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.

```
 #define ECHOpin 5 // it defines the ECHO pin of the sensor to pin 5 of Arduino
#define TRIGpin 6
// we have defined the variable
long duration; // variable for the duration of sound wave travel
int distance; // variable for the distance measurement
void setup()
{
  pinMode(TRIGpin, OUTPUT); // It sets the ECHO pin as OUTPUT
  pinMode(ECHOpin, INPUT); // It sets the TRIG pin as INPUT
  Serial.begin(9600); // // Serial Communication at the rate of 9600 bps
  Serial.println("Test of the Ultrasonic Sensor HC-SR04"); // It will appear on Serial
        Monitor
  Serial.println("with the Arduino UNO R3 board");
}
void loop()
{
  // It first sets the TRIG pin at LOW for 2 microseconds
  digitalWrite(TRIGpin, LOW);
  delayMicroseconds(4);
```

```
  // It now sets TRIG pin at HIGH for 15 microseconds
  digitalWrite(TRIGpin, HIGH);
  delayMicroseconds(15);
  digitalWrite(TRIGpin, LOW);
  // It will read the ECHO pin and will return the time
  duration = pulseIn(ECHOpin, HIGH);
  // distance formula
  distance = duration*(0.034/2); // (speed in microseconds)
  // Speed of sound wave (340 m/s)divided by 2 (forward and backward bounce)
  // To display the distance on Serial Monitor
  Serial.print("Distance: ");
  Serial.print(distance);
  Serial.println(" cm"); //specified unit of distance
}
#define ECHOpin 5 // it defines the ECHO pin of the sensor to pin 5 of Arduino
#define TRIGpin 6
// we have defined the variable
long duration; // variable for the duration of sound wave travel
int distance; // variable for the distance measurement
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```
  Serial.println("Test of the Ultrasonic Sensor HC-SR04"); // It will appear on Serial
        Monitor
  Serial.println("with the Arduino UNO R3 board");
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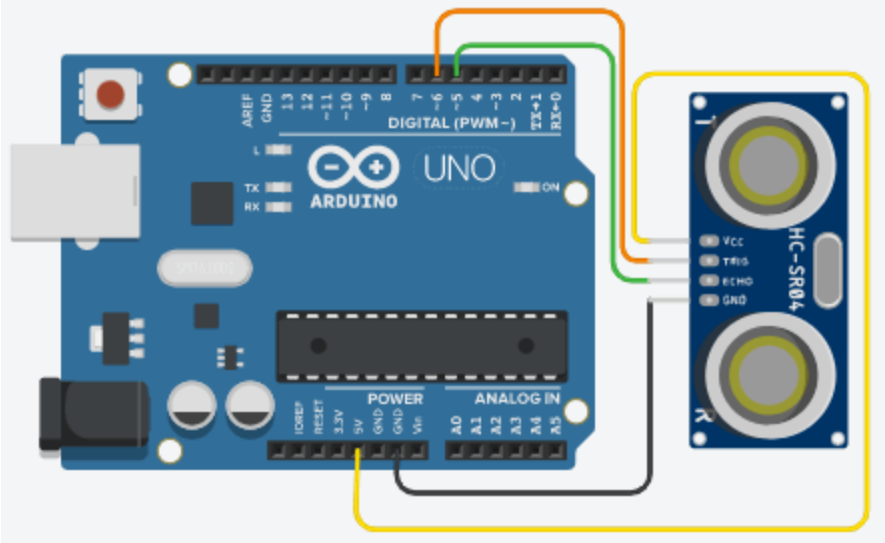
void loop()
{
  // It first sets the TRIG pin at LOW for 2 microseconds
  digitalWrite(TRIGpin, LOW);
  delayMicroseconds(4);
  // It now sets TRIG pin at HIGH for 15 microseconds
  digitalWrite(TRIGpin, HIGH);
  delayMicroseconds(15);
  digitalWrite(TRIGpin, LOW);
  // It will read the ECHO pin and will return the time
  duration = pulseIn(ECHOpin, HIGH);
  // distance formula
  distance = duration*(0.034/2); // (speed in microseconds)
  // Speed of sound wave (340 m/s)divided by 2 (forward and backward bounce)
  // To display the distance on Serial Monitor
  Serial.print("Distance: ");
  Serial.print(distance);
  Serial.println(" cm"); //specified unit of distance
}
```

Connection Diagram



OUTPUT:

The output on the serial monitor will appear as: