REAL-TIME RIVER WATER QUALITY MONITORING AND CONTROL SYSTEM

ASSIGNMENT – 4

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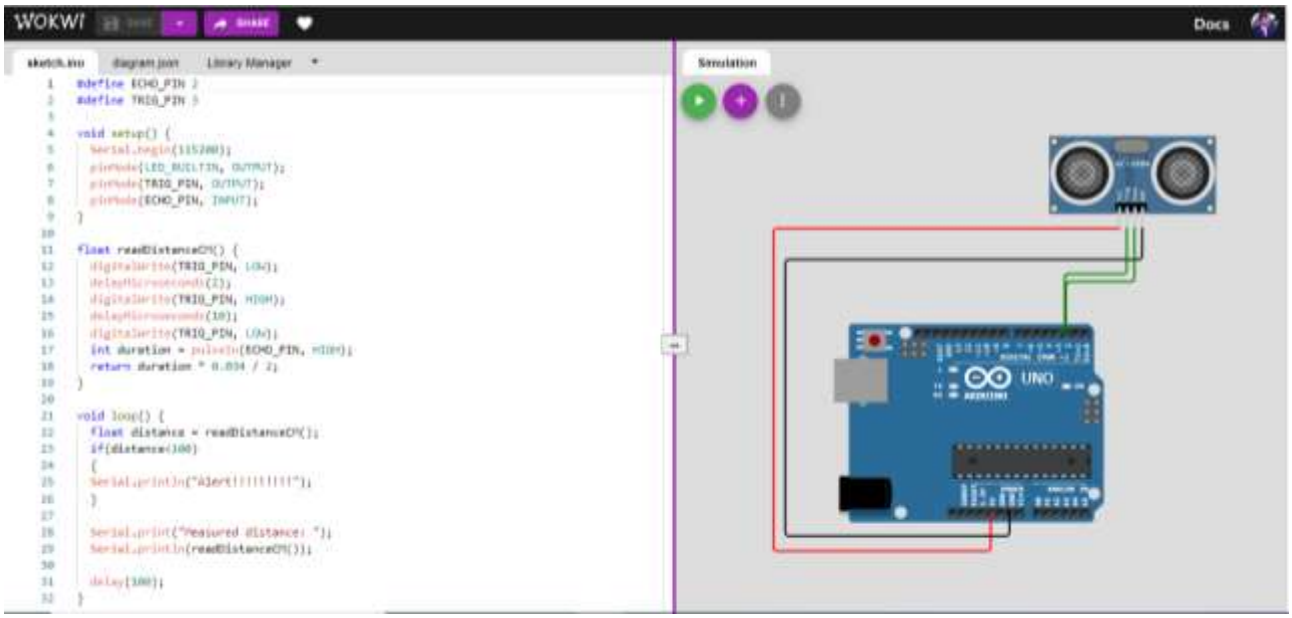
1. **Write Code and connections in wokwi for ultrasonic sensor. Whenever distance is less than 100 centimetres send an *'alert'* to the ibm cloud and display in device recent events.**

Program:

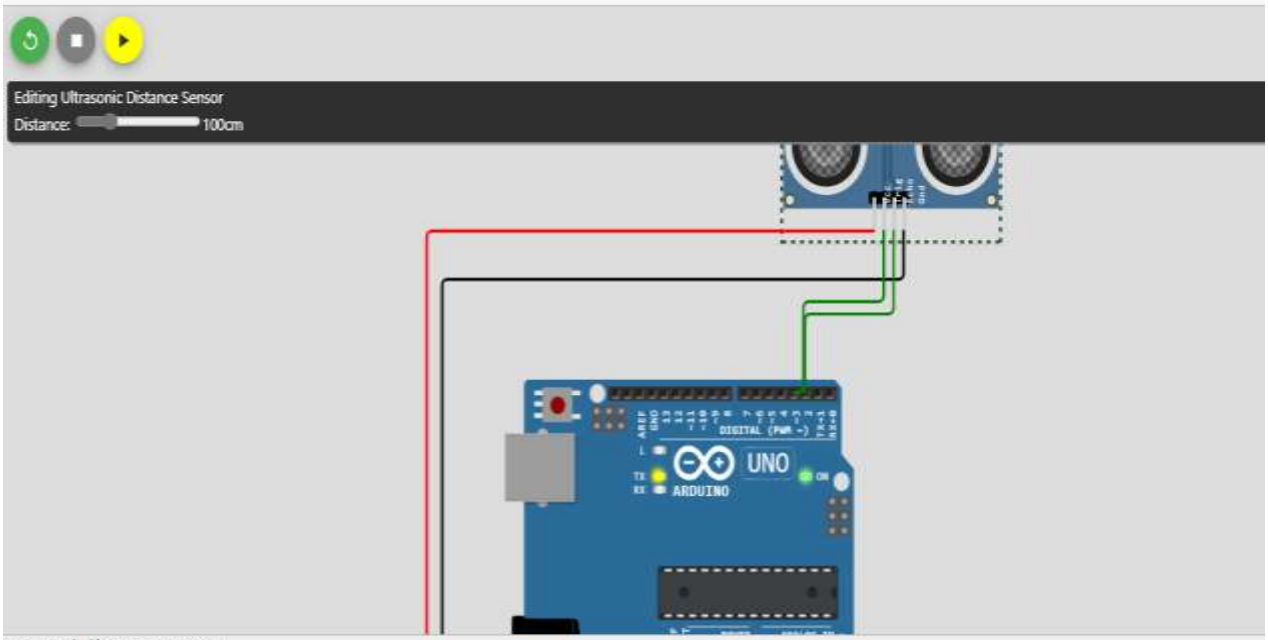
```
#define ECHO_PIN 2

#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();
  if(distance<100)
  {
  Serial.println("Alert!!!!!!!!!");
  }

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

  delay(100);
}
```

Wokwi Editor window:



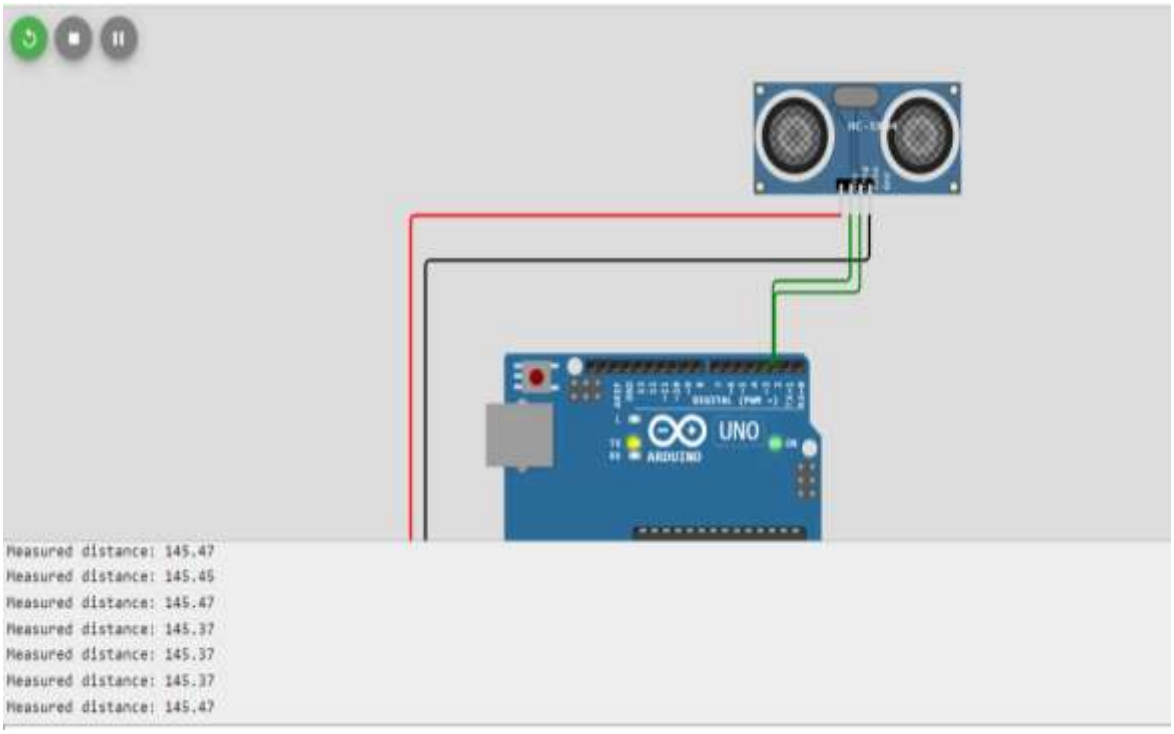
Results:

1. The measured distance is less than 100 centimetres, it gives alert message




```
Measured distance: 95.69
Alert!!!!!!!!!
Measured distance: 95.69
Alert!!!!!!!!!
Measured distance: 95.69
```

2. The measured distance is more than 100 centimetres, it will not give alert message



Wokwi Link:

https://wokwi.com/projects/328451800839488084