

ASSIGNMENT-4

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|-----------------|------------------------|
| ASSESSMENT DATE | 05 November 2022 |
| NAME | MENAGHA P |
| REGISTER NUMBER | 621319106055 |
| MARKS | 2 Marks |

PROBLEM:

Write code and connections in wokwi for ultrasonic sensors.

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

Upload document with wokwi share link and images of ibm cloud.

CODE:

```
#define ECHO_PIN 2
#define TRIG_PIN 3
#define Device_Id "1234"
#define Device_type "wokwi"
#define Token "12345678"

void setup() {
    Serial.begin(115200);
    pinMode(LED_BUILTIN, OUTPUT);
    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;
}

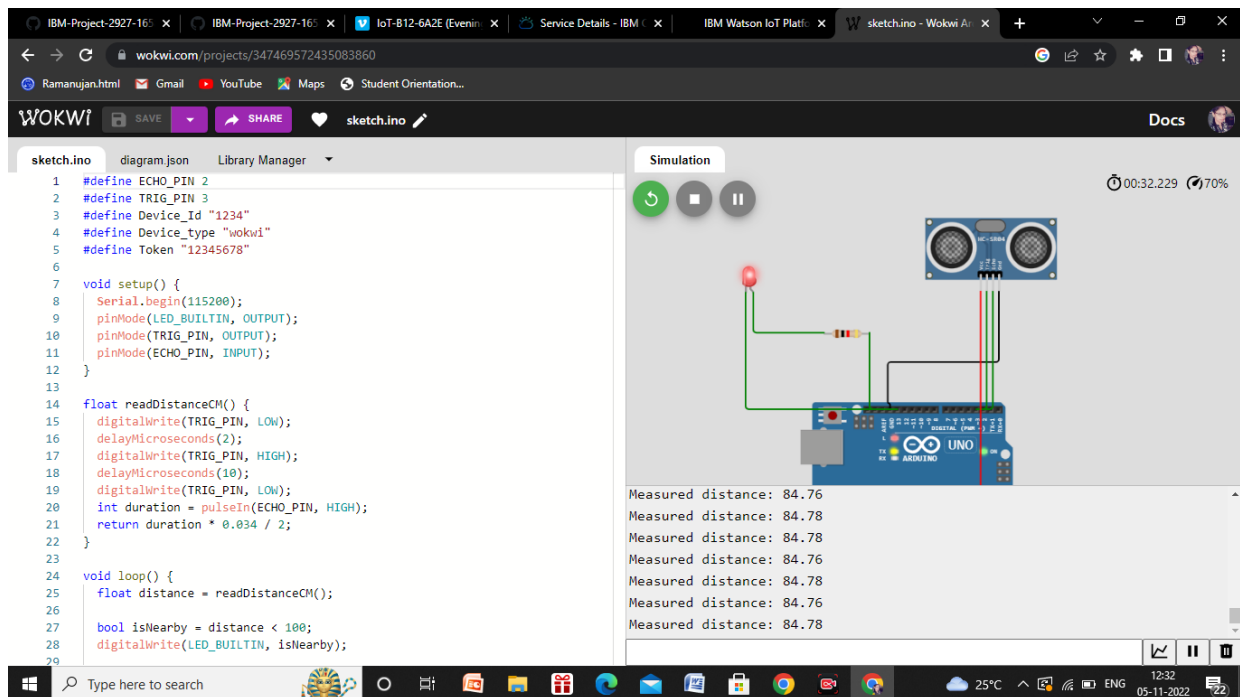
void loop() {
    float distance = readDistanceCM();

    bool isNearby = distance < 100;
    digitalWrite(LED_BUILTIN, isNearby);

    Serial.print("Measured distance: ");
    Serial.println(readDistanceCM());

    delay(100);
}
```

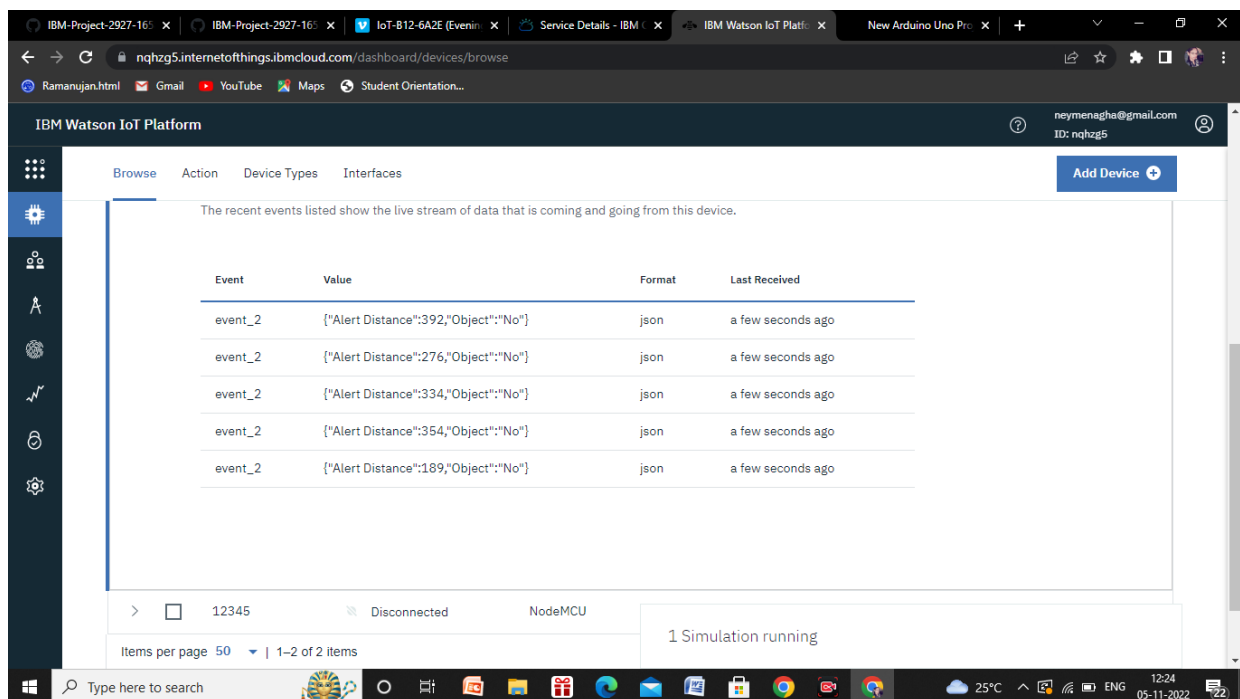
SIMULATION SCREENSHOT:



SIMULATION LINK:

<https://wokwi.com/projects/347469572435083860>

WHEN OBJECT >100:



WHEN OBJECT <100:

The screenshot displays the IBM Watson IoT Platform interface. The top navigation bar includes tabs for 'Browse', 'Action', 'Device Types', and 'Interfaces'. The main content area shows details for a device named '1234', which is 'Disconnected' and of type 'wokwi'. The 'Recent Events' tab is active, displaying a table of events. The table has four columns: 'Event', 'Value', 'Format', and 'Last Received'. The events are all 'event_2' with JSON values indicating an 'Alert Distance' and 'Object' status. A status message at the bottom indicates '1 Simulation running'.

| Event | Value | Format | Last Received |
|---------|---------------------------------------|--------|-------------------|
| event_2 | {"Alert Distance":85,"Object":"near"} | json | a few seconds ago |
| event_2 | {"Alert Distance":15,"Object":"near"} | json | a few seconds ago |
| event_2 | {"Alert Distance":49,"Object":"near"} | json | a few seconds ago |
| event_2 | {"Alert Distance":45,"Object":"near"} | json | a few seconds ago |
| event_2 | {"Alert Distance":20,"Object":"near"} | json | a few seconds ago |

1 Simulation running