

ASSIGNMENT – 4

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

TEAM MEMBERS:

- KOLIYAR NIKHIL DURAIRAJ (LEAD)
- OBULI HARIHARAN R
- VASANTHAN V
- POOVARASAN P

Assignment 4:

Write code and connections in wokwi for the ultrasonic sensor.

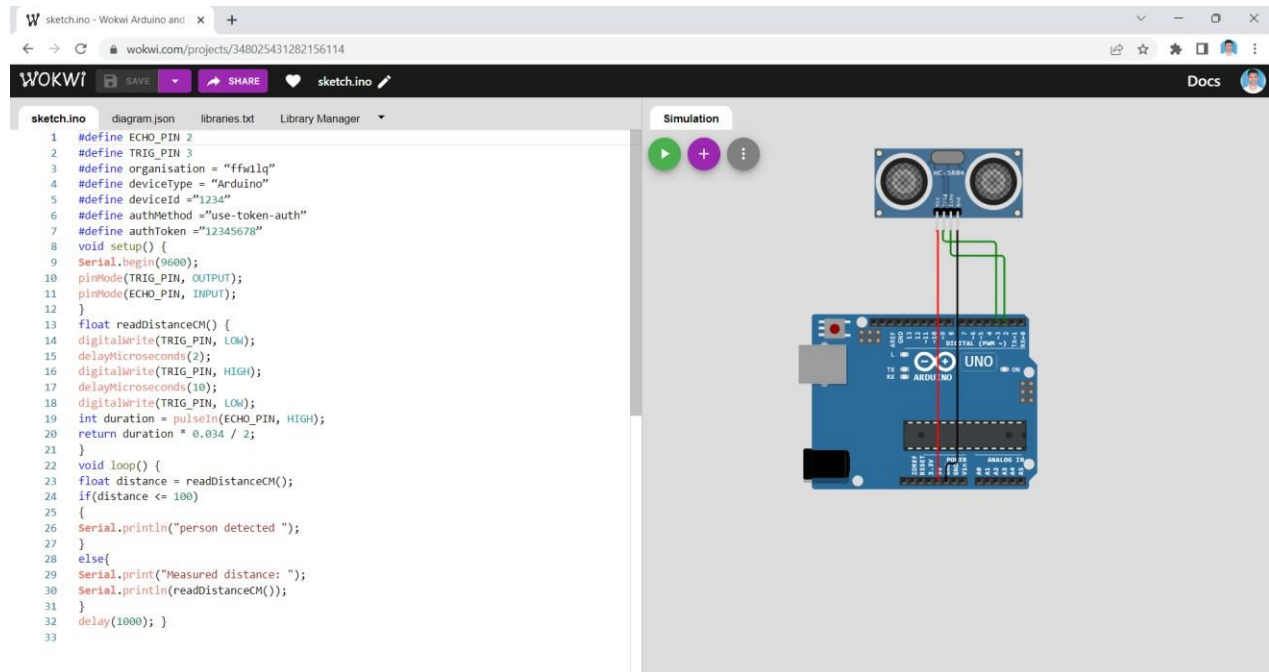
Whenever the distance is less than 100 cms send an "alert" to the IBM cloud and display in the device recent events.

CODE:

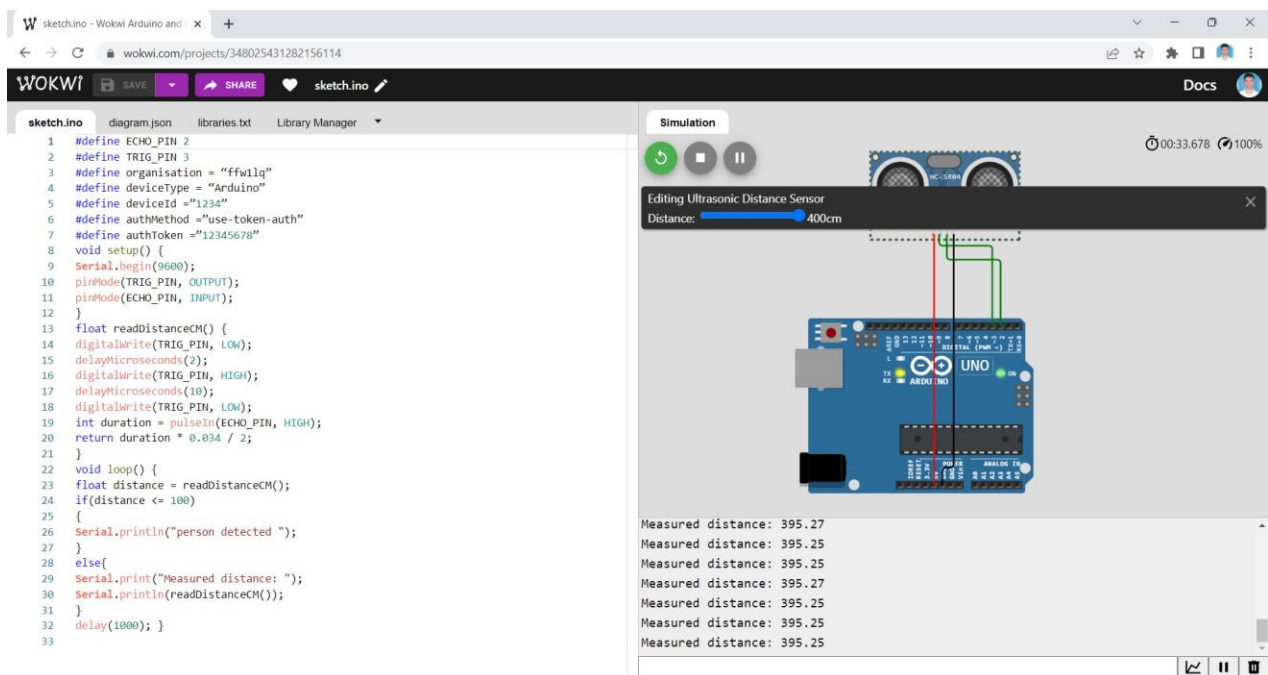
```
#define ECHO_PIN 2
#define TRIG_PIN 3
#define organisation = "ffw1lq"
#define deviceType = "Arduino"
#define deviceId ="1234"
#define authMethod ="use-token-auth"
#define authToken ="12345678"
void setup() {
```

```
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); }
```

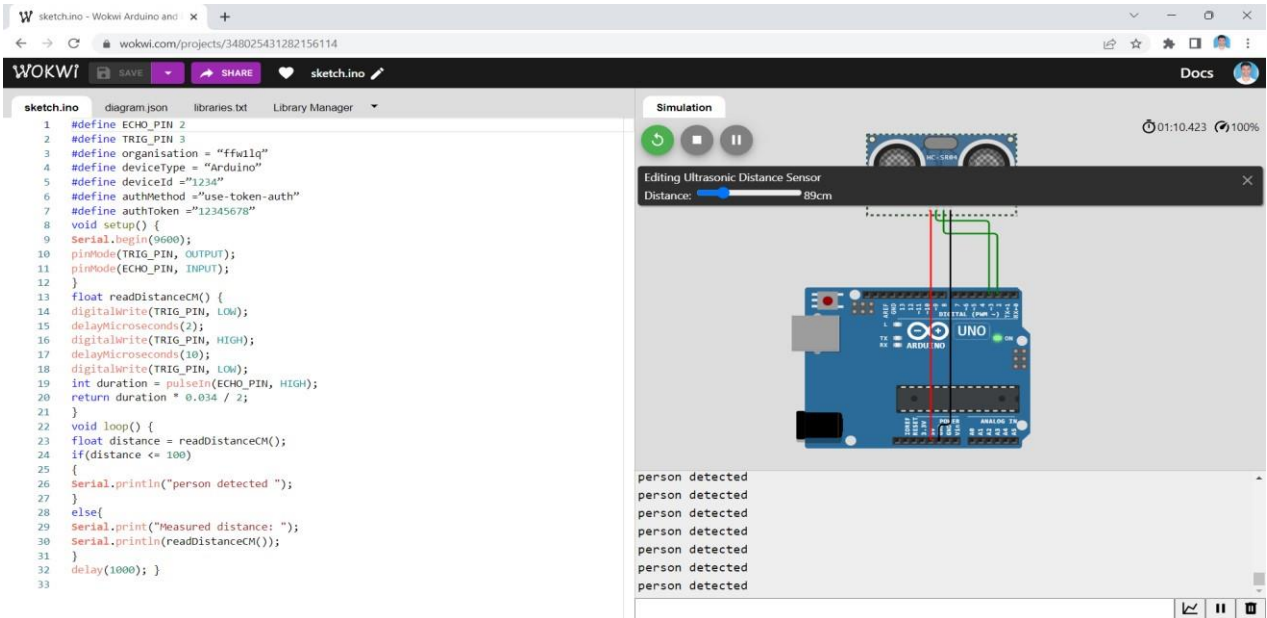
OUTPUT:



When the distance is greater than 100 cm:

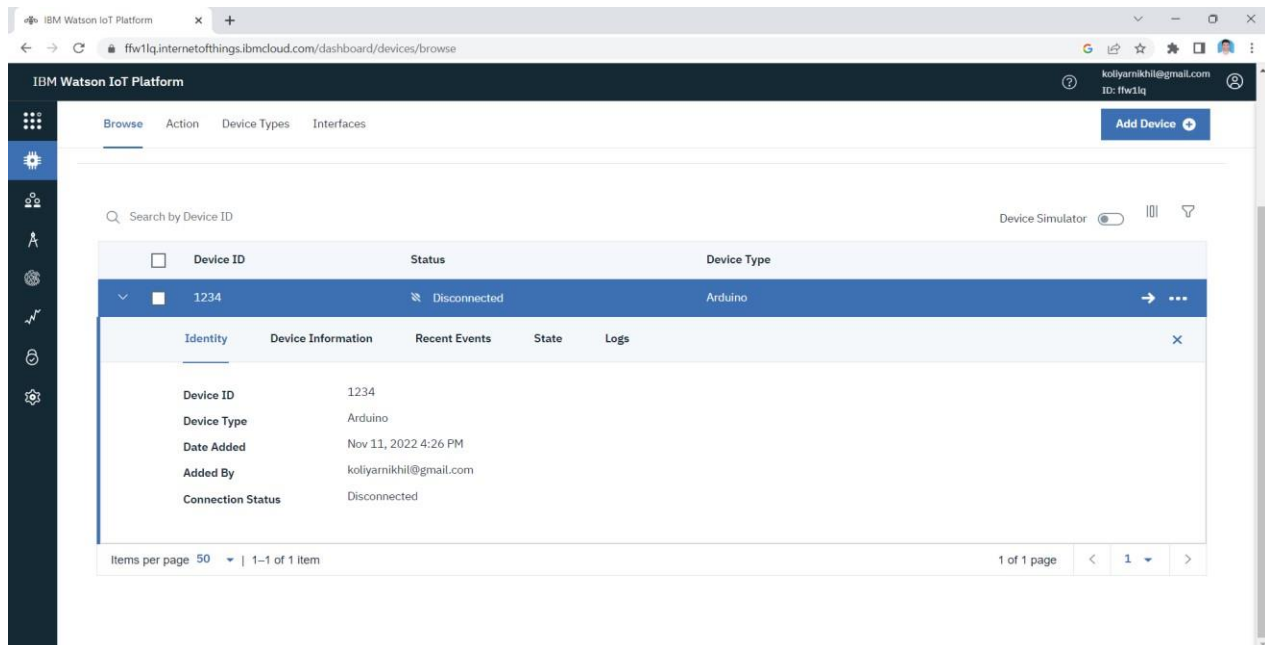


When the distance is lesser than 100 cm:



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

Items per page 50 | 1-2 of 2 items

1 of 1 page < 1 >