Assignment -4

Python Programming

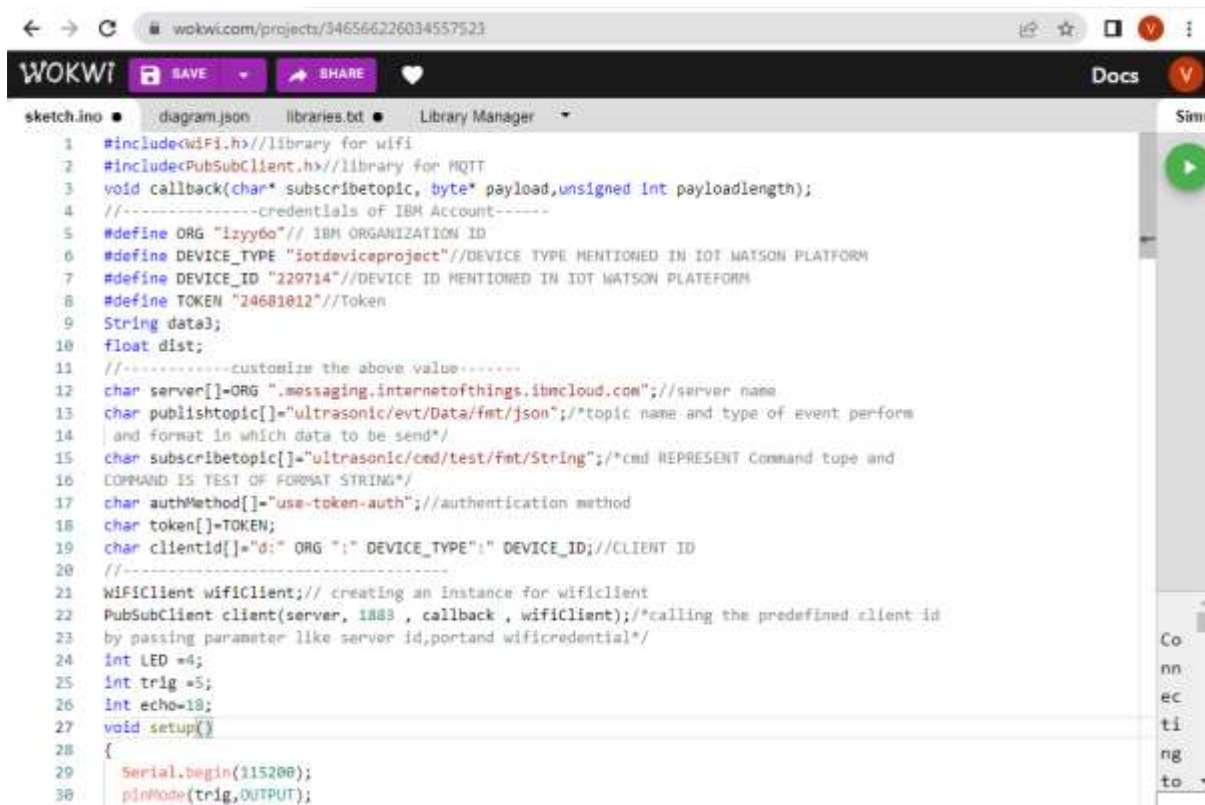| Assignment Date	26 October 2022
Student Name	Mr. Anand Abishek Raja R
Student Roll Number	310619205010
Maximum Marks	2 Marks

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.
Upload document with wokwi share link and images of ibm cloud.

Solution:

```
61      Serial.println("no object is near");
62      object="Near";
63    }
64    else
65    {
66      digitalWrite(LED,LOW);
67      Serial.println("no object found");
68      object="No";
69    }
70    String payload="{\"distance\":";
71    payload +=dist;
72    payload +="," "\"object\":\"";
73    payload += object;
74    payload += "\"}";
75
76    Serial.print("Sending payload: ");
77    Serial.println(payload);
78    if(client.publish(publishtopic, (char*) payload.c_str())){
79      Serial.println("Publish ok");/* if its sucessfully upload data on the cloud then it will print
80      publish ok in serial monitor or else it will print publish failed*/
81    } else{
82      Serial.println("Publish failed");
83    }
84  }
85  void mqttconnect(){
86    if(!client.connected()){
87      Serial.print("Reconnecting client to ");
88      Serial.println(server);
89      while(!!!client.connect(clientid,authMethod, token)){
90        Serial.print(".");
91        delay(500);
```

```
92      }
93      initManagedDevice();
94      Serial.println();
95    }
96  }
97  void wificonnect()//function defenition for wificonnect
98  {
99    Serial.println();
100   Serial.print("Connecting to ");
101   WiFi.begin("Wokwi.GUEST", "",6);//PASSING THE WIFI CREDIDENTIALS TO ESTABLISH CONNECTION
102   while (WiFi.status() !=WL_CONNECTED){
103     delay(500);
104     Serial.print(".");
105   }
106   Serial.println("");
107   Serial.println("WiFi connected");
108   Serial.println("IP address");
109   Serial.println(WiFi.localIP());
110 }
111 void initManagedDevice(){
112   if(client.subscribe(subscribetopic)){
113     Serial.println((subscribetopic));
114     Serial.println("subscribe to cmd OK");
115   }else{
116     Serial.println("subscribe to cmd failed");
117   }
118 }
119 void callback(char* subscribetopic,byte*payload,unsigned int payloadLength)
120 {
121   Serial.print("callback invoked for topic: ");
122   Serial.println(subscribetopic);
```

```
123  for(int i=0; i< payloadLength; i++){
124    //Serial.print((char)payload[1]);
125    data3 +=(char)payload[1];
126  }
127  //Serial.println("dta: "+ data3);
128  //if(data3=="Near")
129  //{
130  //Serial.println(data3);
131  //digitalWrite(LED,HIGH);
132  //}
133  //else
134  //{
135  //Serial.println(data3);
136  //digitalWrite(LED,LOW);
137  //}
138  data3="";
139  }
```

OUTPUT:
DATA IS SENT TO IBM CLOUD WHEN NO OBJECT IS DETECTED

When no object is detected

When object is detected in ultrasonic detector