

G.Kavina Assignment -4

Question-1: Write code and connections in wokwi for ultrasonic sensor.
Whenever distance is less than 100 cms send “alert” to ibm cloud and display in device recent events.

Solution:

```
#define ECHO_PIN 2
#define TRIG_PIN 3
#define organization ="h2w1a5"
#define deviceType=" arduino"
#define deviceId ="54321"
#define authMethod ="use-token-auth"
#define authToken ="9876543210"

void setup() {
  // put your setup code here, to run once:
  Serial.begin(9600);
  pinMode(TRIG_PIN,OUTPUT);
  pinMode(ECHO_PIN, INPUT);
}

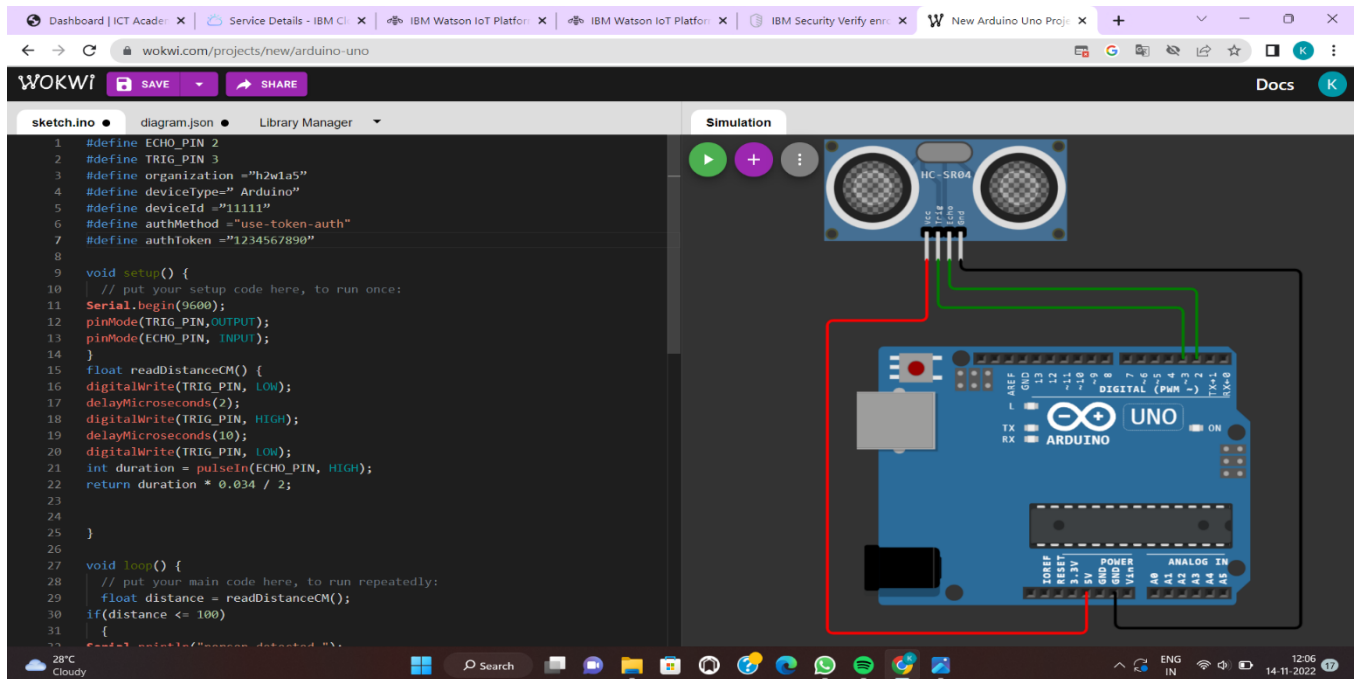
float readDistanceCM() {
  digitalWrite(TRIG_PIN, LOW);
  delayMicroseconds(2);
  digitalWrite(TRIG_PIN, HIGH);
  delayMicroseconds(10);
  digitalWrite(TRIG_PIN, LOW);
```

```
int duration = pulseIn(ECHO_PIN, HIGH);  
return duration * 0.034 / 2;
```

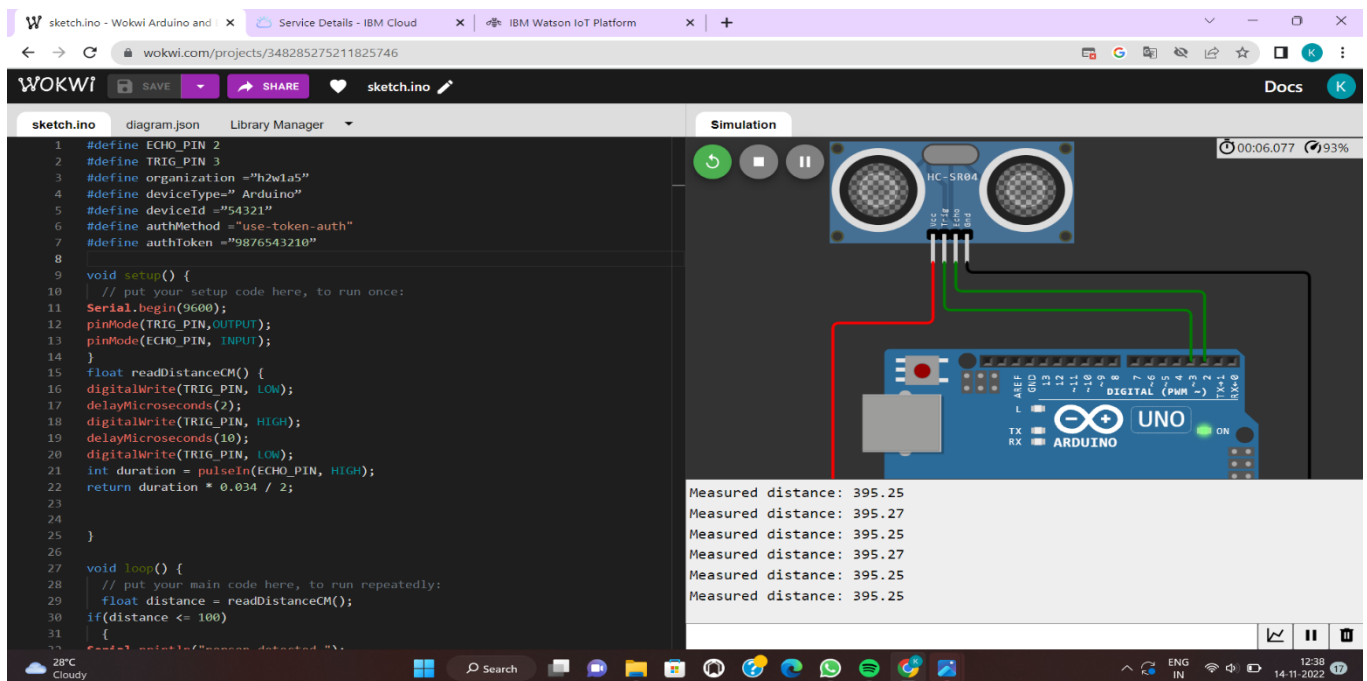
```
}
```

```
void loop() {  
  // put your main code here, to run repeatedly:  
  float distance = readDistanceCM();  
  if(distance <= 100)  
  {  
    Serial.println("person detected ");  
  }  
  else{  
    Serial.print("Measured distance: ");  
    Serial.println(readDistanceCM());  
  }  
  delay(1000);
```

```
}
```



Output:



IBM CLOUD

Device Recent Events

The screenshot shows the IBM Watson IoT Platform interface. The top navigation bar includes the IBM logo, user profile (kavina04942002@gmail.com, ID: h2w1a5), and a search bar. The left sidebar contains icons for Home, Devices, Recent Events, State, Device Information, Metadata, Diagnostics, Connection Logs, and Device Actions. The main content area is titled "Device Drilldown - 54321" and features a "Back" button. Below the title, there is a "Device Credentials" section with a sub-header "Device Credentials". A message states: "You registered your device to the organization. Add these credentials to the device to connect it to the platform. After the device is connected, you can navigate to view connection and event details." Below this message is a table with the following details:

Organization ID	h2w1a5
Device Type	arduino
Device ID	54321
Authentication Method	use-token-auth
Authentication Token	9876543210

Below the table, a warning icon and text state: "Authentication tokens are non-recoverable. If you misplace this token, you will need to re-register the device to generate a new authentication token." A link "Find out how to add these credentials to your device" is provided. At the bottom right, it says "0 Simulations running". The bottom status bar shows "28°C Cloudy", a search bar, and system icons for time (12:35) and date (14-11-2022).

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ID	Status	Type	Device	Last Seen
54321	Disconnected	arduino	Device	Nov 14, 2022 12:35 PM
arduino_1	Connected	arduino	Device	Nov 14, 2022 12:37 PM

Below the table, there is a "Recent Events" section with a sub-header "Recent Events". A message states: "The recent events listed show the live stream of data that is coming and going from this device." Below this message is a table with the following details:

Event	Value	Format	Last Received
event_1	{"version":1,"author":"KAVINA G","editor":"wok...	json	a few seconds ago
event_1	{"version":1,"author":"KAVINA G","editor":"wok...	json	a few seconds ago
event_1	{"version":1,"author":"KAVINA G","editor":"wok...	json	a few seconds ago
event_1	{"version":1,"author":"KAVINA G","editor":"wok...	json	a few seconds ago

At the bottom right, it says "1 Simulation running". The bottom status bar shows "28°C Cloudy", a search bar, and system icons for time (12:38) and date (14-11-2022).