Smart Parking Spot

Team SL

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Concept

- Monitoring Parking Spot
- Digital visualisation through Mobile Device
- Controlling Gate

Hardware

- Raspberry Pi
- Arduino WiFi REv2
- Ultrasonic Sensor
- Servo Motor
- RGB Module

Mqtt Protocol

- Raspberry Pi :- MQTT Broker
- Arduino WiFi Rev2 :- Publisher / Subscriber
- IOT MQTT Panel app :- Publisher / Subscriber

Visual of MQTT

```
kajee@kajee: ~
8 bytes))
                                                                    0, 'mytopic1', ... (18 bytes))
Parkl not occupied
                                                                                                                  Client (null) received PUBLISH (d0, q0, r0,
                                                                    Park1 not occupied
Client (null) received PUBLISH (d0, q0, r0, m0, 'mytopic2', ... (1 Client (null) received PUBLISH (d0, q0, r0, m m0, 'servol', ... (1 bytes))
8 bytes))
                                                                    0, 'mytopic1', ... (18 bytes))
Parkl not occupied
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Client (null) received PUBLISH (d0, q0, r0, m0, 'mytopic2', ... (1 Client (null) received PUBLISH (d0, q0, r0, m m0, 'servol', ... (3 bytes))
                                                                    0, 'mytopic1', ... (18 bytes))
8 bytes))
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4 bytes))
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Parkl occupied
Client (null) received PUBLISH (d0, q0, r0, m0, 'mytopic2', ... (1 Client (null) received PUBLISH (d0, q0, r0, m Client (null) received PUBLISH (d0, q0, r0, m)
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4 bytes))
                                                                    0. 'mvtopic1', ... (18 bytes))
                                                                                                                 m0, 'servol', ... (1 bytes))
```

C Code Implementation

```
#include < WiFiNINA.h>
#include < PubSubClient.h>
#include <stdio.h>
const char* ssid = "Kajee06";
const char* password = "kajee19960106";
const char* mqtt server = "192.168.186.1";
const int mqtt port = 1883;
const char* mqtt username = "kajee";
const char* mqtt password = "1234";
```

```
WiFi.begin (ssid, password);
while (WiFi.status() != WL CONNECTED) {
 delay(500);
  Serial.print(".");
Serial.println("");
Serial.println("WiFi connected");
Serial.println("IP address: ");
Serial.println(WiFi.localIP());
client.setServer(mqtt server, mqtt port);
while (!client.connected())
  Serial.print("Attempting MQTT connection...");
  if (client.connect("arduinoClient", mqtt username, mqtt password))
    Serial.println("connected");
  else {
    Serial.print("failed, rc=");
    Serial.print(client.state());
    Serial.println(" try again in 5 seconds");
```

```
if (distance1 <= 10)
client.publish("mytopic1", "Park1 occupied");
delay (50);
 digitalWrite (LED RED, HIGH);
    digitalWrite (LED GREEN, LOW);
    delay (500);
else{
  client.publish ("mytopic1", "Park1 not occupied");
  delay (50);
     digitalWrite (LED RED, LOW);
    digitalWrite (LED GREEN, HIGH);
    delay (500);
```

IOT MQTT Panel App





Thank You