

## ASSIGNMENT-4

Date	31October2022
TeamID	PNT2022TMID52242
MaximumMarks	2Marks

### Question1:

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

\*Write code and connections in work for ultrasonic sensor. Whenever distance is less than 100cms send "alert" to bmc cloud and display in device recent events.

### Code:

```
#define ECHO_PIN 2
#define TRIG_PIN 3

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);

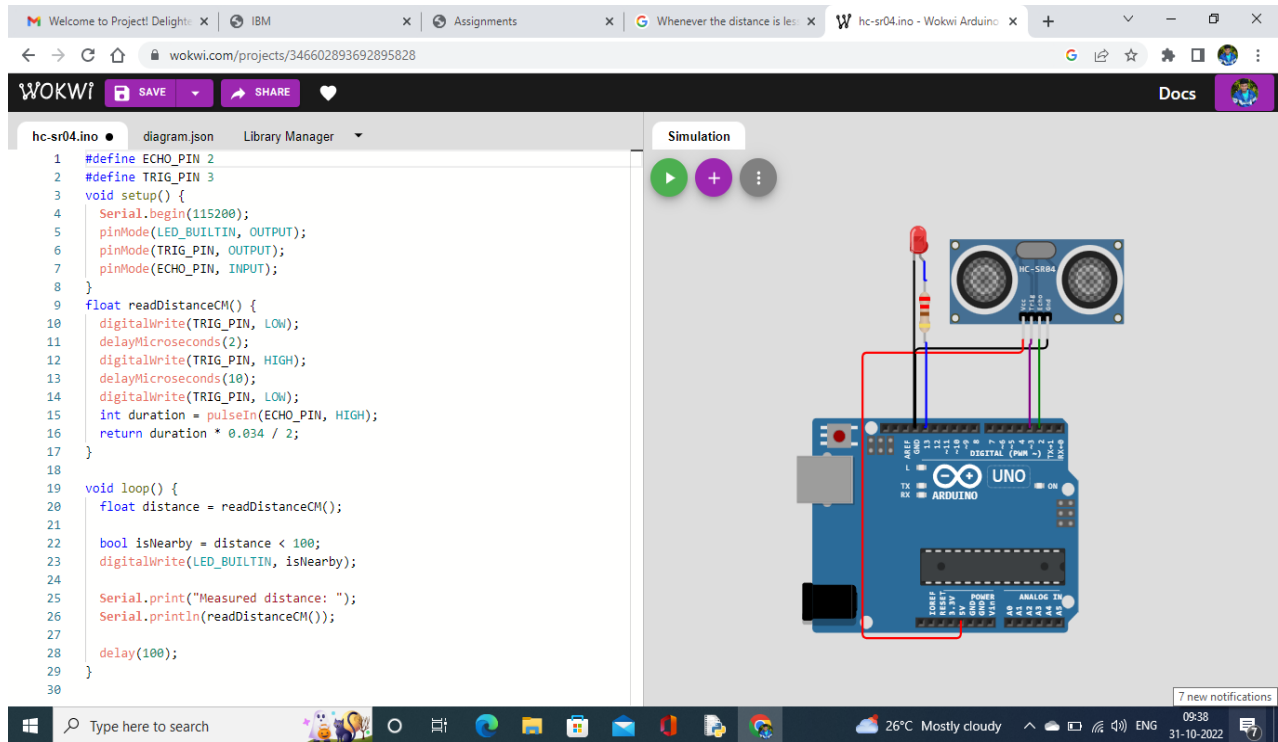
  Serial.print("Measured distance: ");
  Serial.println(readDistanceCM());

  delay(100);
}
```

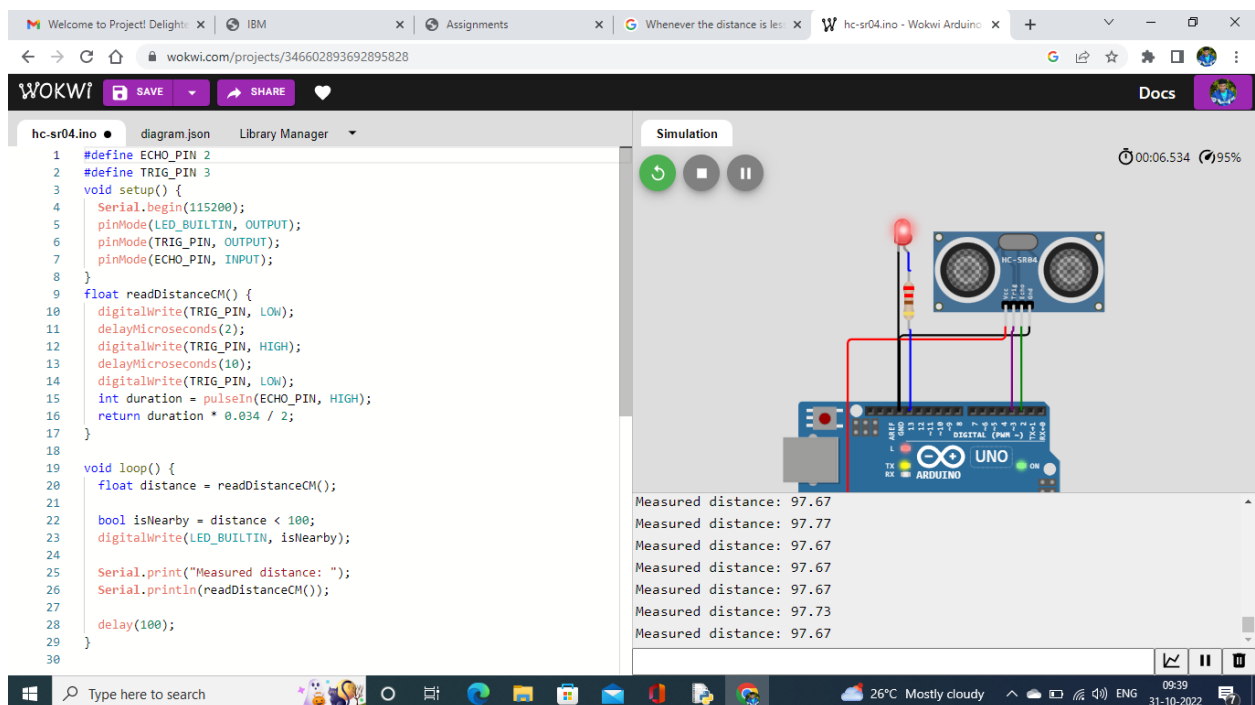
WOKWI LINK :

<https://wokwi.com/projects/346602893692895828>

## Solution :



## Solution run:



## OUTPUT: DATA IS SENT TO IBM CLOUD WHEN NO OBJECT IS DETECTED

The screenshot shows the IBM Watson IoT Platform dashboard. The top navigation bar includes 'Browse', 'Action', 'Device Types', and 'Interfaces'. A sidebar on the left contains icons for various functions. The main content area displays a table of recent events for the device 'ultrasonicsensor\_1'. The table has columns for 'Event', 'Value', 'Format', and 'Last Received'. The events are listed as follows:

Event	Value	Format	Last Received
ultrasonic	{"measured distance":3}	json	a few seconds ago
ultrasonic	{"measured distance":23}	json	a few seconds ago
ultrasonic	{"measured distance":21}	json	a few seconds ago
ultrasonic	{"measured distance":50}	json	a few seconds ago
ultrasonic	{"measured distance":71}	json	a few seconds ago

Below the table, it indicates '2 Simulations running'. The bottom of the screen shows a Windows taskbar with the date and time as 09:49 on 31-10-2022.

When no object is detected

The screenshot shows the IBM Watson IoT Platform dashboard in a state where no events are being received. The main content area displays a large icon of two people and the text 'Waiting for device events...'. The bottom of the screen shows a Windows taskbar with the date and time as 10:02 on 31-10-2022.