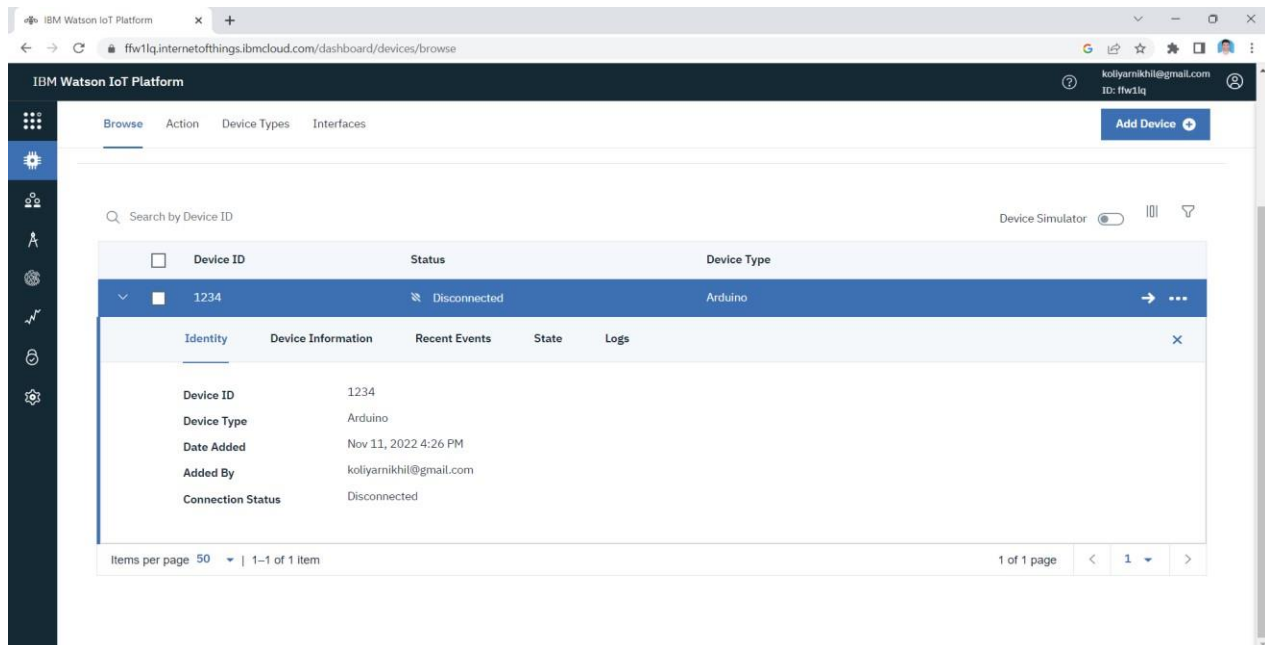


## When the distance is lesser than 100 cm:



WOKWI LINK: <https://wokwi.com/projects/348025431282156114>

## IBM Watson IoT Platform Output:



Browse

Action

Device Types

Interfaces

Add Device +

Identity

Device Information

Recent Events

State

Logs

X

The recent events listed show the live stream of data that is coming and going from this device,

Event	Value	Format	Last Received
Data	{"Distance":51.99,"ALERT!!":"Distance less than ...	json	a few seconds ago
Data	{"Distance":51.99,"ALERT!!":"Distance less than ...	json	a few seconds ago
Data	{"Distance":51.99,"ALERT!!":"Distance less than ...	json	a few seconds ago

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