

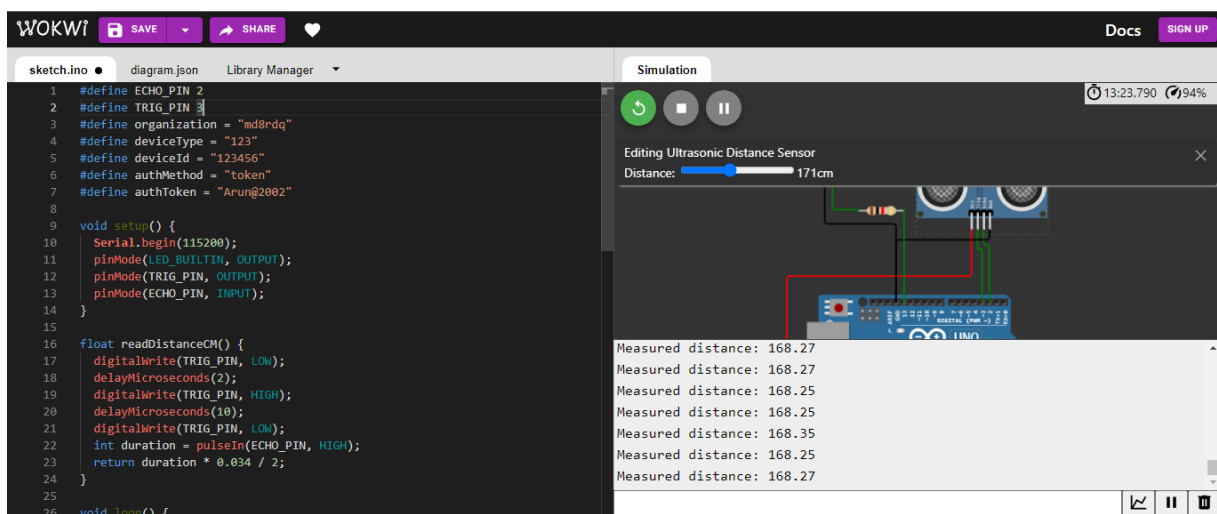
ASSIGNMENT 4

Ultrasonic sensor simulation in Wokwi

Question : Write a code and connections in wokwi for the ultrasonic sensor. Whenever the distance is less than 100cms send an “Alert” to IBM cloud and display in the device recent events.

Wokwi simulation link: <https://wokwi.com/projects/347124503089775177>

WOKWI OUTPUT SCREENSHOT:



CODE:

```
#define ECHO_PIN 2
#define TRIG_PIN 3
#define organization = "md8rdq"
#define deviceType = "123"
#define deviceId = "123456"
#define authMethod = "token"
#define authToken = "Arun@2002"

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(" person detected");
}
else{
  Serial.print("Measured distance: ");
  Serial.println(readDistanceCM());
}
delay(1000);
}

```

The screenshot displays the IBM Watson IoT Platform interface. On the left, a sidebar contains navigation icons for various functions. The main panel is titled 'Device Type: 123' and includes a 'Send' button. Below this, a table lists device information:

Device ID	Status	Device Type
123456	Disconnected	123

Below the table, there are tabs for 'Identity', 'Device Information', and 'Recent Events'. The 'Recent Events' tab is active, showing a list of events:

Event	Value
event_1	{"randomNumber":92,"distance":11}
event_1	{"randomNumber":45,"distance":56}

On the right side of the interface, a configuration window for 'Device Type: 123' is open. It includes a 'Schedule' section with a dropdown set to 'Every Minute' and a 'Payload' section with a JSON editor containing the following code:

```

{
  "randomNumber": random(0, 100),
  "distance": random(0, 150)
}

```

Below the JSON editor is an 'Upload a CSV file' button. At the bottom right of the configuration window, there is a link that says 'What functions can I apply?'.

