

#### Assignment -4

Assignment Date	5 NOVEMBER 2022
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Maximum Marks	2 Marks
Team ID	PNT2022TMID46961

##### Question-1:

*Write code and connections in wokwi for the ultrasonic sensor.*

*Whenever the distance is less than 100 cms send an "alert" to the IBM cloud and display in the device recent events.*

*Upload document with wokwi share link and images of IBM cloud*

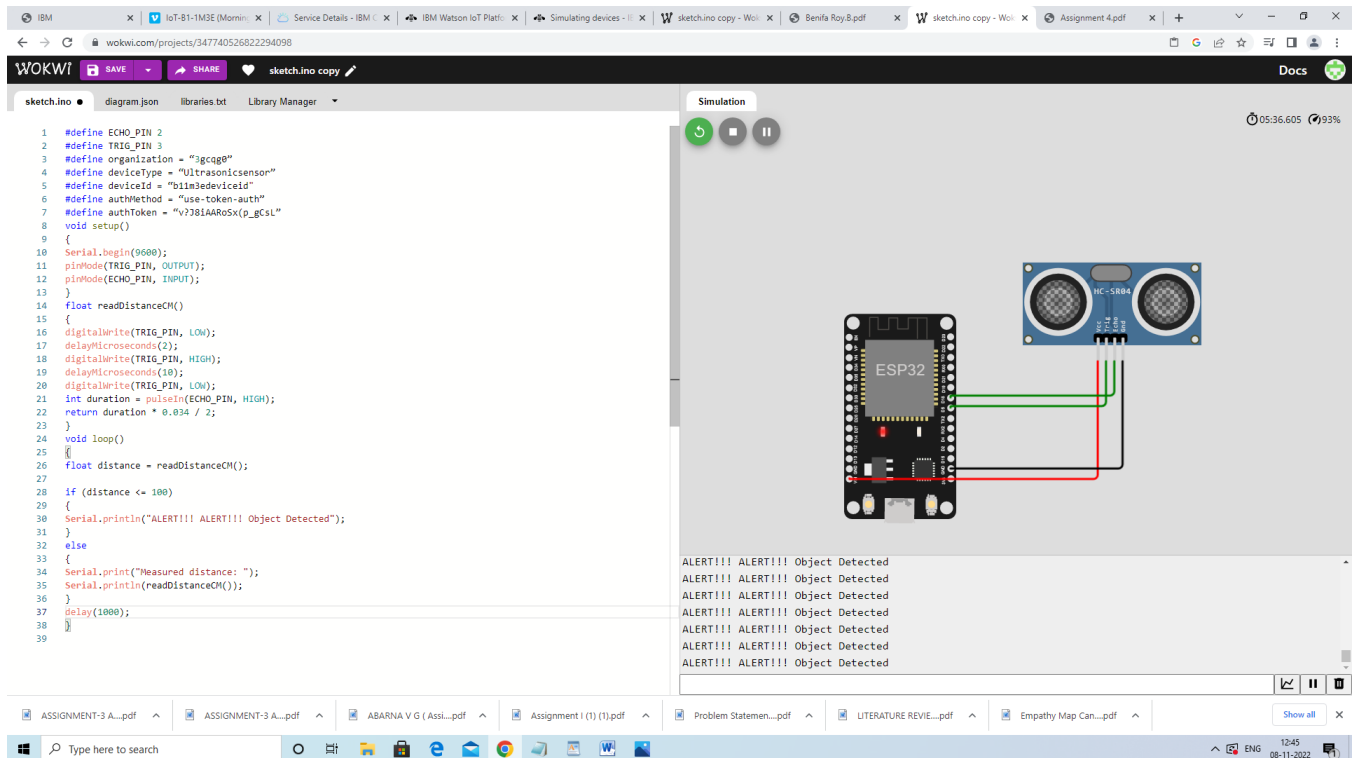
##### Solution:

```
#define ECHO_PIN 2
#define TRIG_PIN 3
#define organization = "3gcqg0"
#define deviceType = "Ultrasonicsensor"
#define deviceId = "b11m3edeviceid"
#define authMethod = "use-token-auth"
#define authToken = "v?J8iAARoSx(p_gCsL"
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("ALERT!!! ALERT!!! Object Detected");
}
else
{
Serial.print("Measured distance: ");
Serial.println(readDistanceCM());
}
delay(1000);
}
```

**SIMULATION OUTPUT:**



Wokwi Share Link:

<https://wokwi.com/projects/347743036681224788>

IBM Cloud Device Details:

The screenshot shows the IBM Watson IoT Platform interface. The 'Browse Devices' page displays a table with one device: b11m3edevicid, which is disconnected. The device is an Ultrasonicsensor. Below the table, a detailed view of the device is shown, including its ID, type, date added, and connection status.

Device ID	Status	Device Type	Class ID	Date Added	Descriptive Location	Added By	Device Class
b11m3edevicid	Disconnected	Ultrasonicsensor	Device	8 Nov 2022 10:03		abarna1424@gmail.com	

Identity	Device Information	Recent Events	State	Logs
Device ID	b11m3edevicid			
Device Type	Ultrasonicsensor			
Date Added	8 Nov 2022 10:03			
Added By	abarna1424@gmail.com			
Connection Status	Disconnected			

IBM Cloud Device Recent Details:

The screenshot shows the 'Recent Events' tab for the device b11m3edevicid. It displays a list of events showing a live stream of data. The events are triggered by an alert and show object detection counts.

Event	Value	Format	Last Received
event_1	["ALERT!!!ALERT!!!object Detected":38]	json	a few seconds ago
event_1	["ALERT!!!ALERT!!!object Detected":2]	json	a few seconds ago
event_1	["ALERT!!!ALERT!!!object Detected":100]	json	a few seconds ago
event_1	["ALERT!!!ALERT!!!object Detected":74]	json	a few seconds ago
event_1	["ALERT!!!ALERT!!!object Detected":82]	json	a few seconds ago