WEEK-2 ASSIGNMENT

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INTERN DOMAIN: IOT

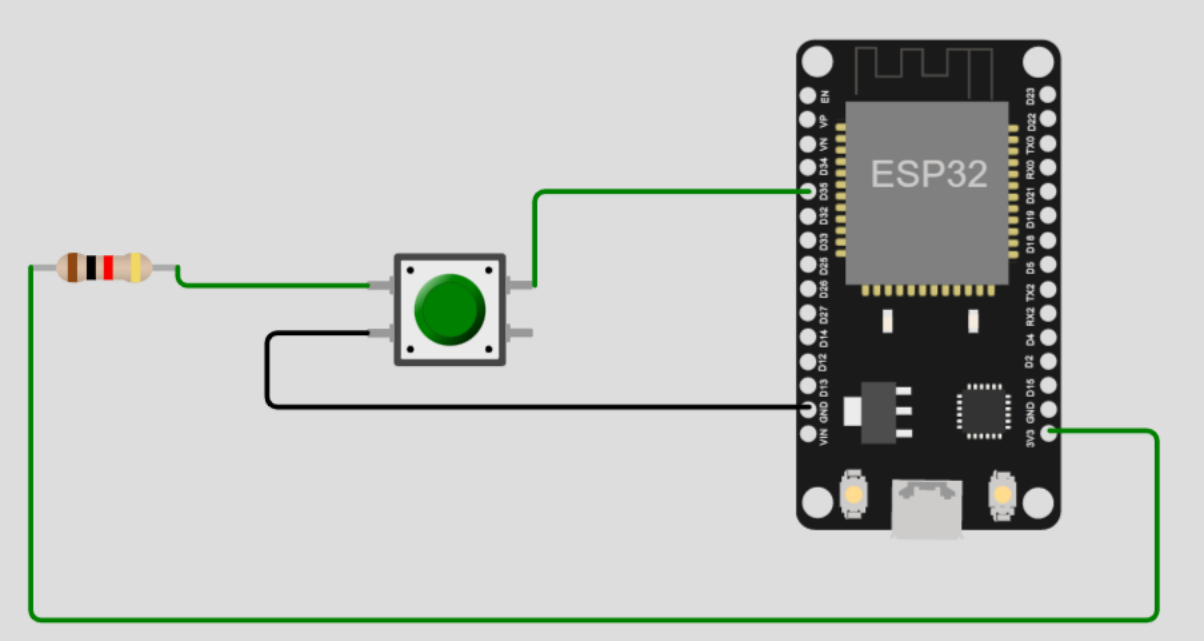
AIM:

In Wokwi, connect push button and upload 0 and 1 to IBM cloud

WOKWI LINK:

https://wokwi.com/projects/new/esp32

CIRCUIT DIAGRAM:



CODE:

```
#include <WiFi.h>//library for wifi
#include <PubSubClient.h>//library for MQtt
void callback(char* subscribetopic, byte* payload,
unsigned int payloadLength);

//-------credentials of IBM Accounts------

#define ORG "zjq3ca"//IBM ORGANITION ID
#define DEVICE_TYPE "wokwi"//Device type
mentioned in ibm watson IOT Platform
#define DEVICE_ID "1234"//Device ID mentioned in
ibm watson IOT Platform
#define TOKEN "12345678"     //Token
String data3;
float h, t;

//-------- Customise the above values --------
char server[] = ORG
".messaging.internetofthings.ibmcloud.com";// Server
Name
char publishTopic[] = "iot-2/evt/Data/fmt/json";//
topic name and type of event perform and format in
which data to be send
char subscribetopic[] = "iot-
2/cmd/command/fmt/String";// cmd  REPRESENT
command type AND COMMAND IS TEST OF FORMAT
STRING
```

```
char authMethod[] = "use-token-auth";//
authentication method
char token[] = TOKEN;
char clientId[] = "d:" ORG ":" DEVICE_TYPE ":"
DEVICE_ID;//client id

//-------------------------------------
WiFiClient wifiClient; // creating the instance for
wificlient
PubSubClient client(server, 1883, callback ,wifiClient);
//calling the predefined client id by passing parameter
like server id,portand wificredential

void setup() {
  pinMode(32,INPUT);
  Serial.begin(115200);
  wificonnect();
  mqttconnect();
}

void loop() {
  int buttonstate = digitalRead(32);
  Serial.print("Button State = ");
  Serial.println(buttonstate);
  PublishData(buttonstate);
  delay(1000);
  if (!client.loop()) {
    mqttconnect();
```

```
  }
}

/*.....retrieving to
Cloud.....*/

void PublishData(bool buttonstate) {
  mqttconnect();//function call for connecting to ibm
  String payload = "{\"Button State\":";
  payload += buttonstate;
  payload += "}";

  Serial.print("Sending payload: ");
  Serial.println(payload);

  if (client.publish(publishTopic, (char*)
payload.c_str())) {
    Serial.println("Publish ok");
  } else {
    Serial.println("Publish failed");
  }

}

void mqttconnect() {
  if (!client.connected()) {
    Serial.print("Reconnecting client to ");
    Serial.println(server);
```

```
   while (!!!client.connect(clientId, authMethod,
token)) {
     Serial.print(".");
     delay(500);
    }

    initManagedDevice();
    Serial.println();
  }
}

void wificonnect() //function defination for wificonnect
{
  Serial.println();
  Serial.print("Connecting to ");

  WiFi.begin("Wokwi-GUEST", "", 6);//passing wifi
credentials to establish connection
  while (WiFi.status() != WL_CONNECTED) {
    delay(500);
    Serial.print(".");
  }
  Serial.println("");
  Serial.println("WiFi connected");
  Serial.println("IP address: ");
  Serial.println(WiFi.localIP());
}
```

```
void initManagedDevice() {
  if (client.subscribe(subscribetopic)) {
    Serial.println((subscribetopic));
    Serial.println("subscribe to cmd OK");
  } else {
    Serial.println("subscribe to cmd FAILED");
  }
}

void callback(char* subscribetopic, byte* payload,
unsigned int payloadLength)
{
  Serial.print("callback invoked for topic: ");
  Serial.println(subscribetopic);
}
```

OUTPUT:

```
Connecting to ...
WiFi connected
IP address:
10.10.0.2
Reconnecting client to 1uw3rp.messaging.internetofthings.ibmcloud.com
iot-2/cmd/command/fmt/String
subscribe to cmd OK

Button State = 1
Sending payload: {"Button State":1}
Publish ok
Button State = 1
Sending payload: {"Button State":1}
Publish ok
Button State = 1
```

RESULT:

Thus, the given task has been performed successfully.