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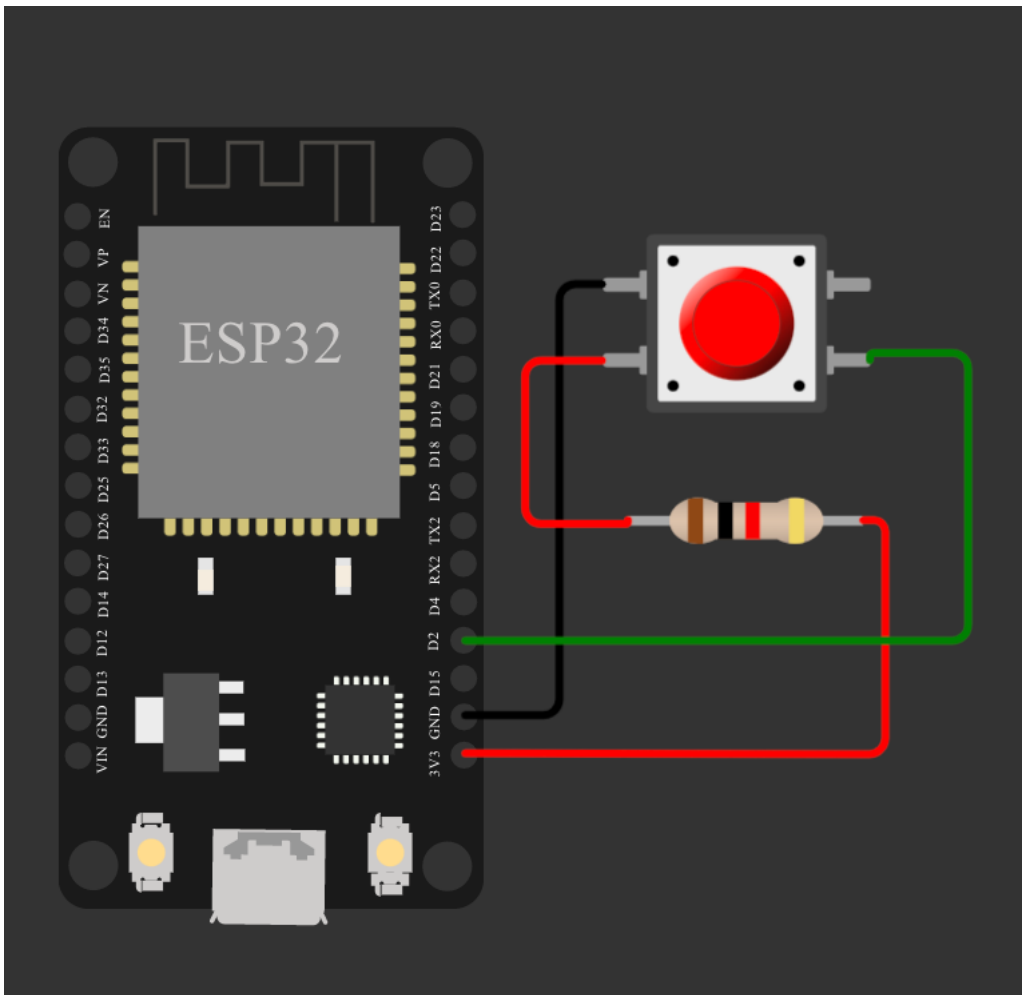
SMARTBRIDGE IoT

ASSIGNMENT-2

AIM: in Wokwi connect push button and upload 0 and 1 to IBM cloud.

SCREENSHOT OF CIRCUIT:



CODE USED:

```
#include <WiFi.h>
#include <PubSubClient.h>

const int buttonPin = 2;
bool buttonstate = false;
```

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```
// Function prototype
void callback(char* subscribetopic, byte* payload, unsigned int
payloadLength);

// Credentials of IBM Accounts
#define ORG "pzza06"
#define DEVICE_TYPE "abcd"
#define DEVICE_ID "1234"
#define TOKEN "12345678"
String data3;
int b;

// Customise the above values
char server[] = ORG ".messaging.internetofthings.ibmcloud.com";
char publishTopic[] = "iot-2/evt/Data/fmt/json";
char subscribetopic[] = "iot-2/cmd/command/fmt/String";
char authMethod[] = "use-token-auth";
char token[] = TOKEN;
char clientId[] = "d:" ORG ":" DEVICE_TYPE ":" DEVICE_ID;

WiFiClient wifiClient;
PubSubClient client(server, 1883, callback, wifiClient);

void setup() {
  pinMode(buttonPin, INPUT_PULLUP);
  Serial.begin(9600);
  wificonnect();
  mqttconnect();
}

void loop() {
  b = digitalRead(buttonPin);
  wificonnect();

  Serial.print("pushbutton status:");
  Serial.println(b);
```

```
  PublishData(b);
  delay(1000);

  if (!client.loop()) {
    mqttconnect();
  }
}

void PublishData(int button) {
  mqttconnect();

  String payload = "{\"pushbutton status\":" + String(button) + "}";

  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 callback(char* subscribetopic, byte* payload, unsigned int
payloadLength) {
  String data3;
  for (int i = 0; i < payloadLength; i++) {
    data3 += (char)payload[i];
  }

  int startIndex = data3.indexOf(":") + 1;
  int endIndex = data3.length() - 1;
  String valueString = data3.substring(startIndex, endIndex);
  int value = valueString.toInt();
```

```
  Serial.print("Received value: ");
  Serial.println(value);
}

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() {
  Serial.println();
  Serial.print("Connecting to ");

  WiFi.begin("Wokwi-GUEST", "", 6);

  while (WiFi.status() != WL_CONNECTED) {
    delay(500);
    Serial.print(".");
  }

  Serial.println("");
  Serial.println("WiFi connected");
  Serial.println("IP address: ");
  Serial.println(WiFi.localIP());
}
```

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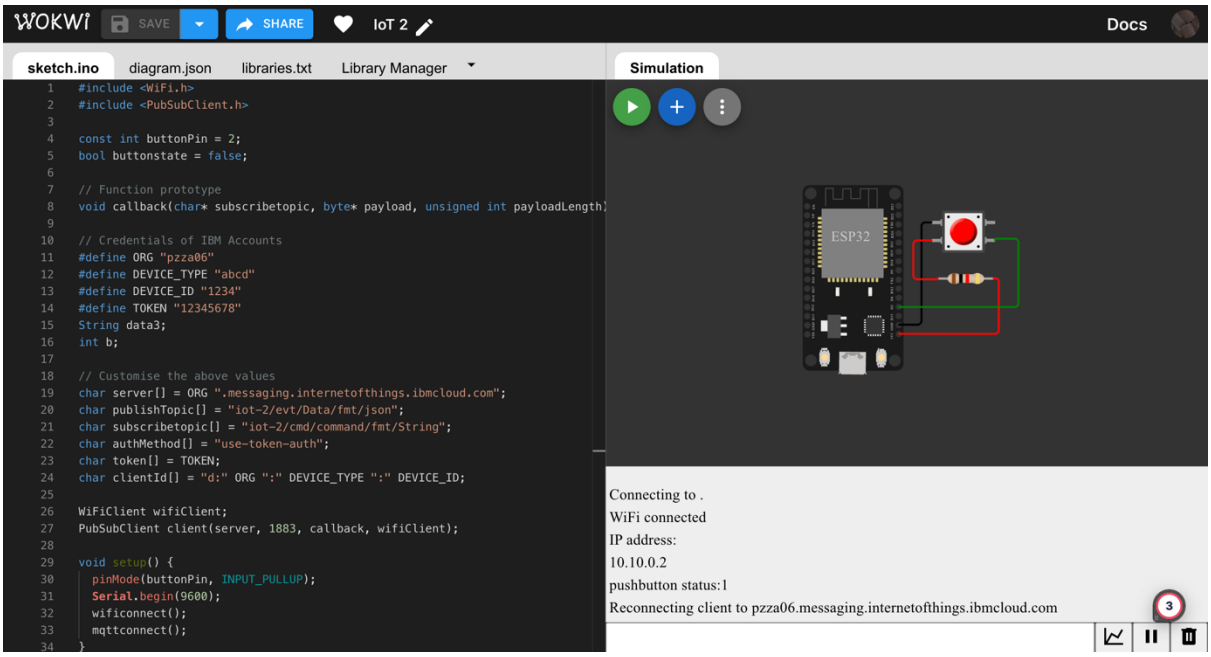
```
void initManagedDevice() {
  if (client.subscribe(subscribetopic)) {
    Serial.println(subscribetopic);
    Serial.println("subscribe to cmd OK");
  } else {
    Serial.println("subscribe to cmd FAILED");
  }
}
```

SCREENSHOT OF WOKWI WORKSPACE:



SCREENSHOT OF IBM CLOUD WORKSPACE: