**Subscribe, Publish. Initialize MQTT Working Procedure, Client App For IOT.**

**Expt. NO:**

**Date:**

**Aim:**

To Subscribe, Publish. Initialize MQTT Working Procedure, Client App For IOT.

**PROCEDURE:**

* Connect two Raspberry processor with the monitor along with mouse and keyboard.
* Connect and interface a wifi facility with the processor.
* Type down the server program and client program in individual processors.
* Run and execute the program via mqtt client.

**CLIENT PROGRAM:**

import time

import paho.mqtt.client as mqtt

import RPi.GPIO as GPIO

GPIO.setwarnings(False)

GPIO.setmode(GPIO.BOARD)

GPIO.setup(36, GPIO.OUT)

GPIO.setup(38, GPIO.OUT)

GPIO.setup(40, GPIO.OUT)

# The callback for when the client receives a CONNACK response from the server.

def on\_connect(client, userdata, flags, rc):

#print("Connected with result code "+str(rc))

client.subscribe("ETS/IOTKIT/RELAY") # Subscribe Message

print("SUBSCRIBED...")

print("Enter Command")

# The callback for when a PUBLISH message is received from the server.

def on\_message(client, userdata, msg):

print(msg.topic+" "+str(msg.payload))

x=msg.payload.decode('utf-8')

print(x)

if x == 'ON1': # Payload for Relay 1 ON

GPIO.output(36, 1)

print("Relay1 ON")

if x == 'OFF1':

GPIO.output(36, 0)

print("Relay1 OFF")

if x == 'ON2':

GPIO.output(38, 1)

print("Relay2 OFF")

if x == 'OFF2':

GPIO.output(38, 0)

print("Relay2 OFF")

if x == 'ON3':

GPIO.output(40, 1)

print("Relay3 OFF")

if x == 'OFF3':

GPIO.output(40, 0)

print("Relay3 OFF")

# Create an MQTT client and attach our routines to it.

client = mqtt.Client()

client.on\_connect = on\_connect

client.on\_message = on\_message

client.connect("test.mosquitto.org", 1883, 60)

client.loop\_forever()

**SERVER PROGRAM:**

# MQTT Publish Demo

# Publish two messages, to two different topics

import time

import paho.mqtt.publish as publish

publish.single("ETS/IOTKIT/RELAY", "ON1", hostname="test.mosquitto.org")

time.sleep(5)

publish.single("ETS/IOTKIT/RELAY", "OFF1", hostname="test.mosquitto.org")

time.sleep(5)

publish.single("ETS/IOTKIT/RELAY", "ON2", hostname="test.mosquitto.org")

time.sleep(5)

publish.single("ETS/IOTKIT/RELAY", "OFF2", hostname="test.mosquitto.org")

time.sleep(5)

publish.single("ETS/IOTKIT/RELAY", "ON3", hostname="test.mosquitto.org")

time.sleep(5)

publish.single("ETS/IOTKIT/RELAY", "OFF3", hostname="test.mosquitto.org")

time.sleep(5)

#publish.single("CoreElectronics/test", "hello", hostname="test.mosquitto.org")

#print publish.single("CoreElectronics/topic", "world", hostname="test.mosquitto.org")

print("Done")

**OUTPUT AT CLIENT:**

Python 3.7.3 (default, Jan 22 2021, 20:04:44)

[GCC 8.3.0] on linux

Type "help", "copyright", "credits" or "license()" for more information.

>>>

RESTART: /home/pi/Adafruit\_python\_DHT/DemoCode/11.MQTT/MQTT\_Relay\_Control1.py

SUBSCRIBED...

Enter Command

ETS/IOTKIT/RELAY b'ON2'

ON2

Relay2 OFF

ETS/IOTKIT/RELAY b'OFF2'

OFF2

Relay2 OFF

ETS/IOTKIT/RELAY b'ON3'

ON3

Relay3 OFF

ETS/IOTKIT/RELAY b'OFF3'

OFF3

Relay3 OFF

ETS/IOTKIT/RELAY b'ON1'

ON1

Relay1 ON

ETS/IOTKIT/RELAY b'OFF1'

OFF1

Relay1 OFF

ETS/IOTKIT/RELAY b'ON2'

ON2

Relay2 OFF

ETS/IOTKIT/RELAY b'OFF2'

OFF2

Relay2 OFF

ETS/IOTKIT/RELAY b'ON3'

ON3

Relay3 OFF

ETS/IOTKIT/RELAY b'OFF3'

OFF3

Relay3 OFF

ETS/IOTKIT/RELAY b'ON1'

ON1

Relay1 ON

ETS/IOTKIT/RELAY b'OFF1'

OFF1

Relay1 OFF

ETS/IOTKIT/RELAY b'ON2'

ON2

Relay2 OFF

ETS/IOTKIT/RELAY b'OFF2'

OFF2

Relay2 OFF

ETS/IOTKIT/RELAY b'ON3'

ON3

Relay3 OFF

ETS/IOTKIT/RELAY b'OFF3'

OFF3

Relay3 OFF

ETS/IOTKIT/RELAY b'ON1'

ON1

Relay1 ON

ETS/IOTKIT/RELAY b'OFF1'

OFF1

Relay1 OFF

ETS/IOTKIT/RELAY b'ON2'

ON2

Relay2 OFF

ETS/IOTKIT/RELAY b'OFF2'

OFF2

Relay2 OFF

ETS/IOTKIT/RELAY b'ON3'

ON3

Relay3 OFF

ETS/IOTKIT/RELAY b'OFF3'

OFF3

Relay3 OFF

**OUTPUT AT SERVER:**

Python 3.7.3 (default, Jan 22 2021, 20:04:44)

[GCC 8.3.0] on linux

Type "help", "copyright", "credits" or "license()" for more information.

>>>

===== RESTART: /home/pi/Adafruit\_python\_DHT/DemoCode/11.MQTT/mqtttest.py =====

Done

>>>

**Result:**

Thus Subscribe, Publish, Initialize MQTT Working Procedure, Client App For IOT has been verified.