

ASSIGNMENT-4

The screenshot shows the Wokwi web IDE interface. On the left, the 'sketch.ino' file is open, displaying an Arduino sketch for an IoT project. The sketch includes headers for WiFi, PubSubClient, and ArduinoJson. It defines an ESP32 device with a specific ID and token, and sets up a PubSubClient to connect to an IBM Cloud IoT gateway. The main loop publishes distance data from an ultrasonic sensor to a specific topic. On the right, the simulation window shows a 3D model of an ESP32 microcontroller connected to an HC-SR04 ultrasonic sensor. Below the simulation, a log window shows the output of the program, including 'Publish OK' and 'Sending payload:{"Distance":40}'.

```
1 #include <WiFi.h>
2 #include <PubSubClient.h>
3 #include <ArduinoJson.h>
4
5 WiFiClient wifiClient;
6
7 #define ORG "qwgdcc"
8 #define DEVICE_TYPE "viji123"
9 #define DEVICE_ID "assignment"
10 #define TOKEN "w451QtaN_ahNy&wQ1a"
11 #define speed 0.034
12
13 char server[] = ORG".messaging.internetofthings.ibmcloud.com";
14 char publishTopic[] = "iot-2/evt/abcd_1/fmt/json";
15 char topic[] = "iot-2/cmd/home/fmt/String";
16 char authMethod[] = "use-token-auth";
17 char token[] = TOKEN;
18 char clientId[] = "d:" ORG ":" DEVICE_TYPE ":" DEVICE_ID;
19 PubSubClient client(server, 1883, wifiClient);
20 void publishData();
21
22 const int trigpin=5;
23 const int echopin=18;
24 String command;
25 String data="";
26
27 long duration;
28 int dist;
29
30 void setup()
```

The screenshot shows the IBM Watson IoT Platform dashboard. The top navigation bar includes 'Browse', 'Action', 'Device Types', and 'Interfaces'. A sidebar on the left contains various icons for navigation. The main content area displays a table of devices, with one device named 'assignment' highlighted. Below the table, a 'Recent Events' tab is selected, showing a list of events. The events table has columns for 'Event', 'Value', 'Format', and 'Last Received'. The events listed are for the topic 'abcd_1' with values like '{"Distance":75}', '{"Distance":89}', and '{"Distance":37}', all in 'json' format and received 'a few seconds ago'.

Event	Value	Format	Last Received
abcd_1	{"Distance":75}	json	a few seconds ago
abcd_1	{"Distance":89}	json	a few seconds ago
abcd_1	{"Distance":37}	json	a few seconds ago

LINK IN WOKWI-<https://wokwi.com/projects/347482708446806610>