

SMART SOLUTION FOR RAILWAYS

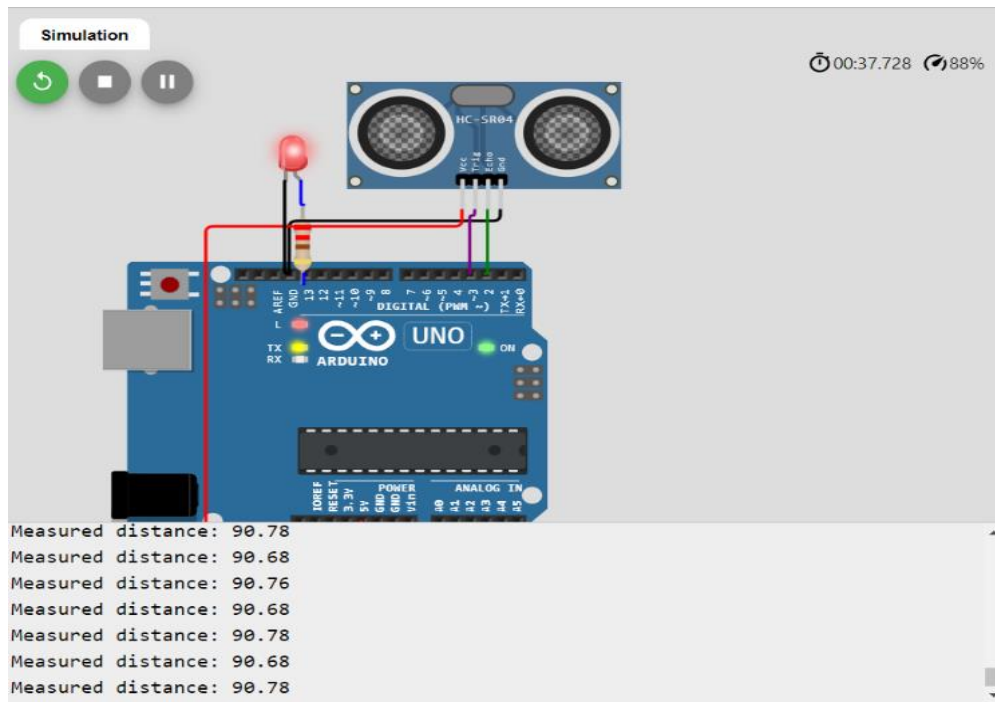
ASSIGNMENT-4

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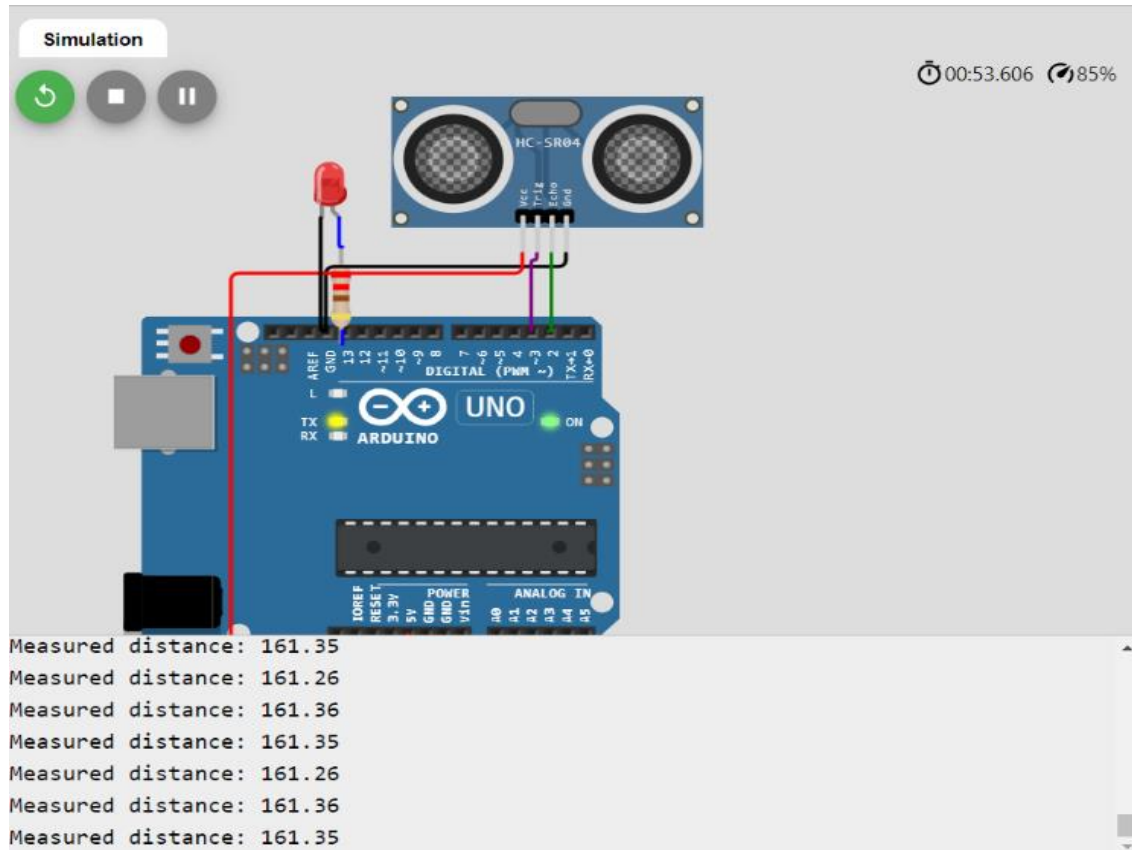
QUESTION:

Write Code and connections in wokwi for ultrasonic sensor. Whatever distance is less than 100 cm send "Alert" to IBM cloud and display in device recent events.

CASE 1: Distance less than 100cm → It Alerts(red light glows)



CASE 2: Distance more than 100cm → It won't Alert



CODING

```
#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);
```

CIRCUIT

