

ASSESSMENT-4

ASSESSMENT DATE	05 November 2022
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REGISTER NUMBER	621319106059
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 "9876"
#define Device_type "wokwi"
#define Token "987654321"

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;
}

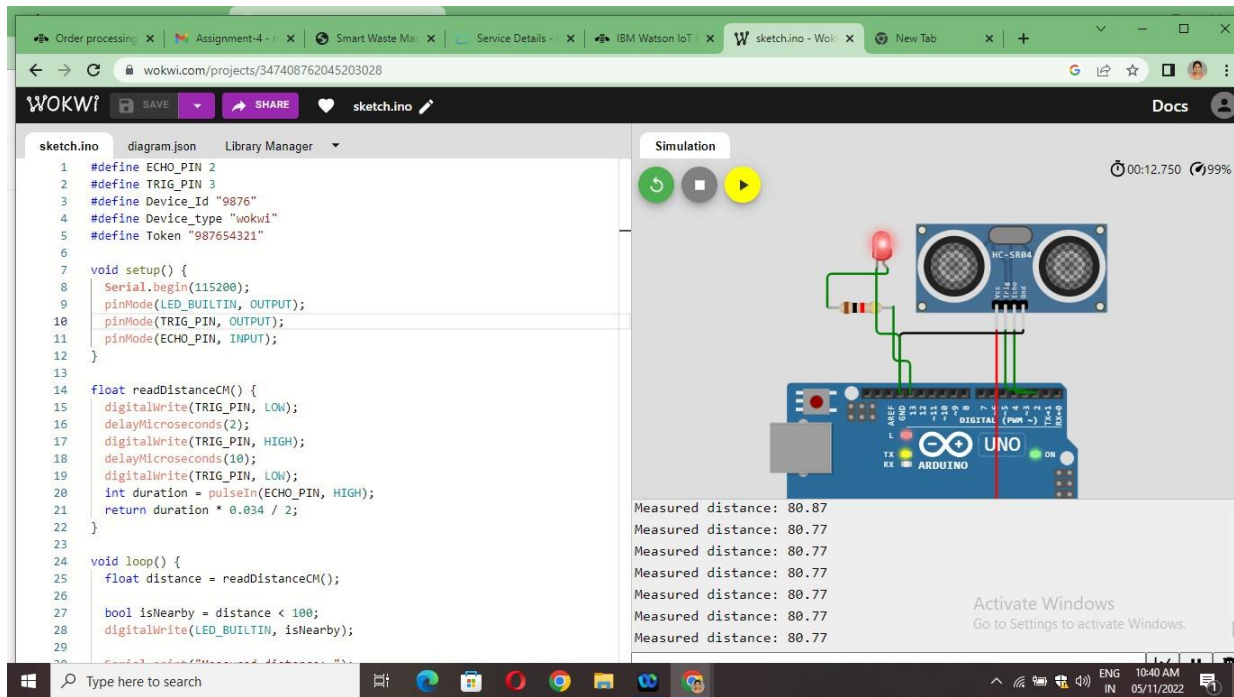
void loop() {
  float distance = readDistanceCM();

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

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

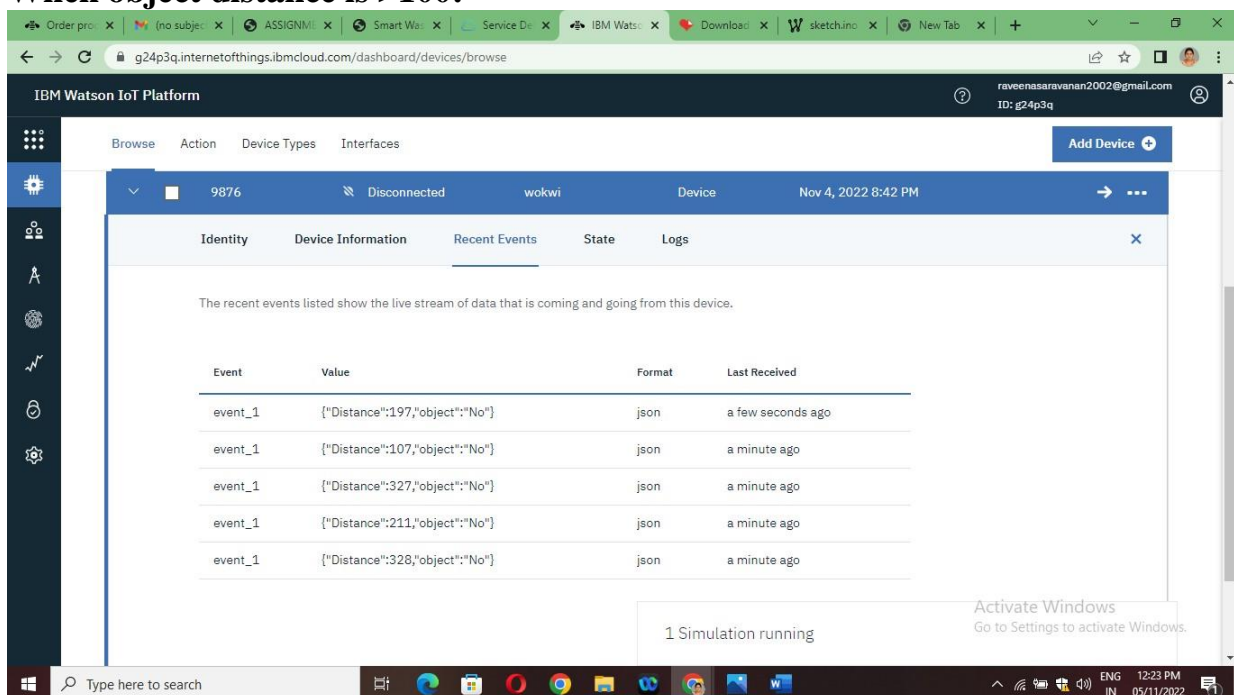
  delay(100);
}

SIMULATION:
```



Link: <https://wokwi.com/projects/348655935259935314>

When object distance is >100:



When object distance is <100:

The screenshot shows the IBM Watson IoT Platform interface. At the top, there's a navigation bar with 'Browse', 'Action', 'Device Types', and 'Interfaces'. A search bar is present with the text 'Search by Device ID'. On the right, there's a user profile and an 'Add Device' button. The main content area displays a table of devices. The first device, ID 123456, is highlighted. Below the device header, there's a tabbed interface with 'Identity', 'Device Information', 'Recent Events', 'State', and 'Logs'. The 'Recent Events' tab is selected, showing a list of events. A notification at the bottom right states '1 Simulation running'.

Device ID	Status	Device Type	Class ID	Date Added	Descriptive Location
123456	Disconnected	NodeMCU	Device	Nov 5, 2022 10:37 AM	

Identity	Device Information	Recent Events	State	Logs																								
<p>The recent events listed show the live stream of data that is coming and going from this device.</p> <table border="1"> <thead> <tr> <th>Event</th> <th>Value</th> <th>Format</th> <th>Last Received</th> </tr> </thead> <tbody> <tr> <td>event_1</td> <td>{"Alert Distance":95,"Object":"near"}</td> <td>json</td> <td>a few seconds ago</td> </tr> <tr> <td>event_1</td> <td>{"Alert Distance":14,"Object":"near"}</td> <td>json</td> <td>a few seconds ago</td> </tr> <tr> <td>event_1</td> <td>{"Alert Distance":8,"Object":"near"}</td> <td>json</td> <td>a few seconds ago</td> </tr> <tr> <td>event_1</td> <td>{"Alert Distance":13,"Object":"near"}</td> <td>json</td> <td>a few seconds ago</td> </tr> <tr> <td>event_1</td> <td>{"Alert Distance":5,"Object":"near"}</td> <td>json</td> <td>a few seconds ago</td> </tr> </tbody> </table>					Event	Value	Format	Last Received	event_1	{"Alert Distance":95,"Object":"near"}	json	a few seconds ago	event_1	{"Alert Distance":14,"Object":"near"}	json	a few seconds ago	event_1	{"Alert Distance":8,"Object":"near"}	json	a few seconds ago	event_1	{"Alert Distance":13,"Object":"near"}	json	a few seconds ago	event_1	{"Alert Distance":5,"Object":"near"}	json	a few seconds ago
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