



**University Institute of Engineering**  
**Department of Computer Science & Engineering**

## Experiment -3

**Student Name : Mukul Dagar**

**Branch: BE CSE**

**Semester:2**

**Subject Name :Disruptive Technology2**

**UID:22BCS15436**

**Section/Group : 22BCS-421-B**

**Date of Performance:11/03/2023**

**Subject Code :22ECH-103**

### 1. Aim of the practical:

**Develop a smart phone application for smart home voice-assistant.**

### 2. Tool used:

MIT App Inventor, UBIDOTS, Arduino IDE

### 3. CODE:

```
/*
 * Board:DOITESP32DEVKITv1
 * Command:-
 * 1-TURNON
 * 0-TURNOFF
 */
#include<UbidotsESPMQTT.h>
#defineRELAY2
#defineTOKEN"BBFF-t5zhv2c9h68GSBoox52HW6UDnk3hAp"

YourUbidotsTOKEN

#defineWIFISSID"Mukul";
#defineWIFIPASS"mukul";
Voidcallback(char*topic,byte*payload,unsignedintlength) {
    Serial.print("Messagearrived[");Serial.print(topic);Serial.print("]");
    for(inti=0;i<length;i++){Serial.print((char)payload[i]);}
    Serial.println();Serial.print("Command: ");bool command =
```

//

```

    *payload -
    48;Serial.println(command);digitalWrite(RELAY,!command);
}
void setup()
{Serial.begin(9600)
;
Serial.println("Init...T4_Smart_Home");pinMode(RELAY,OUTPUT);

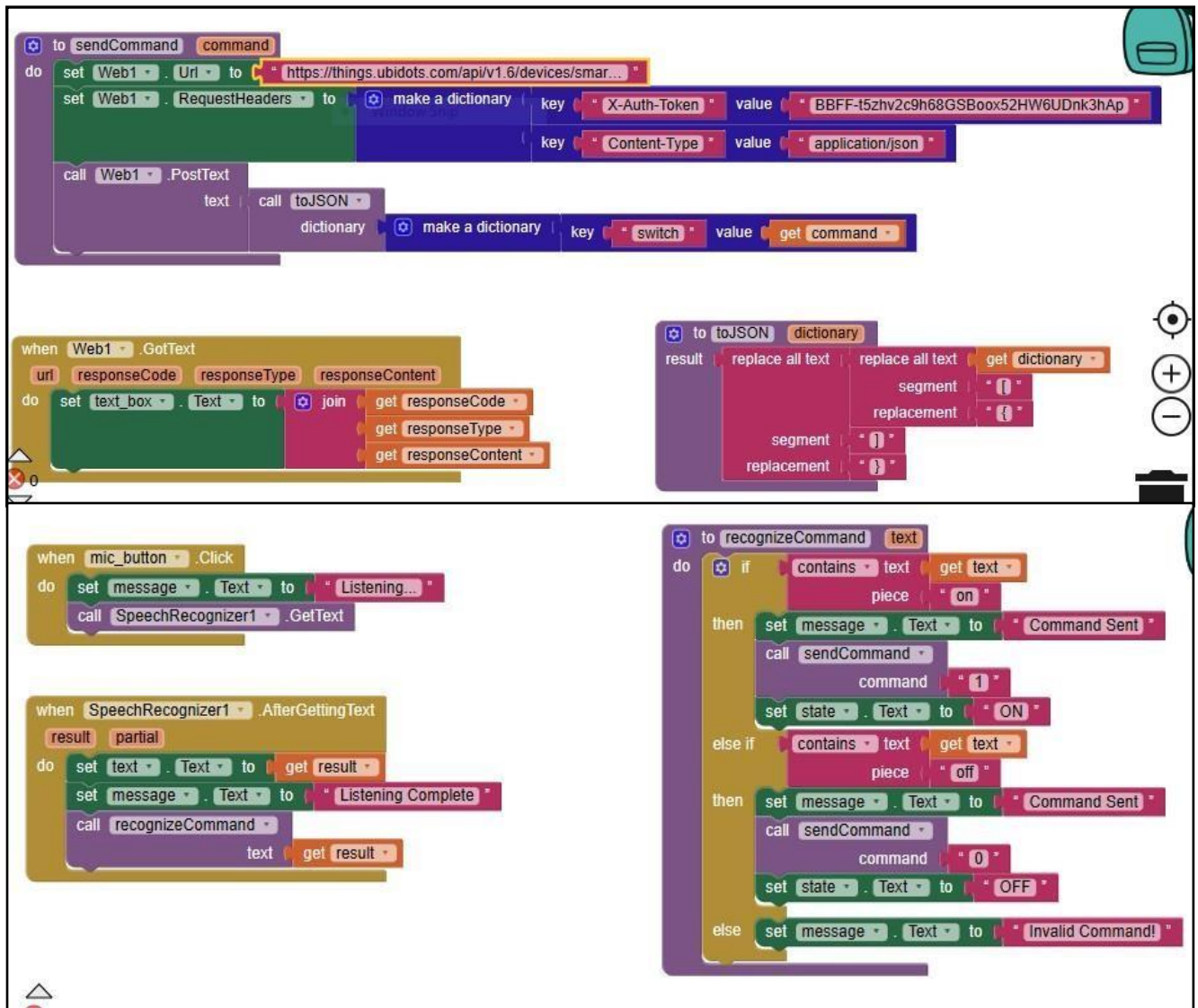
Serial.print("ConnectingtoSSID:");Serial.print(WIFISSID);Serial.print(",
Password:
");Serial.println(WIFIPASS);
client.wifiConnection(WIFISSID,WIFIPASS);Serial.println("Done");

Serial.println(" Initializing Ubidots
Connection...");client.ubidotsSetBroker("industrial.api.ubidots.com");/
/ Sets the broker properly for the business
accountclient.setDebug(true); //Passa
trueorfalseboolvaluetoactivateddebugmessagesclient.begin(callba
ck);
client.ubidotsSubscribe("smart-home-by-shivam","switch");
//InserttheDeviceandVariable'sLabelsSerial.println("Done");

Serial.println("DONE");
}
voidloop(){

//EstablisingconnectionwithUbidotsif(
!client.connected()){
    client.reconnect();client.ubidotsSubscribe("smart-home-by-
shivam","switch");//InserttheDeviceandVariable'sLabels
}
client.loop();
delay(1000);
}

```

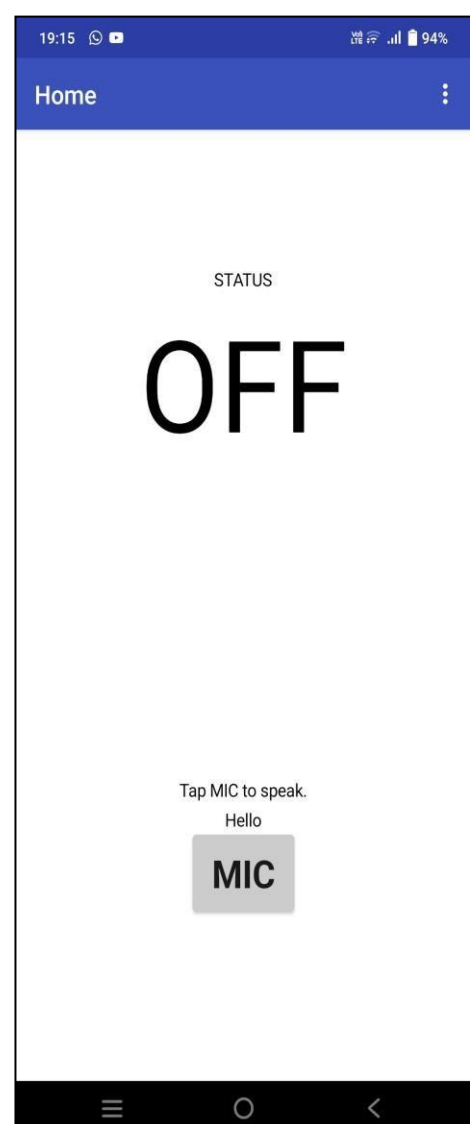
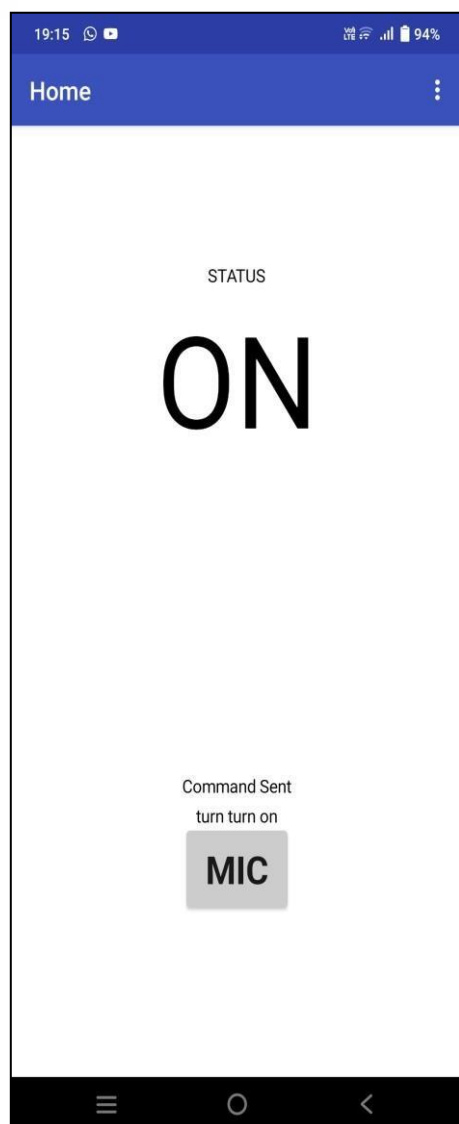


**Screenshot of MIT app inventor website where android app was created and downloaded.**

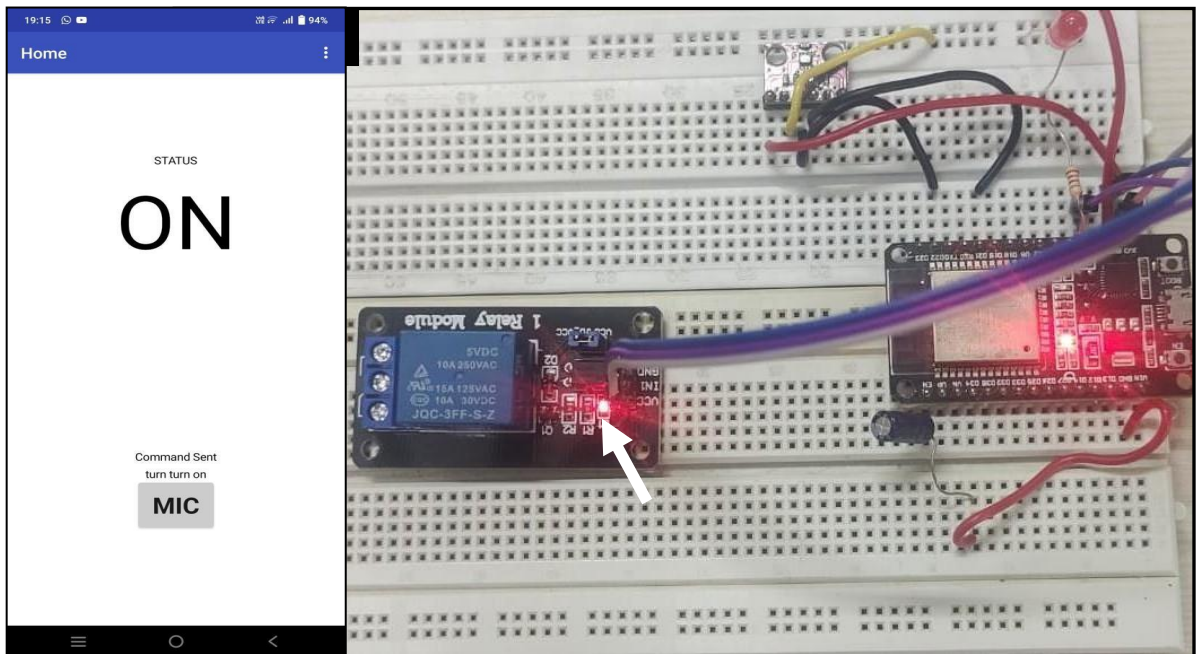


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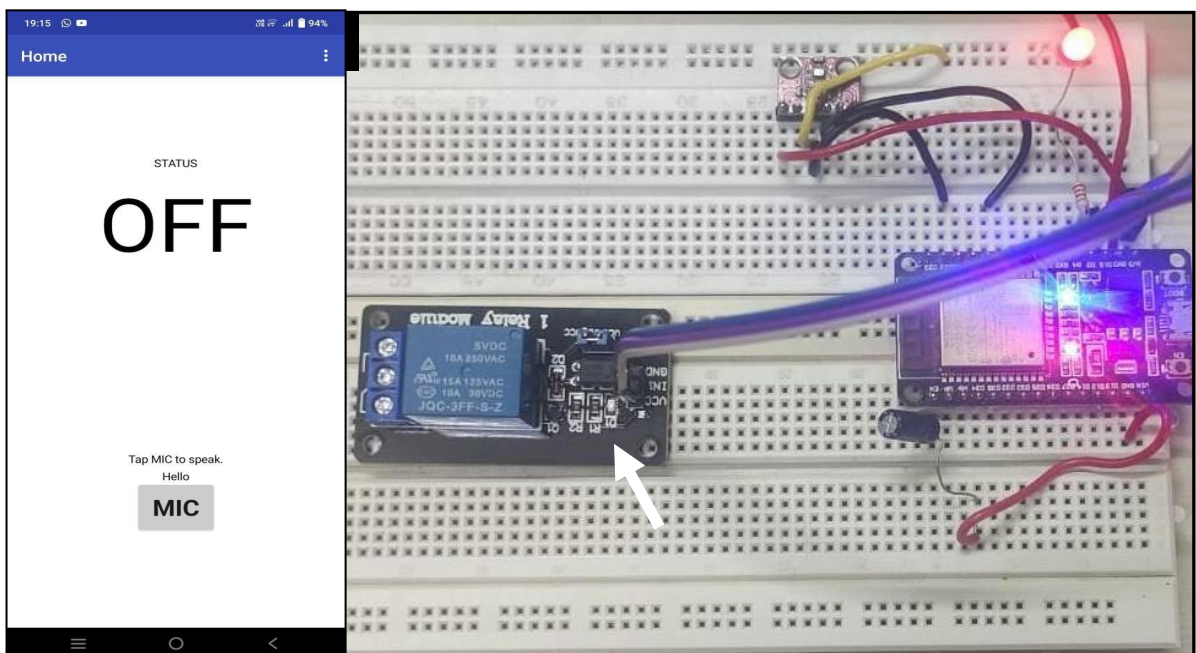
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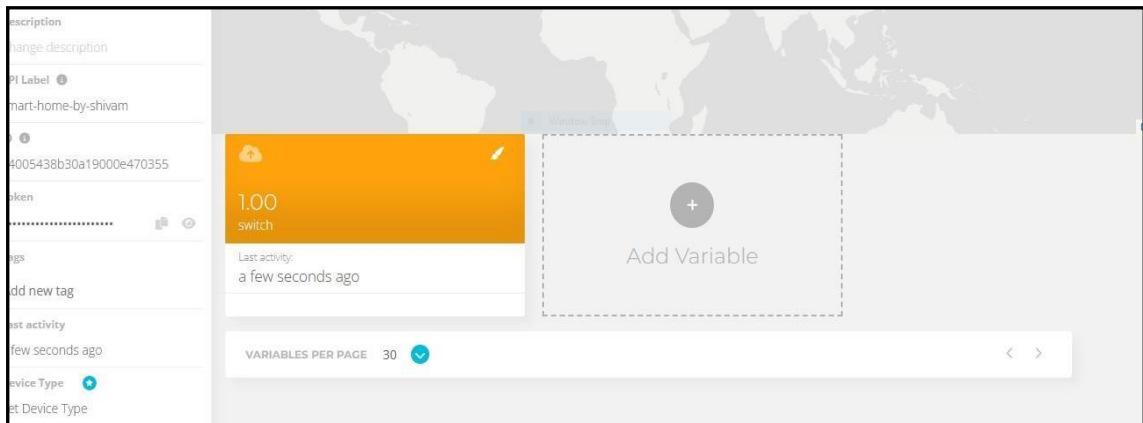
## Observation



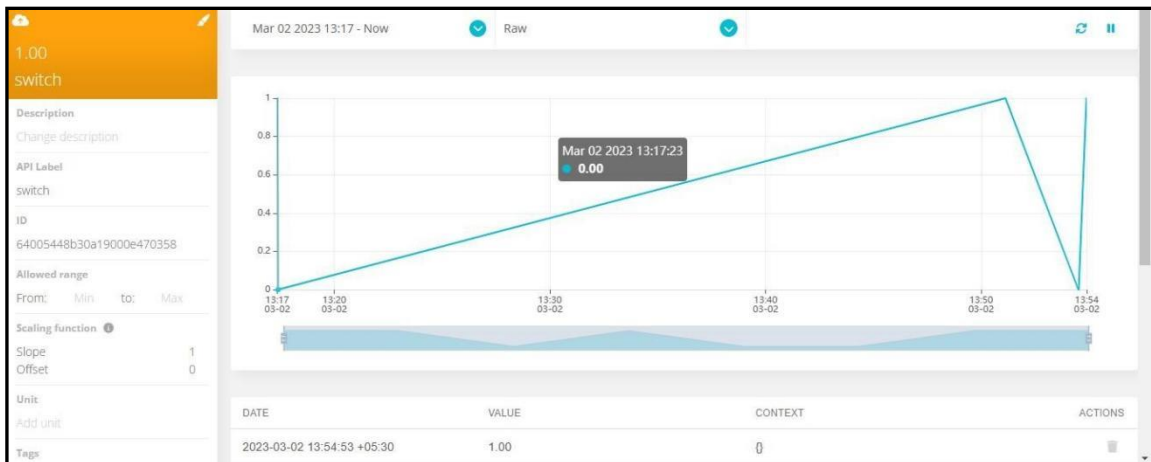
When turn on command is said on android app, then the relay get son, the marked red light indicates that relation.







Status of switch whether it is on or off gets updated on ubidots dashboard.



This is record of status of relay in graphical representation,

```

14:24:33.234 -> Command: 1
14:25:13.150 -> Message arrived [/v1.6/devices/smart-home-by-shivam/switch/lv] 0.0
14:25:13.243 -> Command: 0
14:25:25.163 -> Message arrived [/v1.6/devices/smart-home-by-shivam/switch/lv] 1.0
14:25:25.209 -> Command: 1
14:26:53.160 -> Message arrived [/v1.6/devices/smart-home-by-shivam/switch/lv] 0.0
14:26:53.254 -> Command: 0
14:27:26.190 -> Message arrived [/v1.6/devices/smart-home-by-shivam/switch/lv] 1.0
14:27:26.237 -> Command: 1
14:28:19.171 -> Message arrived [/v1.6/devices/smart-home-by-shivam/switch/lv] 0.0
14:28:19.265 -> Command: 0
14:28:31.184 -> Message arrived [/v1.6/devices/smart-home-by-shivam/switch/lv] 1.0
14:28:31.277 -> Command: 1
14:29:53.187 -> Message arrived [/v1.6/devices/smart-home-by-shivam/switch/lv] 0.0
14:29:53.270 -> Command: 0
14:30:04.220 -> Message arrived [/v1.6/devices/smart-home-by-shivam/switch/lv] 1.0
14:30:04.267 -> Command: 1
14:31:43.233 -> Message arrived [/v1.6/devices/smart-home-by-shivam/switch/lv] 0.0
14:31:43.280 -> Command: 0
14:33:33.254 -> Message arrived [/v1.6/devices/smart-home-by-shivam/switch/lv] 0.0
14:33:33.332 -> Command: 0
14:33:35.253 -> Message arrived [/v1.6/devices/smart-home-by-shivam/switch/lv] 1.0
14:33:35.300 -> Command: 1
  
```

Output of serial monitor, this shows command 0 and 1 meaning on or off respectively.



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### Learning Outcome:

- Understanding of the basics of the Internet of Things (IoT) and MQTT protocols for communicating with IoT devices.
- Familiarity with the use of relays and ESP32 boards to control household appliances via the cloud.

### Evaluation Grid (To be filled by Faculty):

Sr. No.	Parameters	Marks Obtained	Maximum Marks
1.	Student Performance (task implementation and result evaluation)		12
2.	Viva-Voce		10
3.	Worksheet Submission (Record)		8
	<b>Signature of Faculty (with Date):</b>	<b>Total Marks Obtained:</b>	<b>30</b>