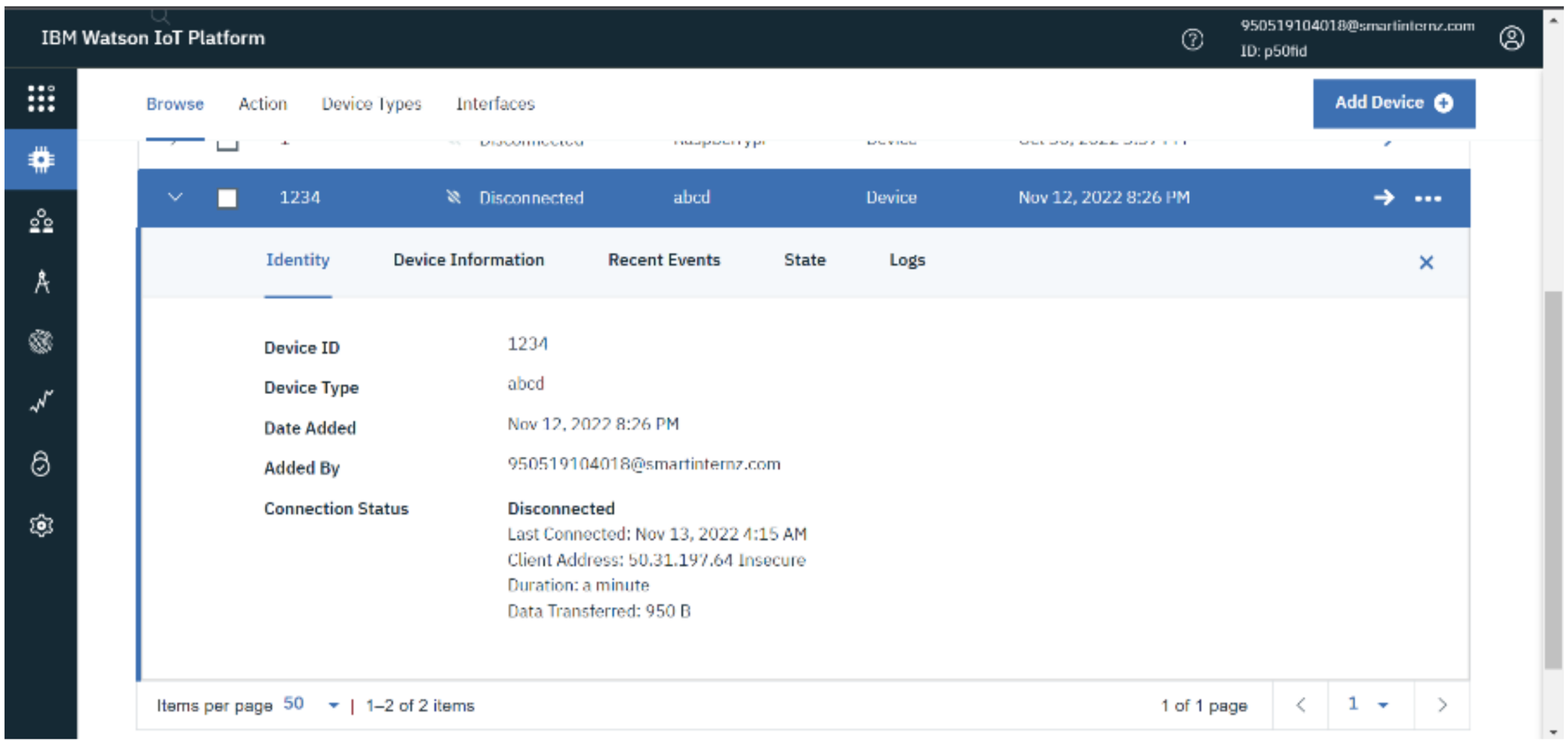
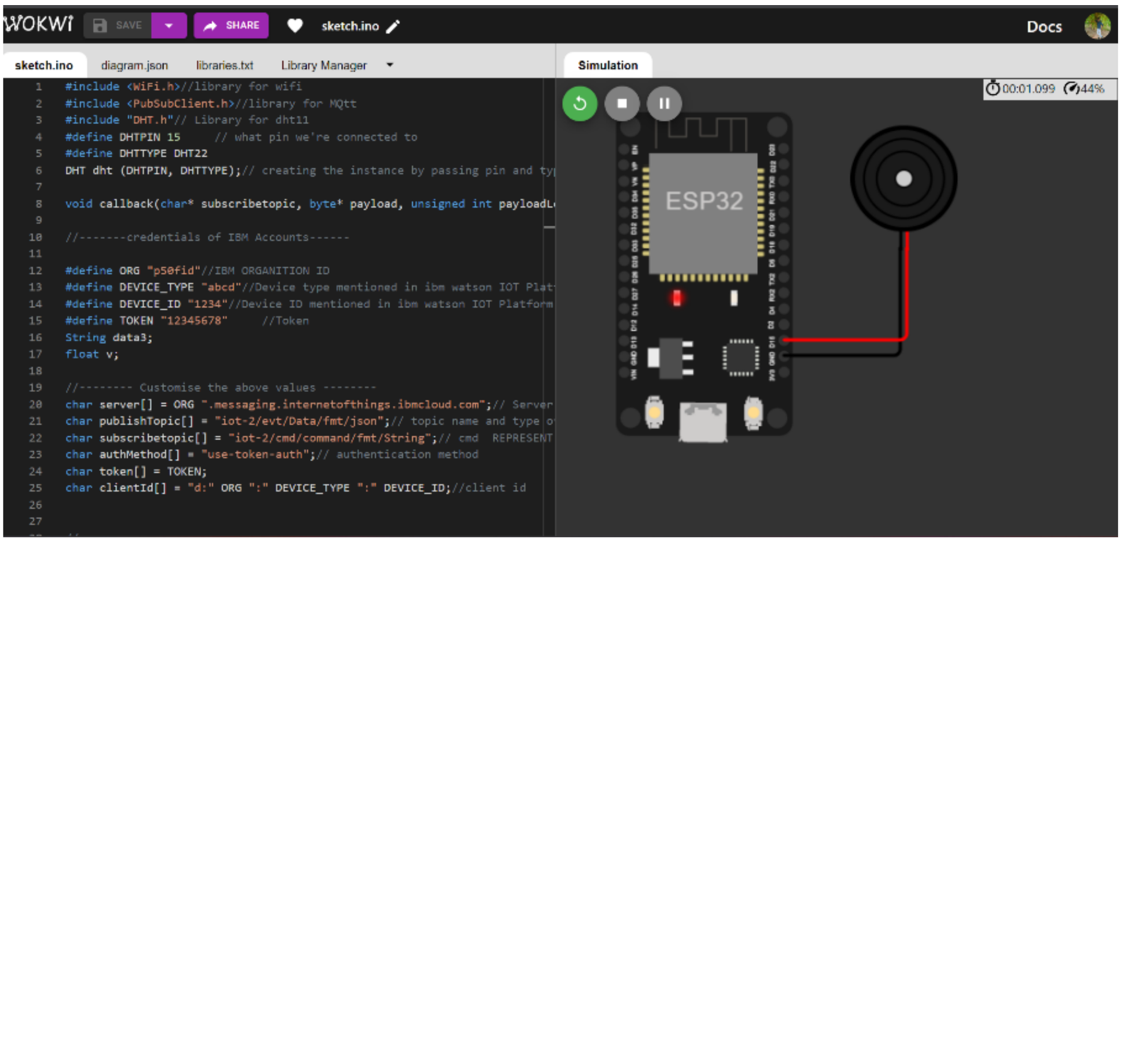
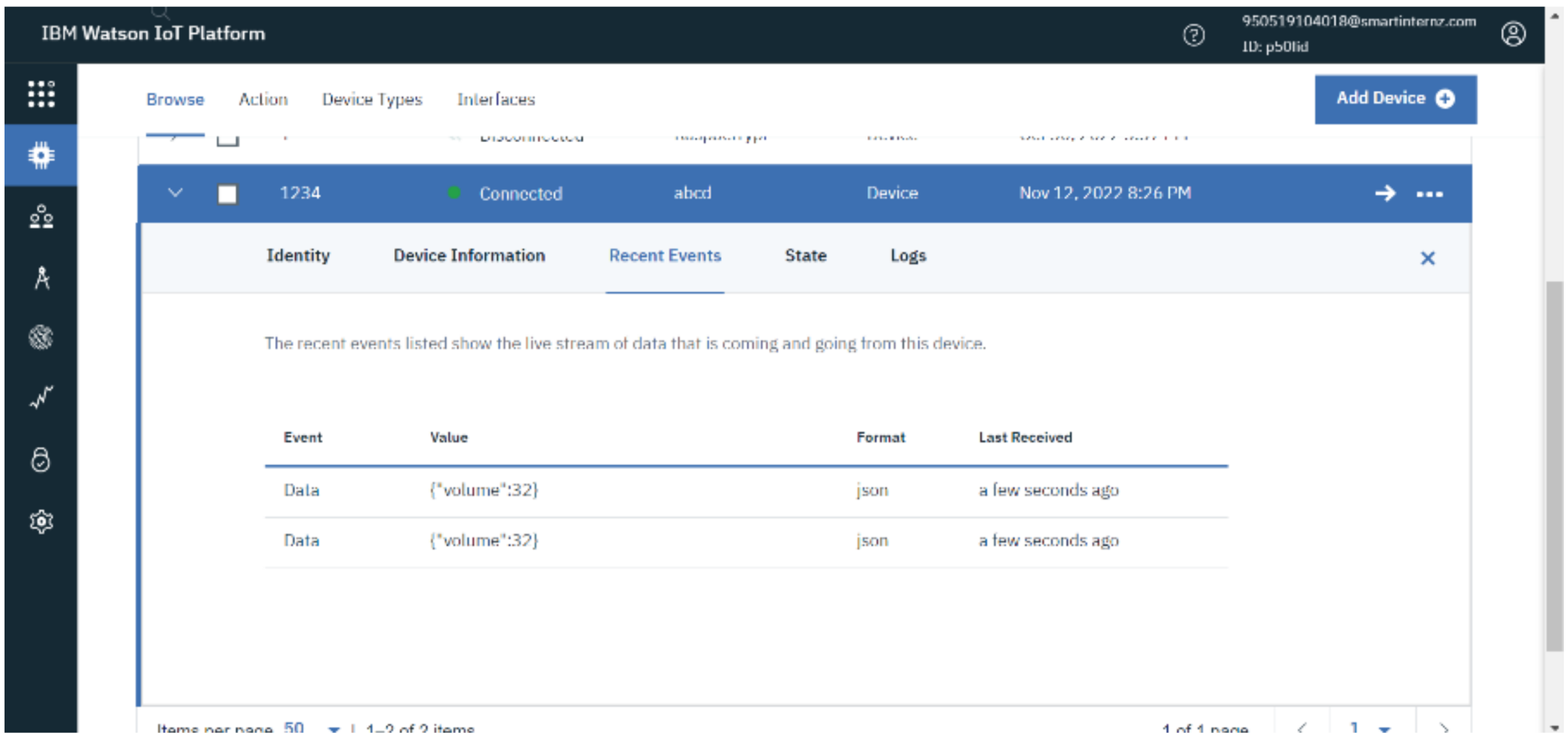
# SPRINT 1

## Creating a device in IBM IOT Platform




## Create a buzzer program and connect ESP32 to IBM IOT platform



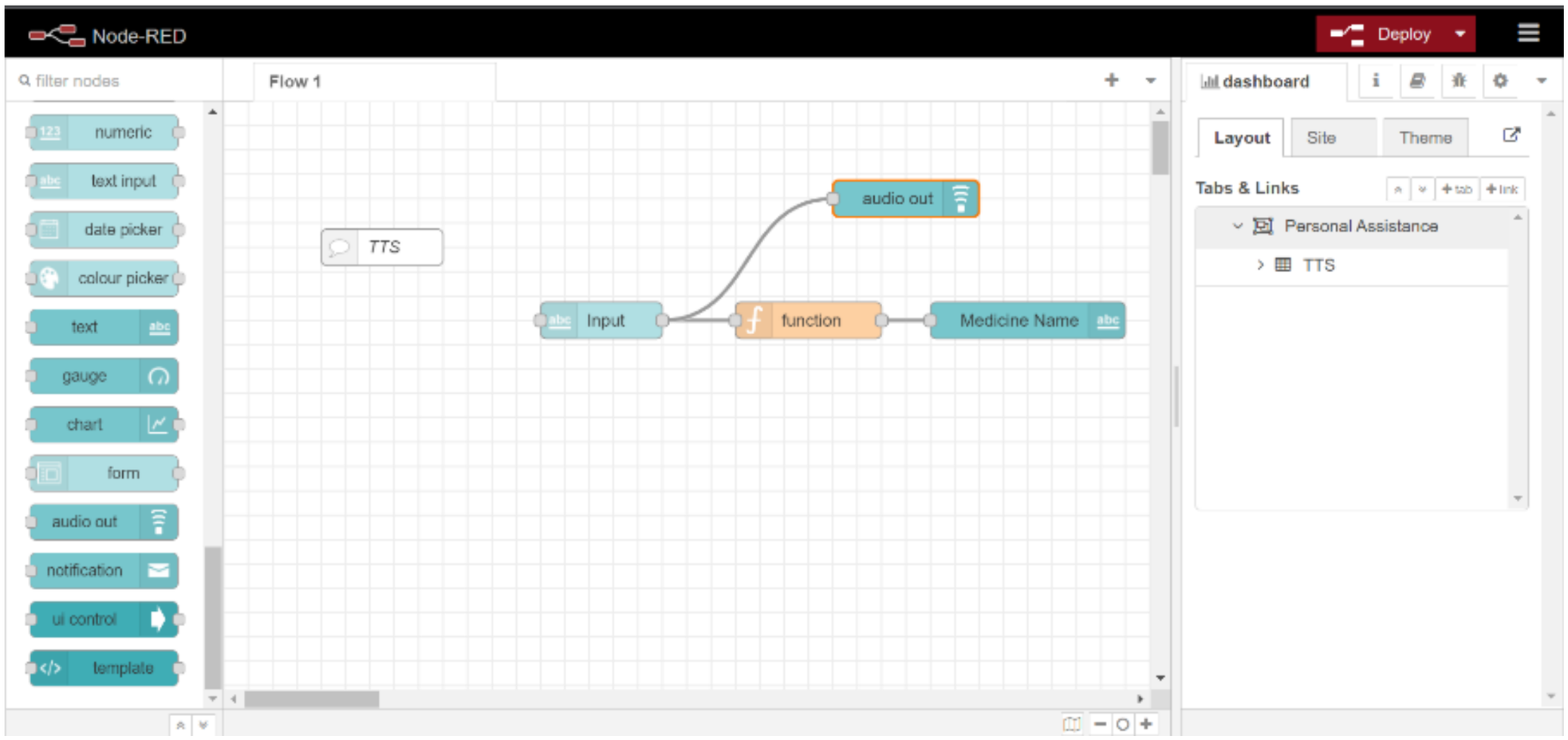


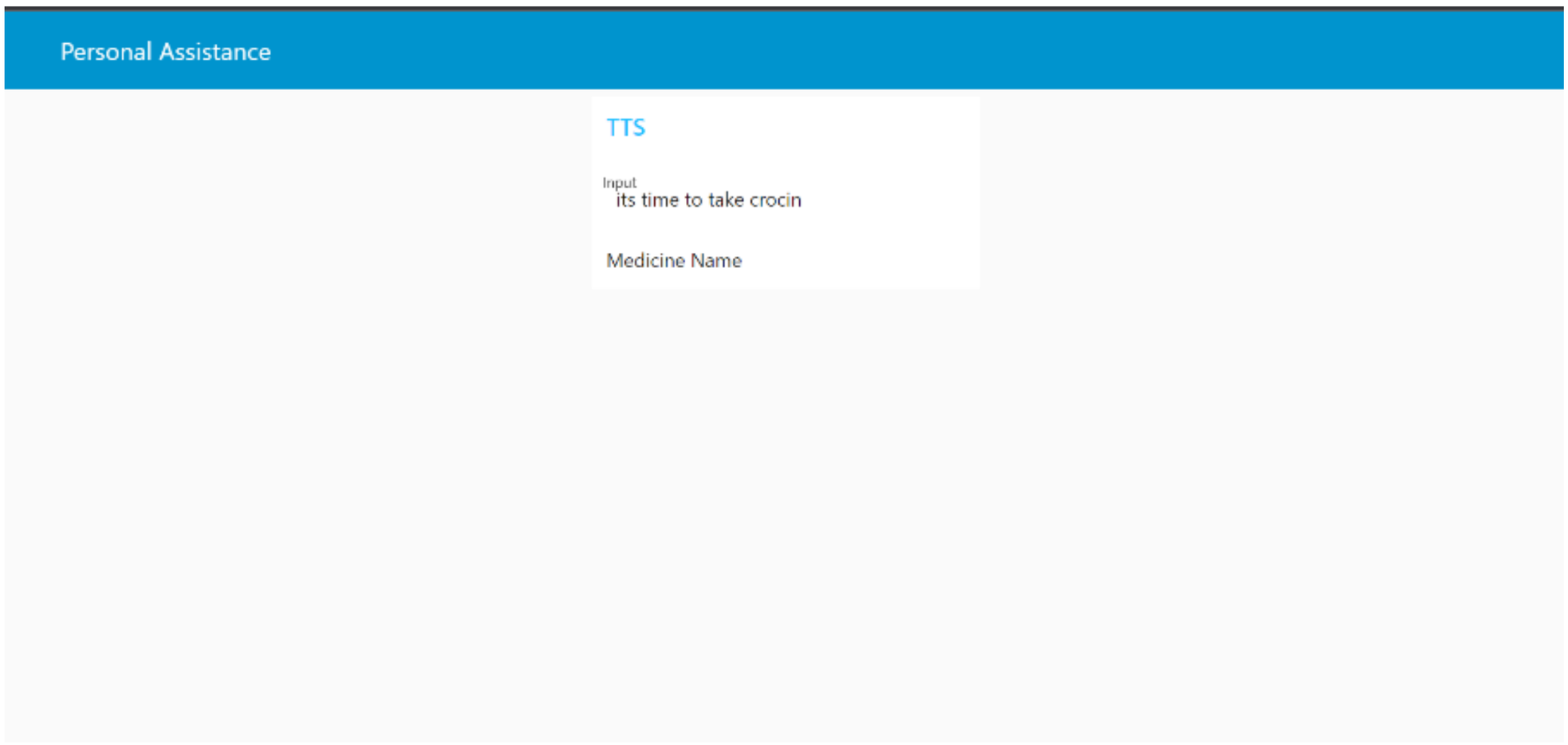

```
#include<WiFi.h>//library for wifi
#include<PubSubClient.h>//library for MQtt
#include "DHT.h"// Library for dht11
#define DHTPIN 15    // what pin we're connected to
#define DHTTYPE DHT22
DHT dht (DHTPIN, DHTTYPE);// creating the instance by passing pin and typr of dht connected

void callback(char* subscribetopic, byte* payload, unsigned int payloadLength);

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

#define ORG "p50fid"//IBM ORGANITION ID
#define DEVICE_TYPE "abcd"//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 v;

//-----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(DHTPIN,OUTPUT);
 wificonnect();
 mqttconnect();
}

void loop(){
 wificonnect();
 mqttconnect();
 v = 32;
 Serial.print("volume:");
 Serial.println(v);
 tone(DHTPIN,v);
 delay(1000);
 PublishData(v);
 noTone(DHTPIN);
 delay(1000);
 if (!client.loop()) {
  mqttconnect();
 }

}
void PublishData(float volume) {
 mqttconnect();//function call for connecting to ibm
 /*
   creating the String in in form JSon to update the data to ibm cloud
 */
 String payload = "{\"volume\":";
 payload += volume;
 payload += "}";


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


 if (client.publish(publishTopic, (char*) payload.c_str())) {
   Serial.println("Publish ok");// if it sucessfully upload data on the cloud then it will print publish ok in Serial monitor or else it will print publish failed
 } 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 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);
}
```

### Creating a Text to Speech Service in Node red


Node-RED
Deploy
filter nodes
Flow 1
dashboard
numeric
text input
date picker
colour picker
text
gauge
chart
form
audio out
notification
ui control
template
TTS
audio out
Input
function
Medicine Name
Layout
Site
Theme
Tabs & Links
Personal Assistance
TTS


Personal Assistance
TTS
Input
its time to take crocin
Medicine Name