SMART SOLUTION FOR RAILWAYS
ASSIGNMENT-4

Date	31 October 2022
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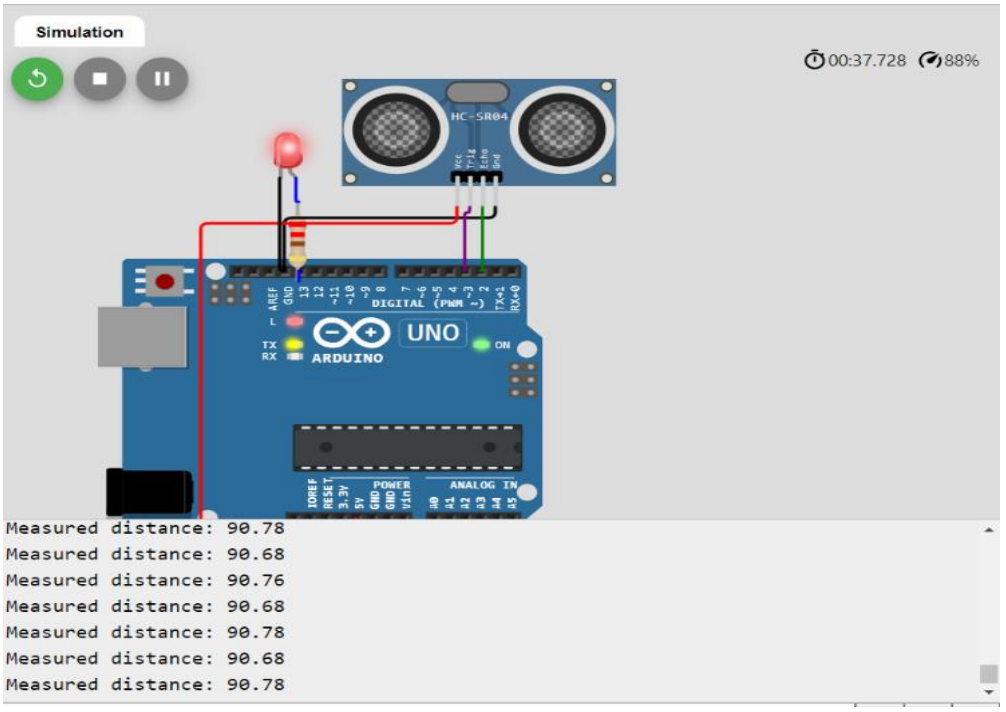
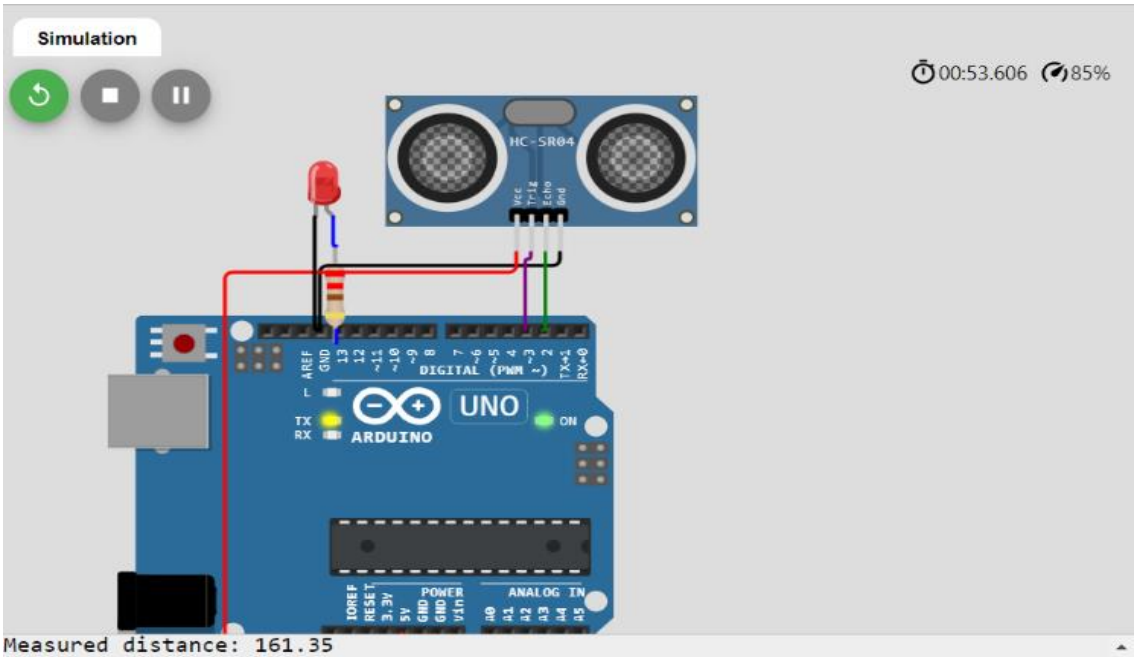
QUESTION:

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