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.

upload document with wokwi share like and images of IBM cloud.

The HC-SR04 ultrasonic sensor uses SONAR to determine the distance of an object just like the bats do. It offers excellent non-contact range detection with high accuracy and stable readings in an easy-to-use package from 2 cm to 400 cm or 1" to 13 feet.

The operation is not affected by sunlight or black material, although acoustically, soft materials like cloth can be difficult to detect. It comes complete with ultrasonic transmitter and receiver module.

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Technical Specifications

- Power Supply - +5V DC - Quiescent Current - <2mA

Working Current - 15mA - Effectual Angle - <15° - Ranging Distance - 2cm - 400 cm/1" -

13ft Resolution - 0.3 cm Measuring Angle - 30 degree

Components Required

You will need the following components -

1 x Breadboard

1 x Arduino Uno R3

1 x ULTRASONIC Sensor (HC-SR04)

Procedure

Follow the circuit diagram and make the connections as shown in the image given below.

Arduino Code

const int pingPin = 7; // Trigger const int echoPin = 6; // Echo Pin

void setup() {

Serial.begin(9600); // Starting

void loop() {

long duration, inches, cm; pinMode(pingPin, OUTPUT); digitalWrite(pingPin, LOW); delayMicroseconds (2); digitalWrite(pingPin, HIGH); delayMicroseconds(10); digitalWrite(pingPin, LOW); pinMode(echoPin, INPUT); duration = pulseIn(echoPin, HIG inches = microseconds To Inches (d cm = microsecondsToCentimeters Serial.print(inches); Serial.print("in, "); Serial.print(cm); Serial.print("cm"); Serial.println(); delay(100):

SONARI

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ULTRASONIC SENSOR INTERFACE TD ARDUINO UNO

Sketch

Open the Arduino IDE software on your computer. Coding in the Arduino language will control your circuit. Open a new sketch File by clicking New.

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Code to Note

The Ultrasonic sensor has four terminals - +5V, Trigger, Echo, and GND connected as follows -

- Connect the +5V pin to +5v on your

Arduino board. Connect Trigger to digital pin 7 on your Arduino board. Connect Echo to digital pin 6 on your

Arduino board. - Connect GND with GND on Arduino.

In our program, we have displayed the distance measured by the sensor in inches and cm via the serial port.

Result

You will see the distance measured by sensor in inches and cm on Arduino serial monitor.