

1. Server Information

- Server IP: tcp://13.76.250.158:1883
- Username: BKvm2
Password: Hcmut_CSE_2020

2. Input_Device_Topics_Name_Format:

- Device 4 -> Topic/GPS
- Device 5 -> Topic/TempHumi
- Device 6 -> Topic/Light
- Device 7 -> Topic/Mois

3. Output_Device_Topics_Name_Format:

- Device 8 -> Topic/LightD
- Device 9 -> Topic/Speaker

4. Workflow

- User subscribe to specific topic to get data for processing. Format of return's data of input devices are:

Device 4:

```
[  
{  
  "device_id": "GPS",  
  "values": ["109.2", "113.7"]  
}  
]
```

Note: "values": ["Longitude", "Latitude"]

Device 5:

```
[  
{  
  "device_id": "TempHumi",  
  "values": ["60", "72"]  
}  
]
```

Note: "values": ["Temperature", "Humidity"]

Device 6:

```
[  
  {  
    "device_id": "Light",  
    "values": ["200"]  
  }  
]
```

Device 7:

```
[  
  {  
    "device_id": "Mois",  
    "values": ["48"]  
  }  
]
```

- After processing data, if user want to control the output devices, they will publish to specific topic according to each device. User will send a command by following the data format below:

Device 8:

```
[  
  { "device_id": "Light_D",  
    "values": ["1", "100"]  
  }  
]  
[  
  { "device_id": "Light_D",  
    "values": ["0", "0"]  
  }  
]
```

Note: Light brightness value range is: [0, 255]

Device 9:

```
[  
  { "device_id": "Speaker",  
    "values": ["1", "100"]  
  }  
]  
  
[  
  { "device_id ": "Speaker",  
    "values": ["0", "0"]  
  }  
]
```

Note: Sound intensity value range: [0, 5000]

To be more precise, each output device will have 2 status (0 is OFF and 1 is ON) according to the intensity. Moreover, with “OFF mode”, we have 2 ways to describe it:

- You can set 1 for the first parameter and 0 for the second.
- Or, you can set 0 for the first parameter and do not care about the the intensity. However, the intensity is in range of [0..100].

Each input device will publish to specific topic and the output that you want to control will subscribe to the corresponding topic to receive data and perform the task.