SMARTBRIDGE EXTERNSHIP (Internet Of Things)

ASSIGNMENT 2

Question: In wokwi connect push button and upload 0 and 1 to ibm cloud

Code:

sk#include <wifi.h>//library for wifi</wifi.h>
#include <pubsubclient.h>//library for MQtt</pubsubclient.h>
#define button 4
#define LED 5
int buttonPin;
void callback(char* subscribetopic, byte* payload, unsigned int payloadLength);
//credentials of IBM Accounts
#define ORG "x44ini"//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;
// 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(buttonPin, INPUT_PULLUP);
 Serial.begin(9600);
 wificonnect();
 mqttconnect();
void loop() {
 int buttonState = digitalRead(buttonPin);
 if (buttonState == HIGH) {
  Serial.println("Button state: 1");
  } else {
  Serial.println("Button state: 0");
 delay(100);
 if (!client.loop()) {
  mqttconnect();
 } // Adjust delay as needed
/*....retrieving to Cloud.....*/
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 the wifi credentials to establish the
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");
```

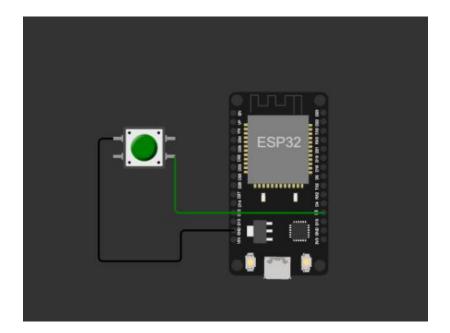
```
}
}
void callback(char* subscribetopic, byte* payload, unsigned int payloadLength)
{
 Serial.print("callback invoked for topic: ");
 Serial.println(subscribetopic);
 for (int i = 0; i < payloadLength; i++) {
  //Serial.print((char)payload[i]);
  data3 += (char)payload[i];
 Serial.println("data: "+ data3);
 if(data3=="lighton")
 {
Serial.println(data3);
digitalWrite(LED,HIGH);
 }
 else
Serial.println(data3);
digitalWrite(LED,LOW);
}
data3="";
```

diagram.json

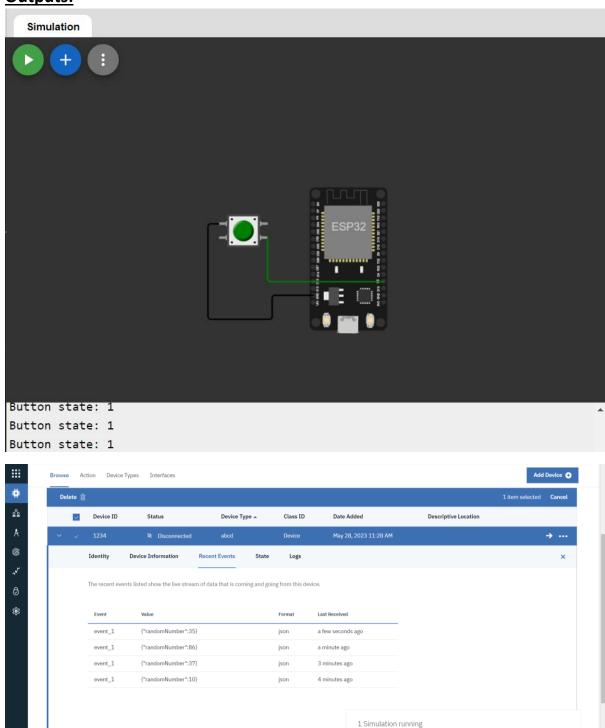
```
{
"version": 1,
```

```
"author": "Shubhankar",
"editor": "wokwi",
"parts": [
 { "type": "wokwi-esp32-devkit-v1", "id": "esp", "top": 0, "left": 0, "attrs": {}},
  "type": "wokwi-pushbutton",
 "id": "btn1",
  "top": 38.73,
  "left": -124.27,
  "attrs": { "color": "green" }
 }
],
"connections": [
 [ "esp:TX0", "$serialMonitor:RX", "", []],
 [ "esp:RX0", "$serialMonitor:TX", "", [] ],
 [ "esp:D2", "btn1:2.r", "green", [ "h0" ] ],
 ["btn1:1.1", "esp:GND.2", "black", ["h-14.53", "v130", "h87.73", "v-32.73"]]
"dependencies": {}
```

Diagram:



Outputs:



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