

Date	21 October 2022
Student Name	DEEPALAKSHMI M
Student Register Number	211419106061
Maximum Marks	2 Marks

WOKWI WEB URL:

<https://wokwi.com/projects/346215619233841746>

SNAPSHOTS OF SIMULATION:

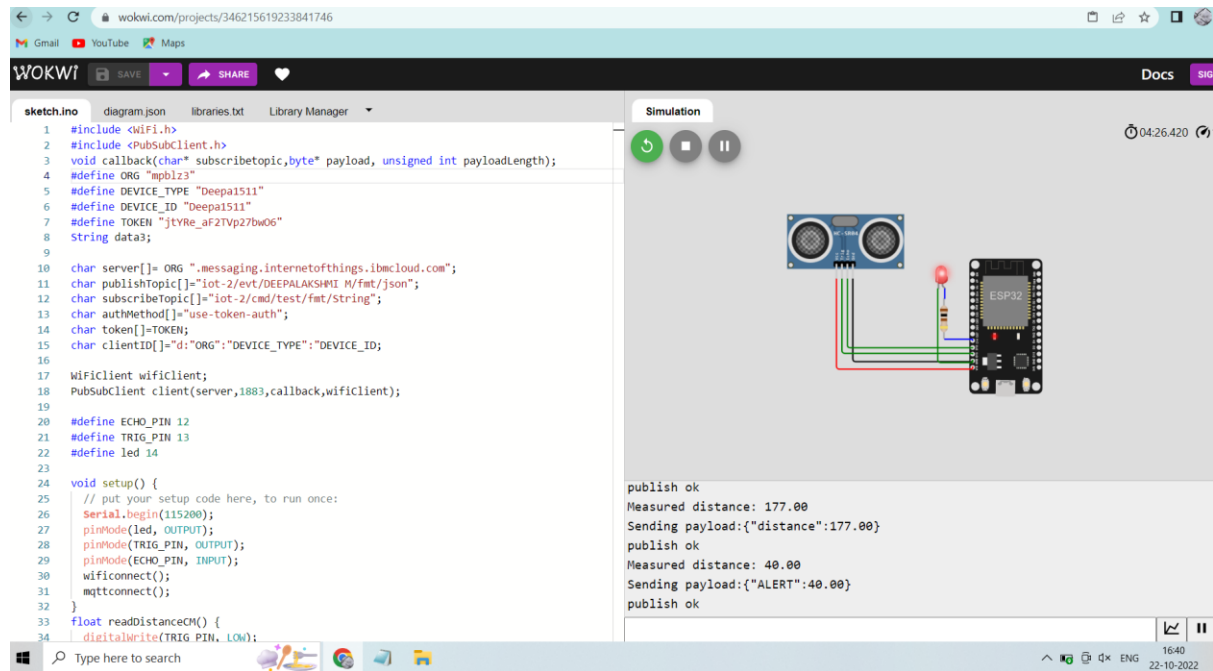
The screenshot displays the Wokwi web interface for a project titled "wokwi.com/projects/346215619233841746". The interface is divided into two main sections: a code editor on the left and a simulation window on the right.

Code Editor (Left): The code is written in C++ for an ESP32 microcontroller. It includes the following components:

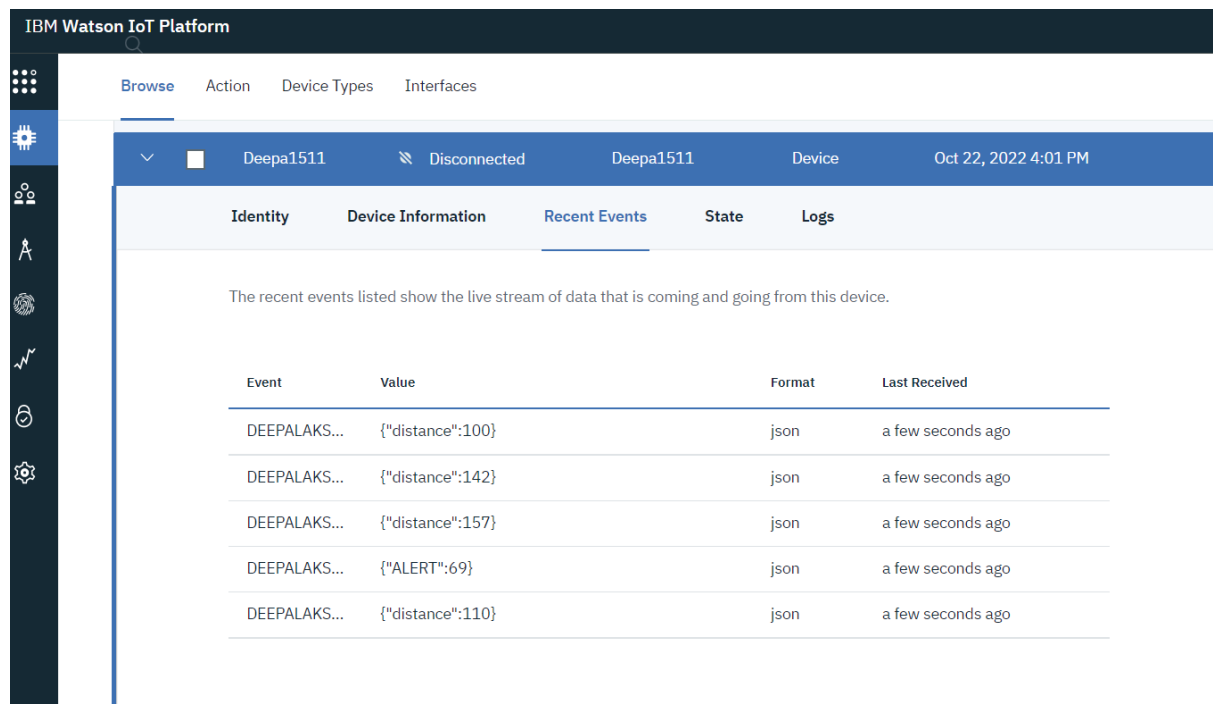
- Headers:** `<WiFi.h>` and `<PubSubClient.h>`.
- Callback Function:** `void callback(char* subscribetopic,byte* payload, unsigned int payloadlength);`
- Constants:** `ORG "mpblz3"`, `DEVICE_TYPE "Deepal511"`, `DEVICE_ID "Deepal511"`, `TOKEN "jtYRe_aF2Tv27bw06"`, and `String data3;`.
- MQTT Client Setup:** `char server[] = ORG ".messaging.internetofthings.ibmcloud.com";`, `char publishTopic[] = "iot-2/evt/DEEPALAKSHMI M/fmt/json";`, `char subscribeTopic[] = "iot-2/cmd/test/fmt/String";`, `char authMethod[] = "use-token-auth";`, `char token[] = TOKEN;`, and `char clientId[] = "d:" + ORG + ":" + DEVICE_TYPE + ":" + DEVICE_ID;`. The client is initialized with `PubSubClient client(server,1883,callback,wifiClient);`.
- Pin Definitions:** `#define ECHO_PIN 12`, `#define TRIG_PIN 13`, and `#define led 14`.
- Setup Function:** `void setup() {` includes `Serial.begin(115200);`, `pinMode(led, OUTPUT);`, `pinMode(TRIG_PIN, OUTPUT);`, `pinMode(ECHO_PIN, INPUT);`, `wifiConnect();`, and `mqttConnect();`.
- Distance Measurement:** `float readDistanceCM() {` uses `digitalWrite(TRIG_PIN, LOW);`.

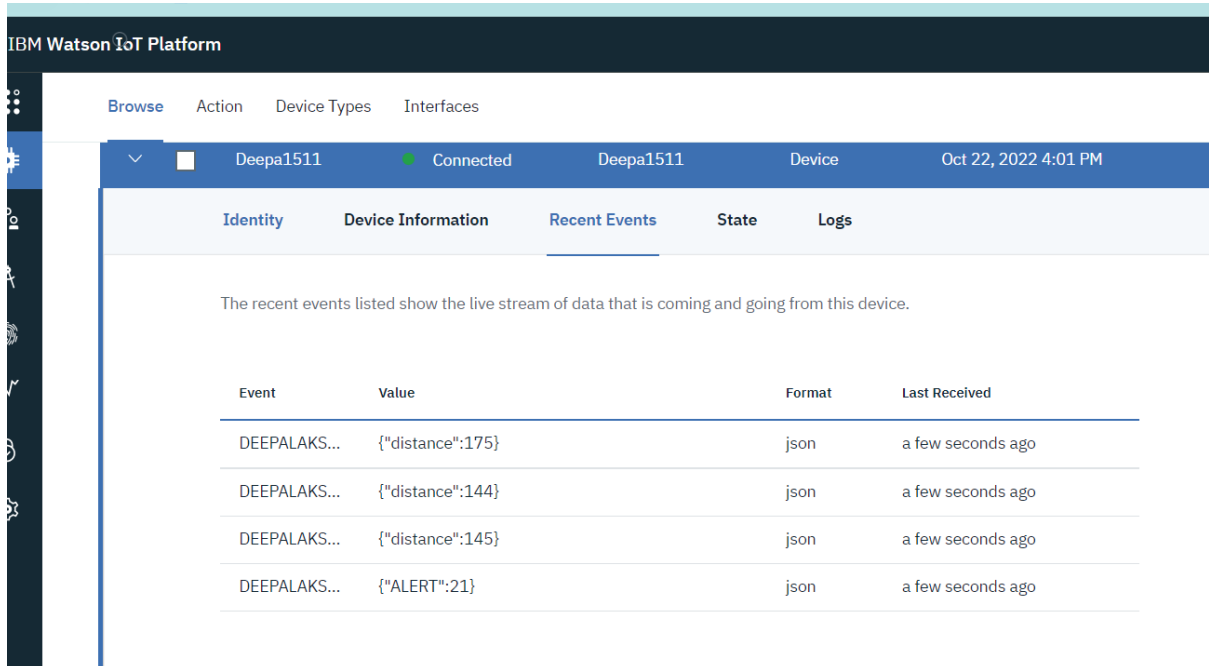
Simulation Window (Right): The simulation shows an ESP32 microcontroller connected to an ultrasonic sensor (HC-SR04). The output log displays the following sequence of events:

- `publish ok`
- `Measured distance: 163.00`
- `Sending payload:{"distance":163.00}`
- `publish ok`
- `Measured distance: 107.00`
- `Sending payload:{"distance":107.00}`
- `publish ok`



IMAGES OF IBM CLOUD:





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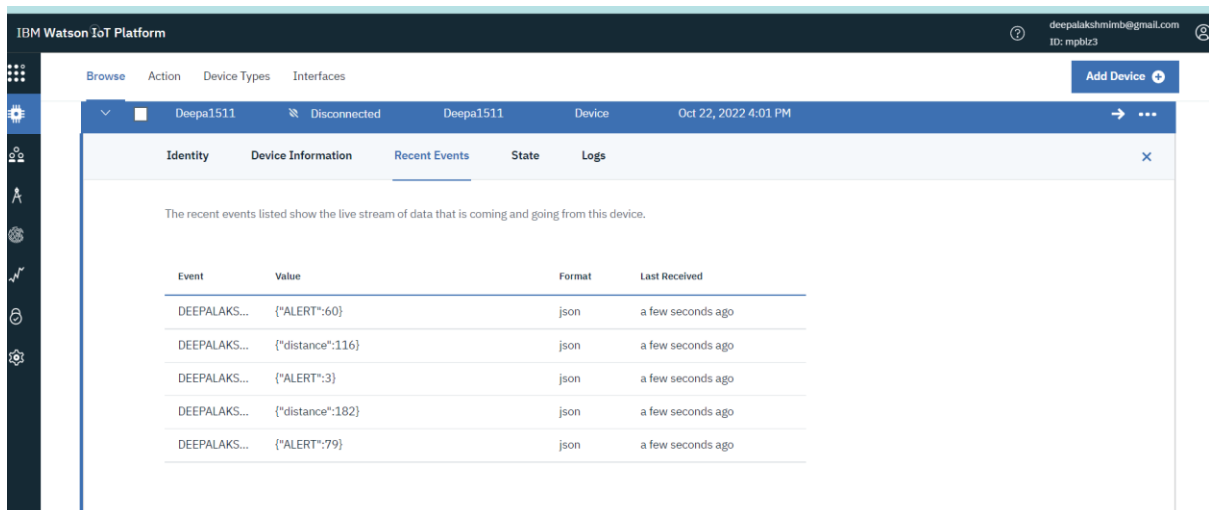
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Deepa1511 Connected Deepa1511 Device Oct 22, 2022 4:01 PM

Identity Device Information Recent Events State Logs

The recent events listed show the live stream of data that is coming and going from this device.

Event	Value	Format	Last Received
DEEPALAKS...	{"distance":175}	json	a few seconds ago
DEEPALAKS...	{"distance":144}	json	a few seconds ago
DEEPALAKS...	{"distance":145}	json	a few seconds ago
DEEPALAKS...	{"ALERT":21}	json	a few seconds ago



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Deepa1511 Disconnected Deepa1511 Device Oct 22, 2022 4:01 PM

Identity Device Information Recent Events State Logs

The recent events listed show the live stream of data that is coming and going from this device.

Event	Value	Format	Last Received
DEEPALAKS...	{"ALERT":60}	json	a few seconds ago
DEEPALAKS...	{"distance":116}	json	a few seconds ago
DEEPALAKS...	{"ALERT":3}	json	a few seconds ago
DEEPALAKS...	{"distance":182}	json	a few seconds ago
DEEPALAKS...	{"ALERT":79}	json	a few seconds ago