

ASSIGNMENT – 4

Team Member	S SIVA
Register Number	421819104020
Date	23-10-2022
Team ID	PNT2022TMID38983
Project Name	Smart Farmer- IOT Enabled Smart Farming Application
Maximum Marks	2 Marks

OBJECTIVE:

To develop a code and make connections in wokwi for ultrasonic sensor, whenever distance is less than 100 cm send “Alert” to IBM cloud and display in device recent events.

CODE:

```
const int TRIG_PIN = 7;
const int ECHO_PIN = 8;

const unsigned int MAX_DIST = 23600;
void setup() {

  pinMode(TRIG_PIN, OUTPUT);
  digitalWrite(TRIG_PIN, LOW);

  pinMode(ECHO_PIN, INPUT);

  Serial.begin(9600);
}
void loop() {

  unsigned long t1;
  unsigned long t2;
  unsigned long pulse_width;
  float cm;
  float inches;

  digitalWrite(TRIG_PIN, HIGH);
  delayMicroseconds(10);
  digitalWrite(TRIG_PIN, LOW);

  while (digitalRead(ECHO_PIN) == 0);

  t1 = micros();
```

```

t1 = micros();
while (digitalRead(ECHO_PIN) == 1);
t2 = micros();
pulse_width = t2 - t1;

cm = pulse_width / 58;
inches = pulse_width / 148.0;

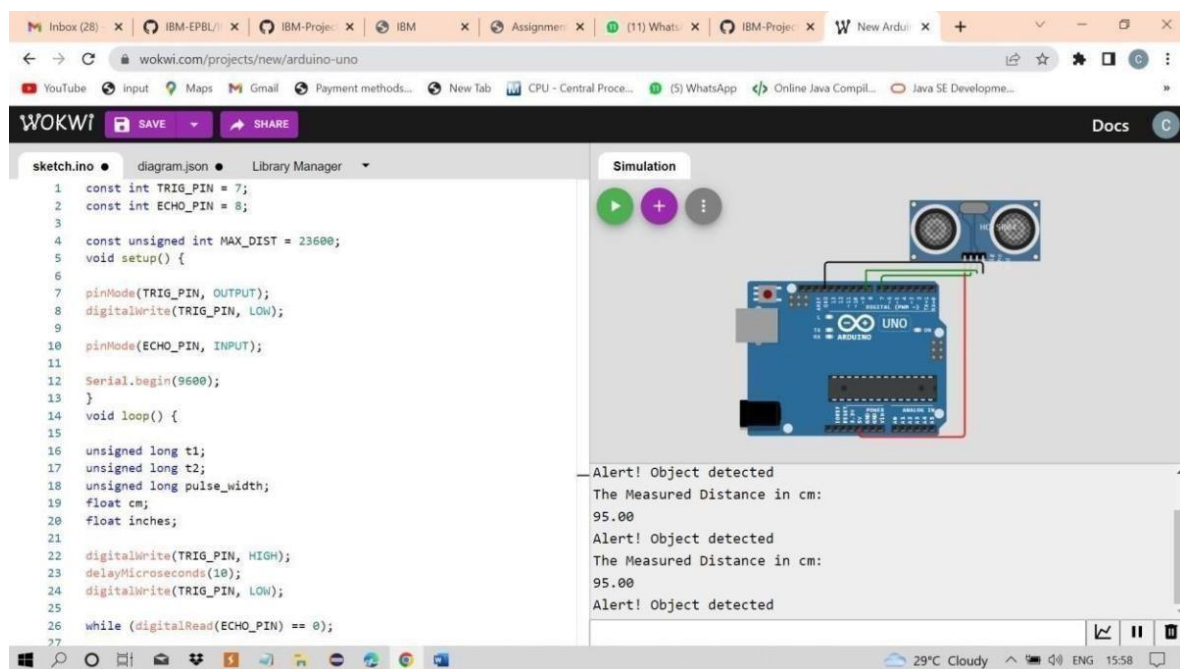
if (pulse_width > MAX_DIST) {
  Serial.println("Out of range");
}
else
{
  Serial.print("The Measured Distance in cm: "); Serial.println(cm);

  if (cm < 100)
  {
    Serial.println("Alert! Object detected");
  }
}

delay(1000);
}

```

SIMULATION



The screenshot shows the Wokwi online IDE interface. On the left, the sketch code is displayed, which is identical to the code in the first block. The right side of the interface features a simulation window titled "Simulation" showing a 3D model of an Arduino Uno board connected to an HC-SR04 ultrasonic sensor module. Below the simulation, a serial monitor window shows the output of the code:

```

Alert! Object detected
The Measured Distance in cm:
95.00
Alert! Object detected
The Measured Distance in cm:
95.00
Alert! Object detected

```