ASSIGNMENT-4

Date	31October2022
Team ID	PNT2022TMID52223
Maximum Marks	2Marks

Question:

*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 ibm cloud and display in device recent events.

Code:

```cpp
#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);
}
```
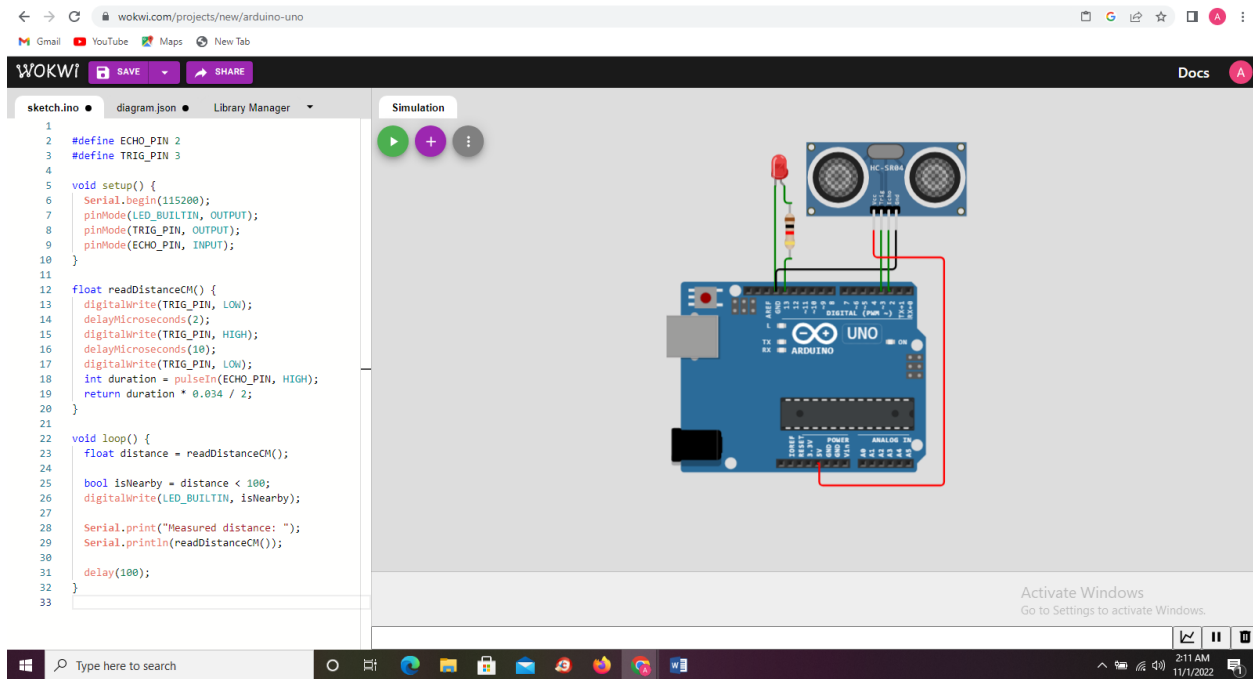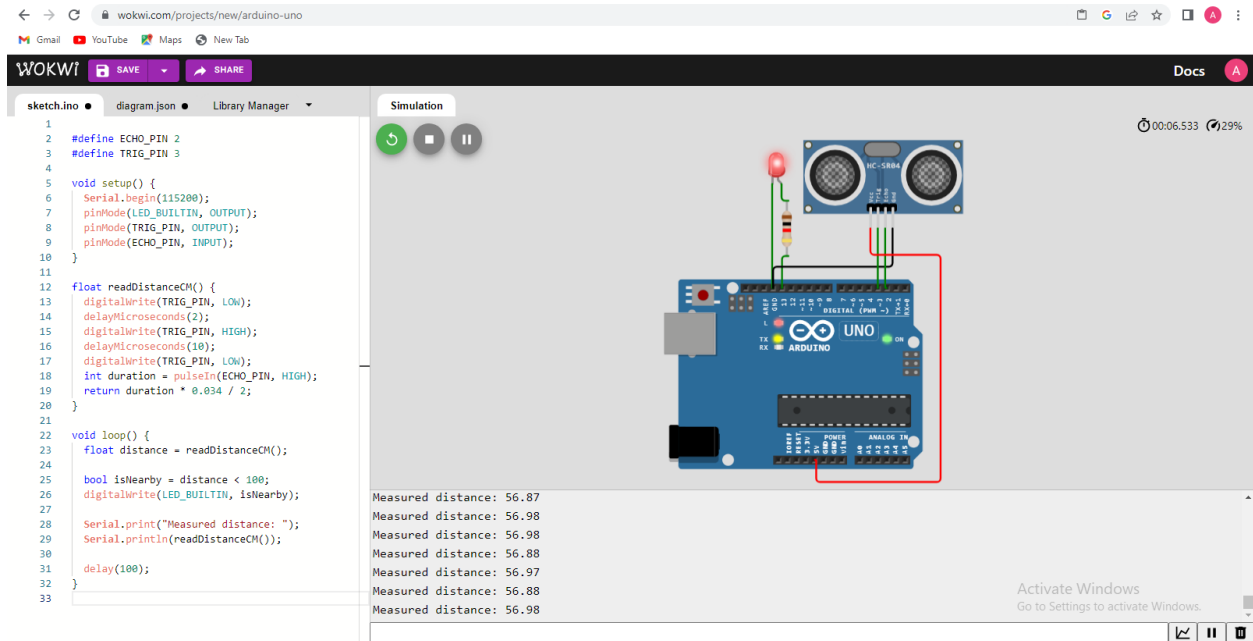
WOKWI LINK : https://wokwi.com/projects/347115384217797204

Solution :


```
1
2   #define ECHO_PIN 2
3   #define TRIG_PIN 3
4
5   void setup() {
6     Serial.begin(115200);
7     pinMode(LED_BUILTIN, OUTPUT);
8     pinMode(TRIG_PIN, OUTPUT);
9     pinMode(ECHO_PIN, INPUT);
10  }
11
12  float readDistanceCM() {
13    digitalWrite(TRIG_PIN, LOW);
14    delayMicroseconds(2);
15    digitalWrite(TRIG_PIN, HIGH);
16    delayMicroseconds(10);
17    digitalWrite(TRIG_PIN, LOW);
18    int duration = pulseIn(ECHO_PIN, HIGH);
19    return duration * 0.034 / 2;
20  }
21
22  void loop() {
23    float distance = readDistanceCM();
24
25    bool isNearby = distance < 100;
26    digitalWrite(LED_BUILTIN, isNearby);
27
28    Serial.print("Measured distance: ");
29    Serial.println(readDistanceCM());
30
31    delay(100);
32  }
33
```

Solution run:


```
Measured distance: 56.87
Measured distance: 56.98
Measured distance: 56.98
Measured distance: 56.88
Measured distance: 56.97
Measured distance: 56.88
Measured distance: 56.98
```

OUTPUT:

DATA IS SENT TO IBM CLOUD WHEN OBJECT IS DETECTED

When no object is detected

: