

Assignment -4
Ultrasonic sensor simulation in Wokwi

Assignment Date	31 October 2022
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Maximum Marks	2 Marks

Question-1:

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.

CODE:

```
#define ECHO_PIN 2
#define TRIG_PIN 3
#define organization = "k2m20e"
#define deviceType = "abcd"
#define deviceId = "16"
#define authMethod = "token"
#define authToken = "12345678"

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

```

Diagram.json:

```

{
  "version": 1,
  "author": "Anonymous maker",
  "editor": "wokwi",
  "parts": [
    { "type": "wokwi-arduino-uno", "id": "uno", "top": 128.34, "left": -37.99, "attrs": { }
  },
    {
      "type": "wokwi-led",
      "id": "led1",
      "top": -51.17,
      "left": 63.02,
      "attrs": { "color": "red" }
    },
    {
      "type": "wokwi-resistor",
      "id": "r1",
      "top": 29.69,
      "left": 63.05,
      "rotate": 90,
      "attrs": { "value": "1000" }
    },
    { "type": "wokwi-hc-sr04", "id": "ultrasonic1", "top": -117.02, "left": 175.77,
  "attrs": { } }
  ],

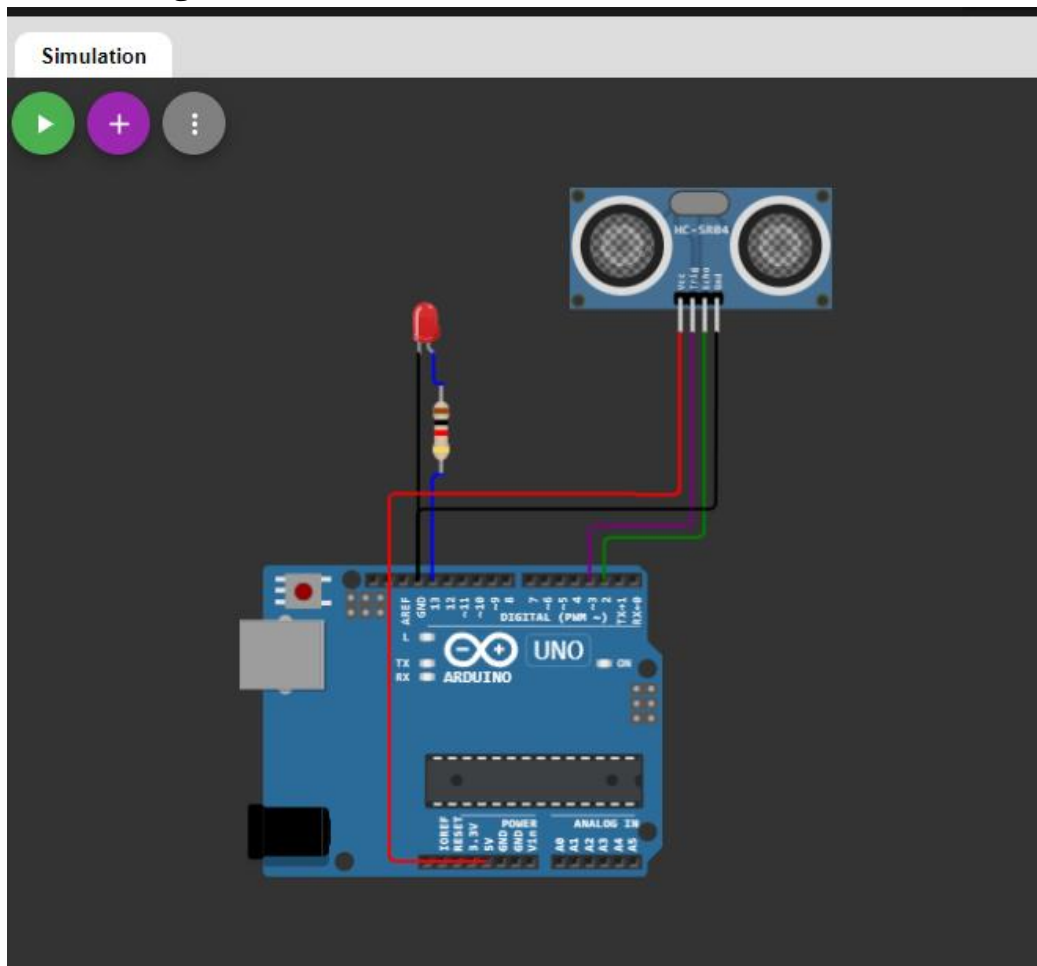
```

```

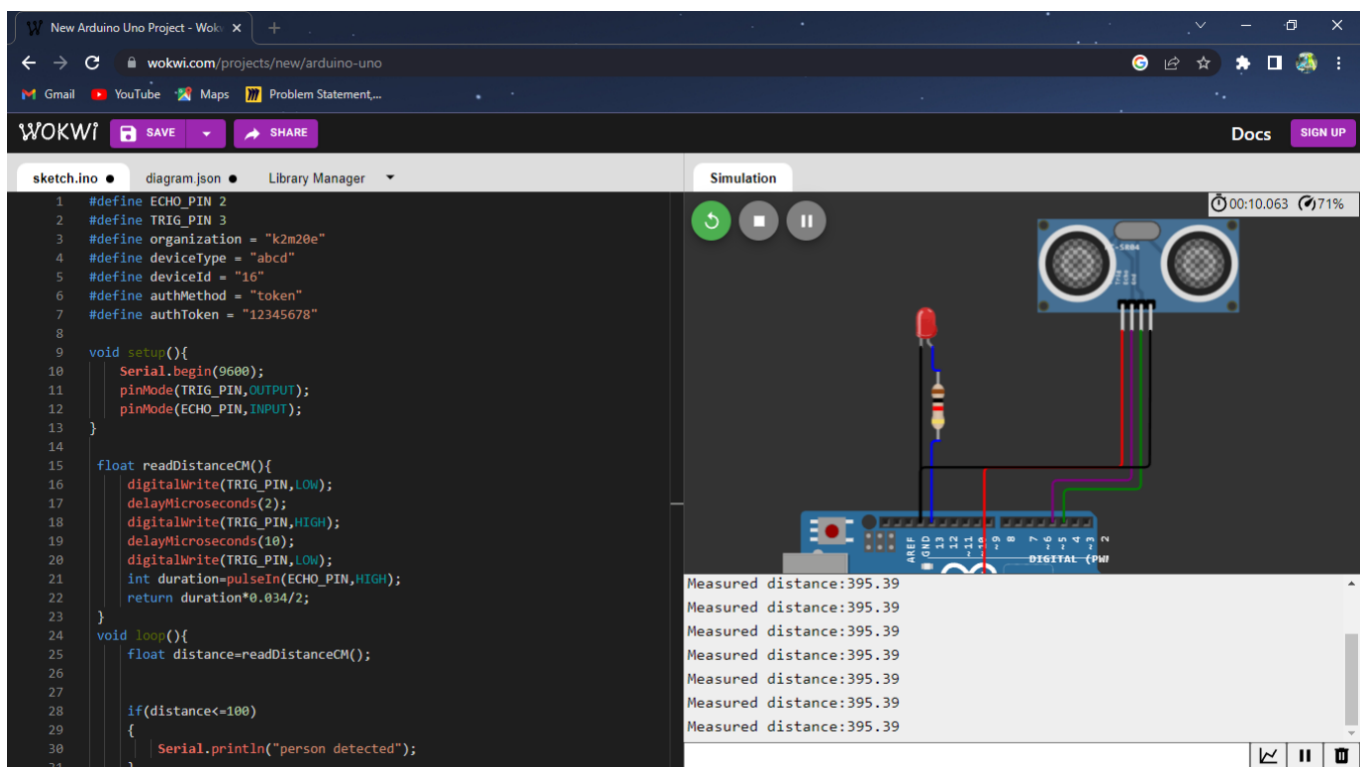
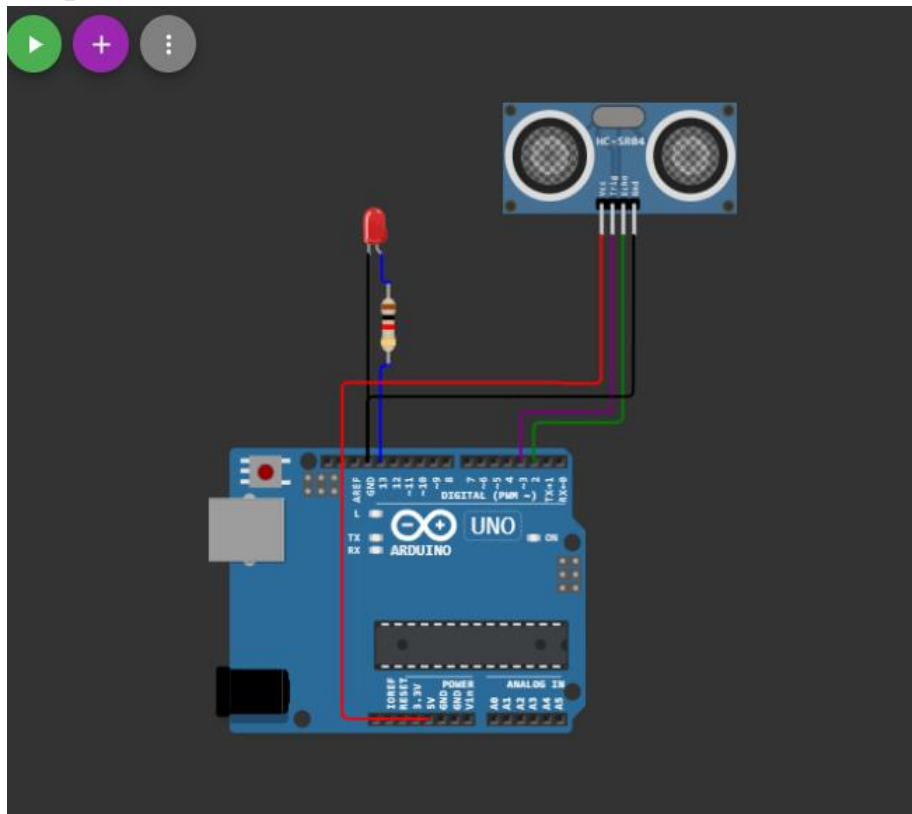
"connections": [
  [ "led1:C", "uno:GND.1", "black", [ "v0" ] ],
  [ "led1:A", "r1:1", "blue", [ "v0" ] ],
  [ "r1:2", "uno:13", "blue", [ "h0" ] ],
  [ "ultrasonic1:TRIG", "uno:3", "purple", [ "v125.11", "h-70.38" ] ],
  [ "uno:2", "ultrasonic1:ECHO", "green", [ "v-27.25", "h63.19" ] ],
  [ "ultrasonic1:GND", "uno:GND.1", "black", [ "v37.64", "h-0.36", "v76.64", "h-
194.93" ] ],
  [
    "ultrasonic1:VCC",
    "uno:5V",
    "red",
    [ "v105.12", "h-28.34", "v-0.83", "h-159.94", "v236.58" ]
  ]
]
}

```

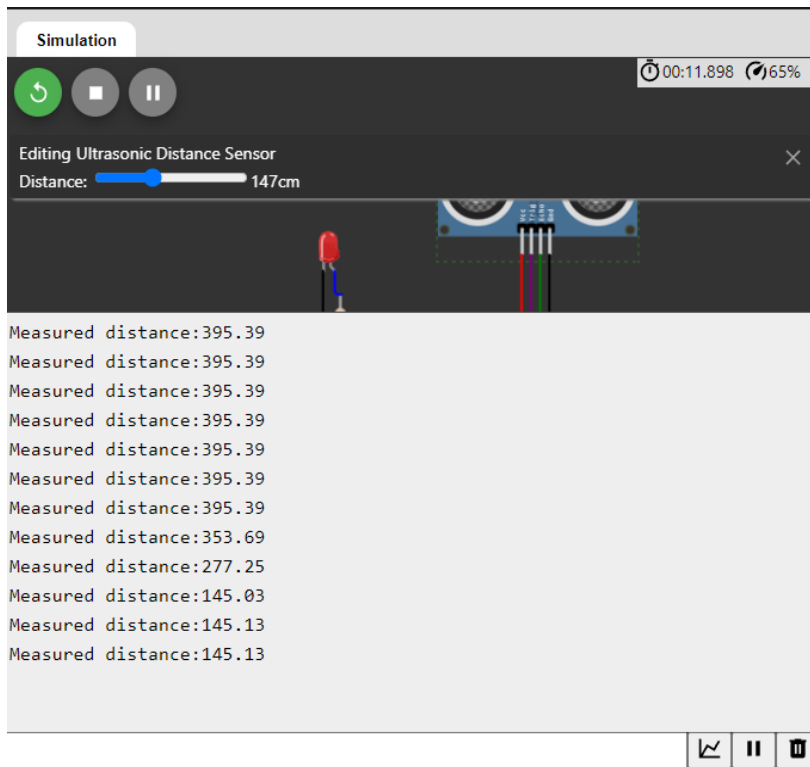
Circuit Diagram:



Output:

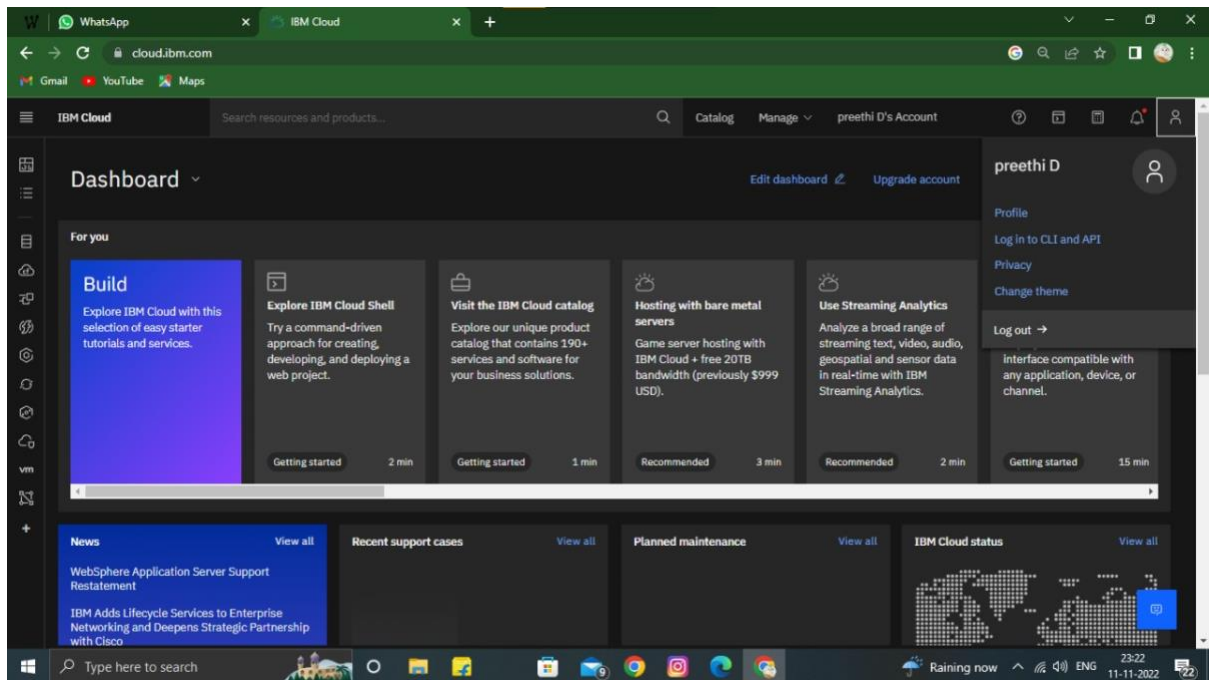


Wokwi output



Wokwi link:<https://wokwi.com/projects/348411044811506260>

IBM Cloud



IBM watson IoT platform

