SISTEM KOMUNIKASI NIRKABEL
MODUL 1

SMART HOME INTERNET OF THINGS BERBASIS PACKET TRACER

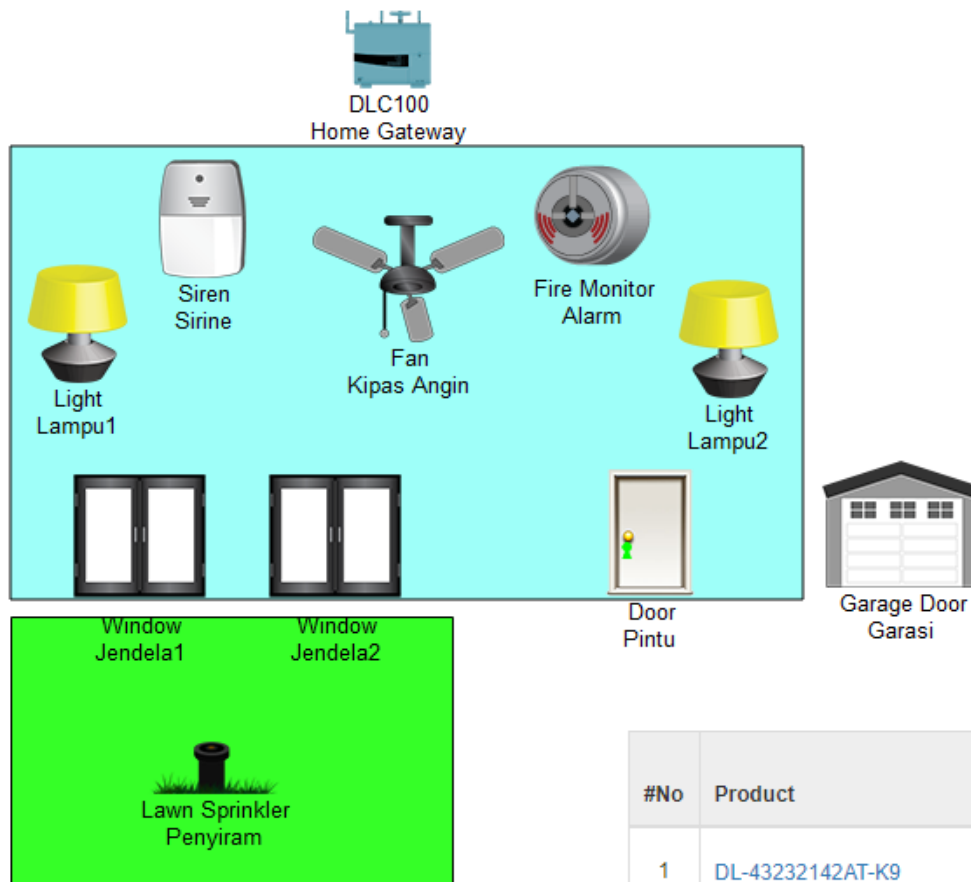Mochammad Zen Samsono Hadi, ST. MSc. Ph.D

D4 Teknik Telekomunikasi

TOPIK BAHASAN

- Pengenalan sensor
- Design dengan Home Gateway
- Design dengan IoT Server

Topologi Jaringan

- Designlah jaringan seperti berikut:
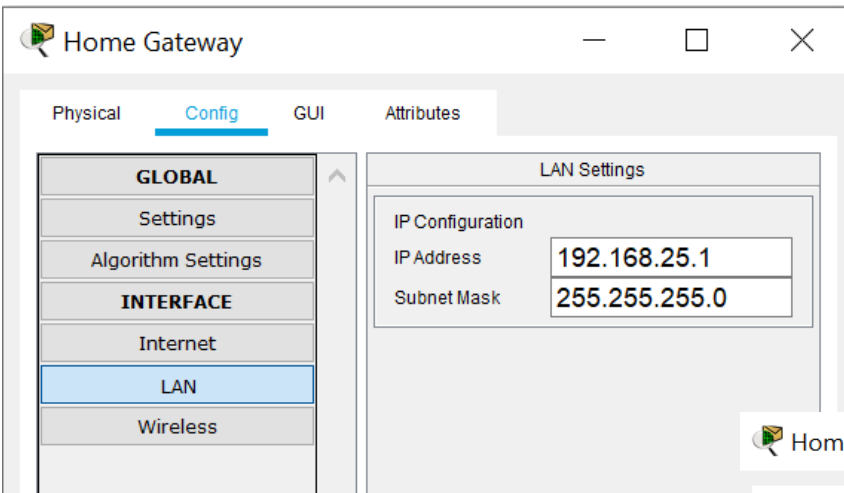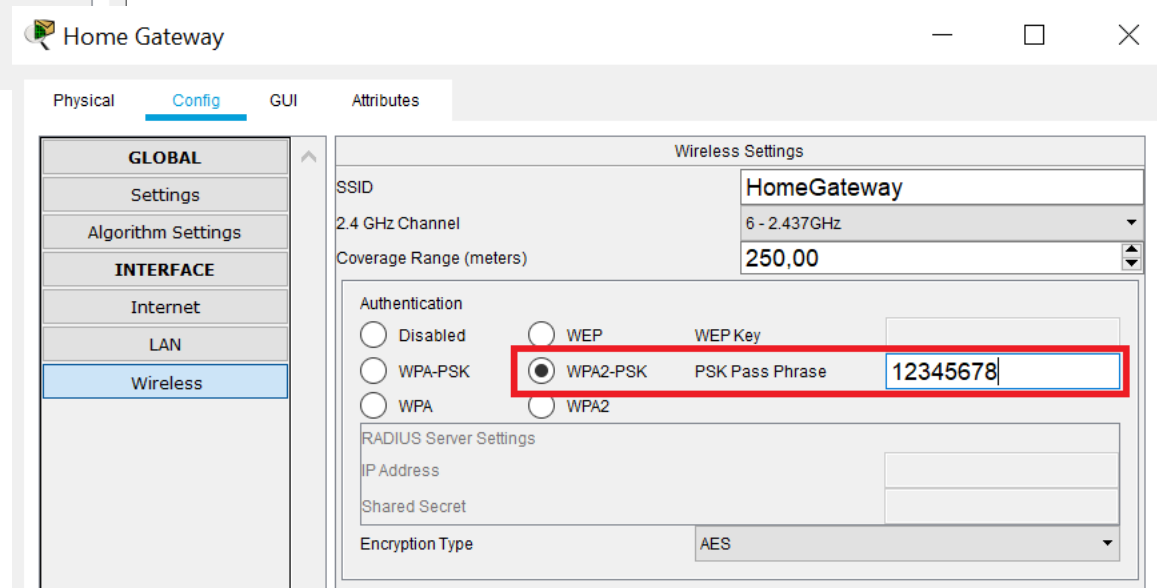

Home Gateway
DLC-100

DLC-200

#No	Product	Description	List Price (USD)
1	DL-43232142AT-K9	AT&T DLC-200, EU Version (ZigBee, Z-Wave, AFM, Wi-Fi & 3G)	$474.00

Setting pada HomeGateway

Setting IP Address (DHCP Server)

Setting WiFi & Security

Setting pada Perangkat Sensor IoT

Door
Open / Close / Unlock / Lock

Specifications   I/O Config   Physical   Config   Thing Editor   Programming   Attributes

Underline Features:

- Registration Server Compatible
- Ability to vent Carbon Dioxide and Carbon Monoxide

Usage:

- Connect to the Door from SBC/MCU/Thing with IoT Custom Cable
- Use customWrite function to control the door and lock

Direct Control:

- ALT-click on keyhole to lock/unlock
- ALT-click on door to open/close

Local Control:

- Connect device to SBC/MCU/Thing. Use the "customWrite" API per Data Specifications
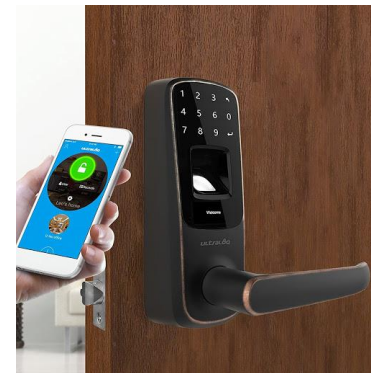
Remote Control:

- Connect device to Registration Server using Config Tab

NOTE: opening and closing the door is not remote controllable

Data Specifications:
Message Format: [door],[lock]
 door: 0 = closed, 1 = open, -1 = don't care
 lock: 0 = unlock, 1 = lock, -1 = don't care

Example:
Connect a SBC to the door, send a customWrite and open the door to vent the Carbon Dioxide and Carbon Monoxide level

- Perhatikan Spesifikasi dari perangkat tsb.

Lock/Unlock

Open/Close
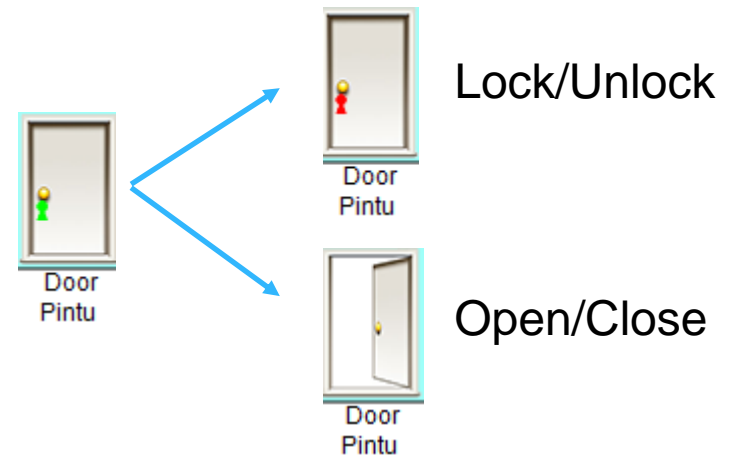
Setting pada Perangkat Sensor IoT

Setting SSID dan passcode

Setting DHCP dan koneksi ke IoT Server

- Lakukan hal yang sama pada semua perangkat IoT

Interkoneksi Perangkat IoT

Semua perangkat IoT sudah terhubung ke HomeGateway
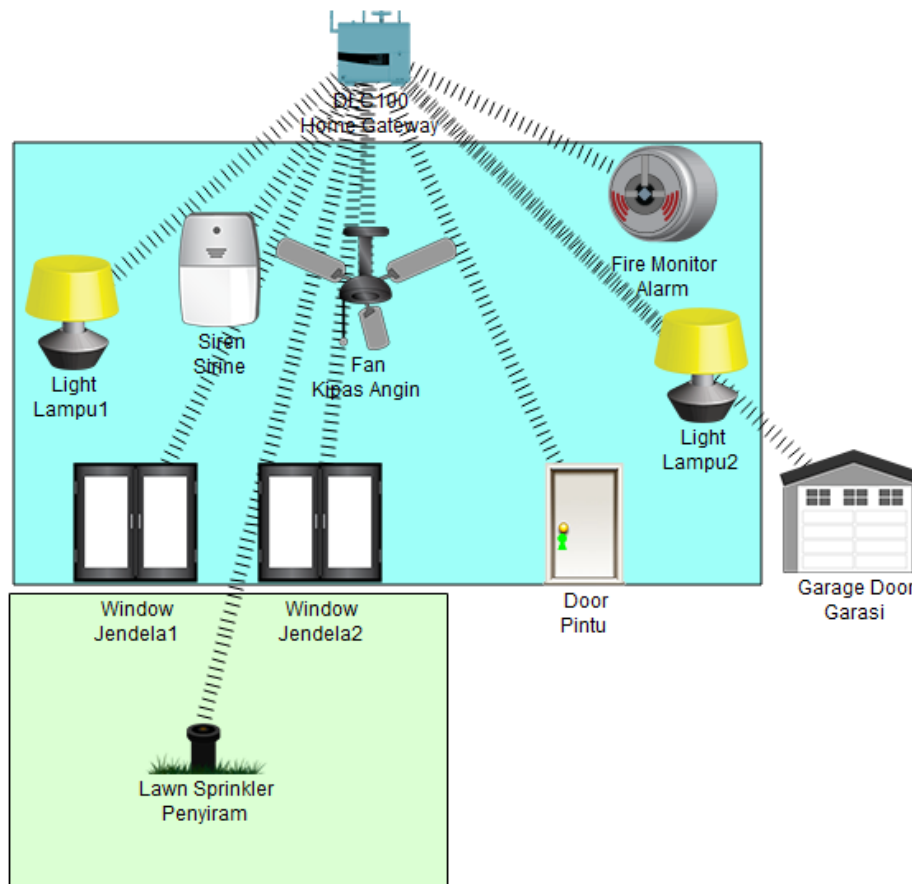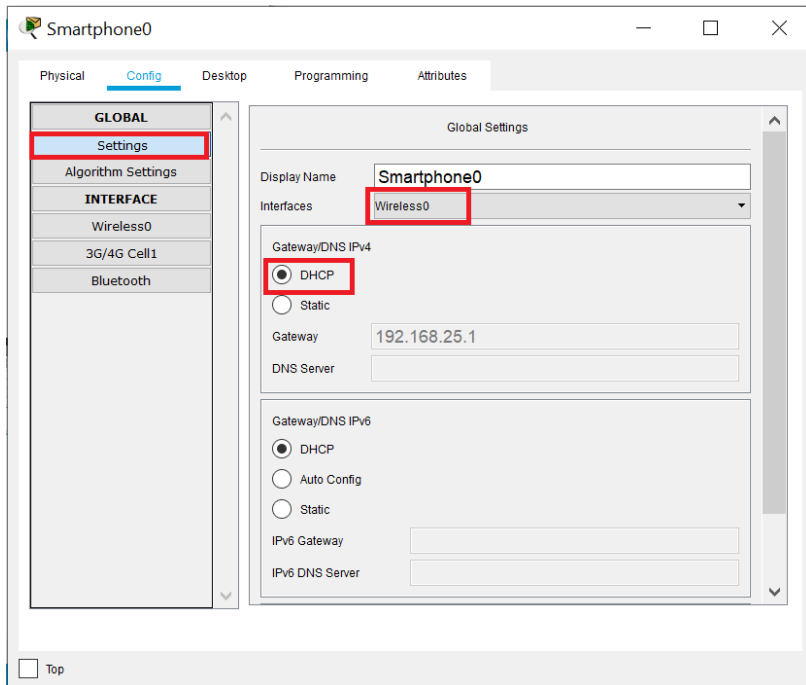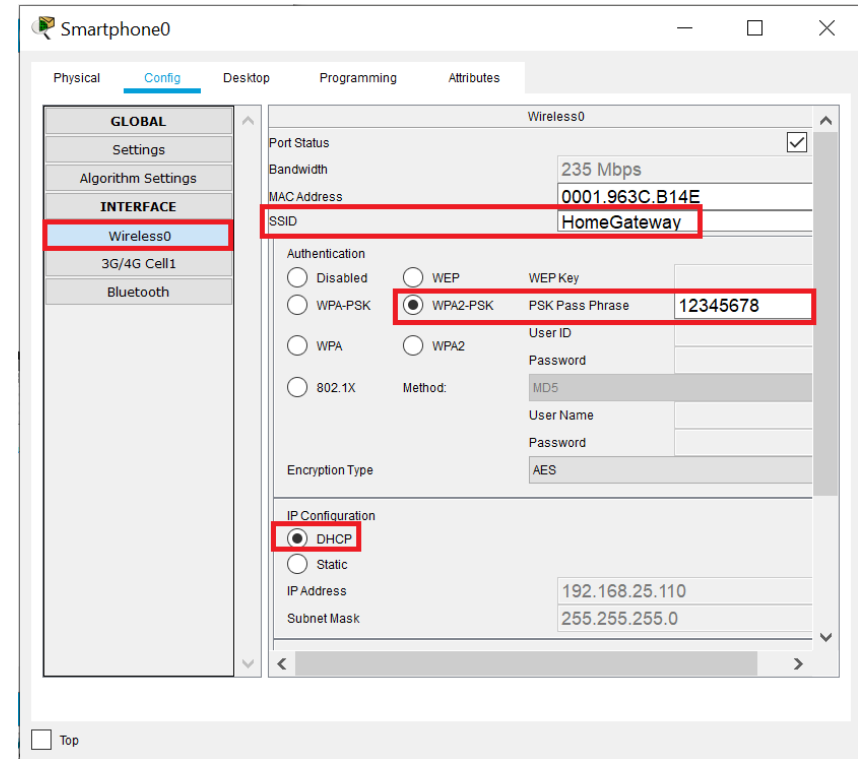
Monitoring Perangkat IoT

Setting Smartphone
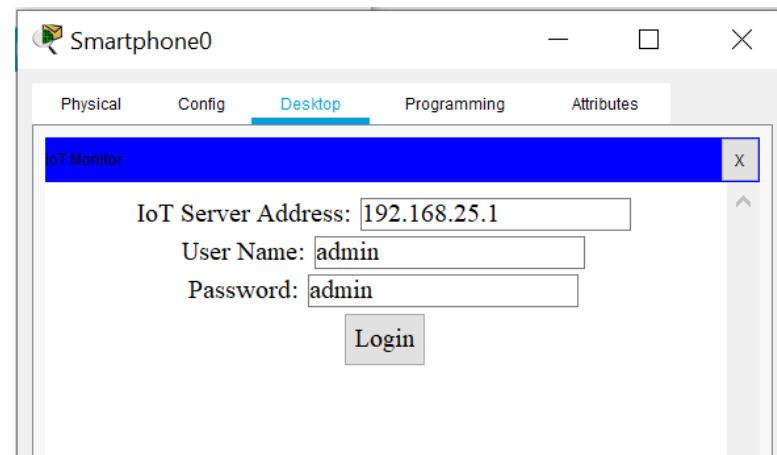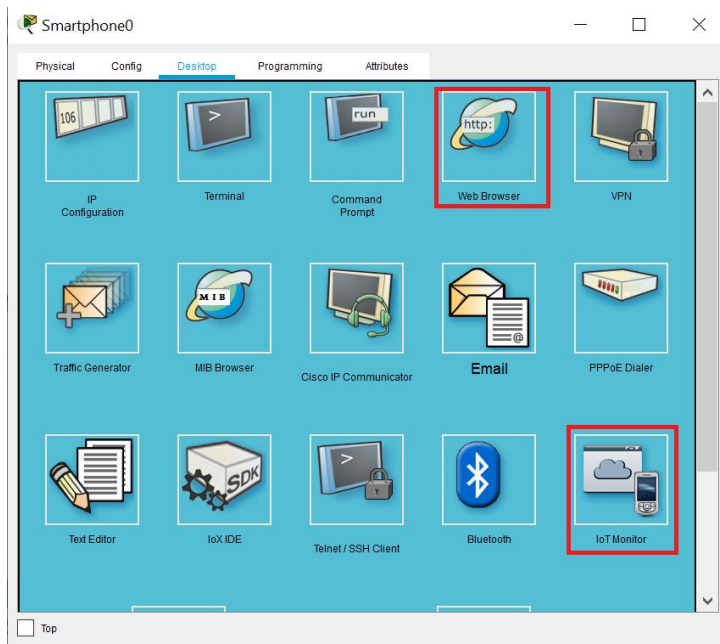
Setting Wireless Interface dan GW

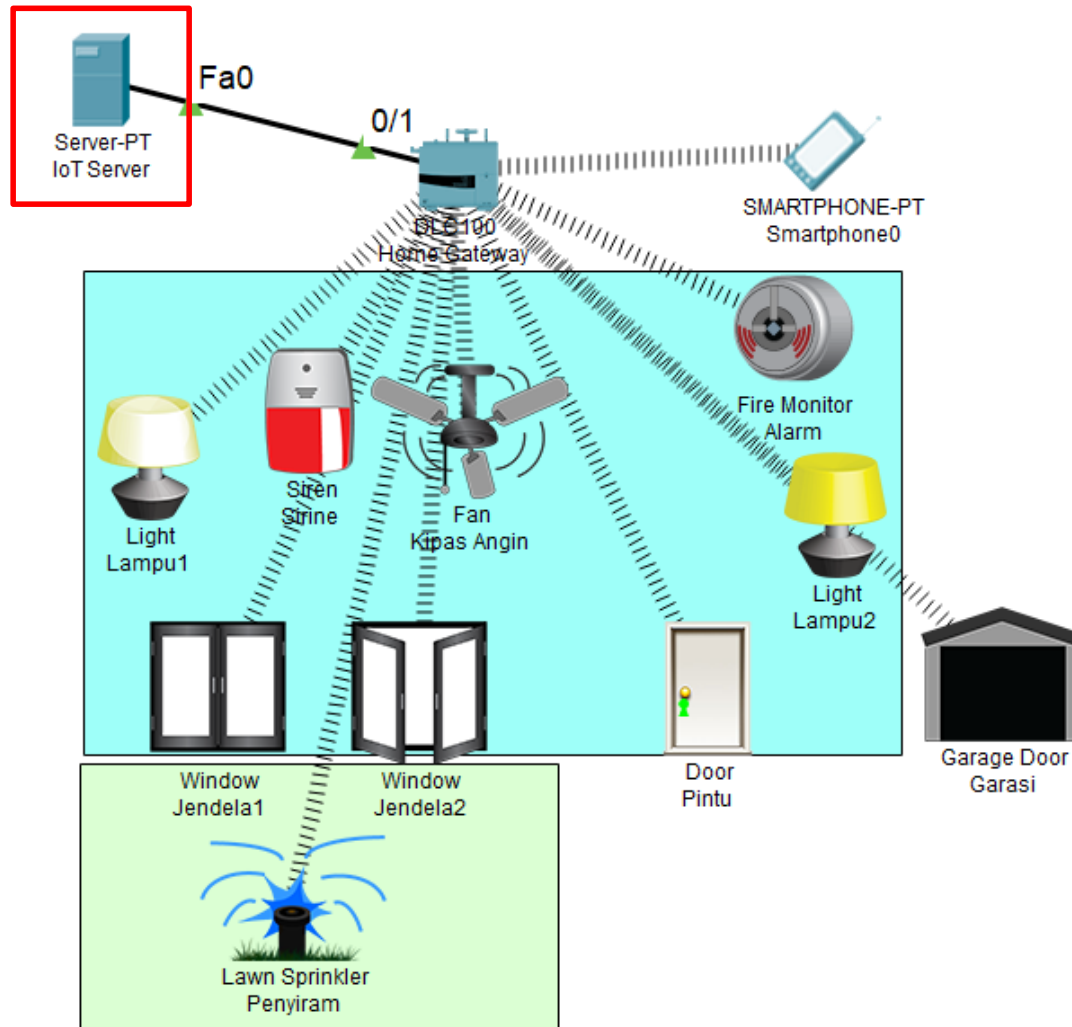
Setting SSID dan Passcode

Setting Aplikasi Monitoring

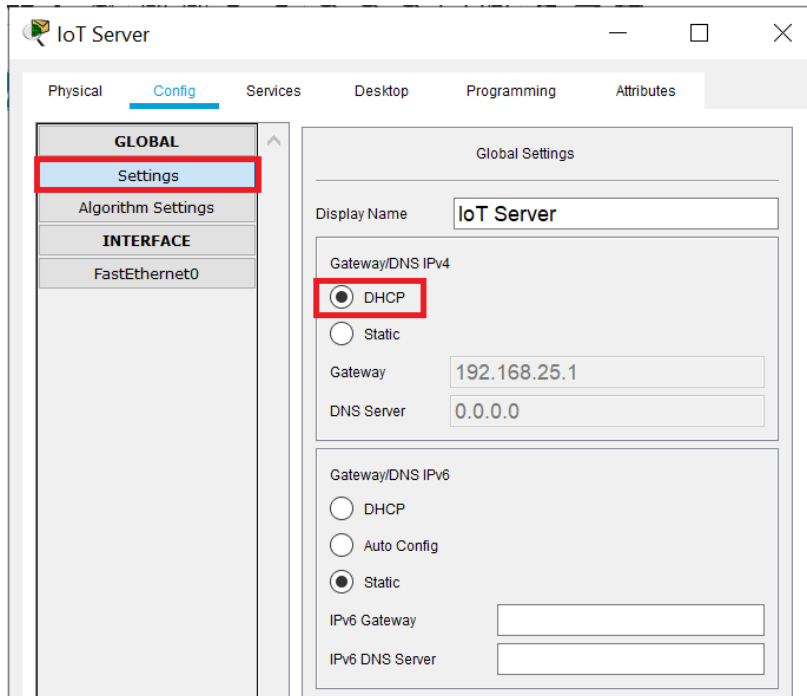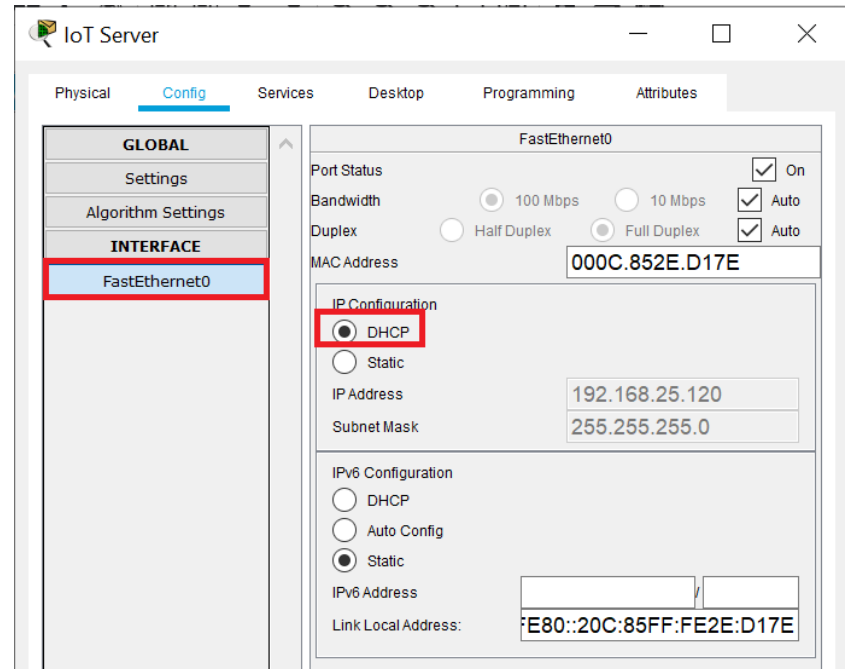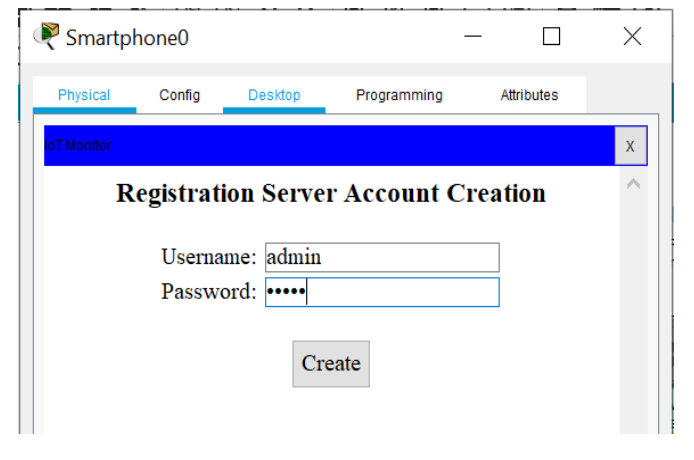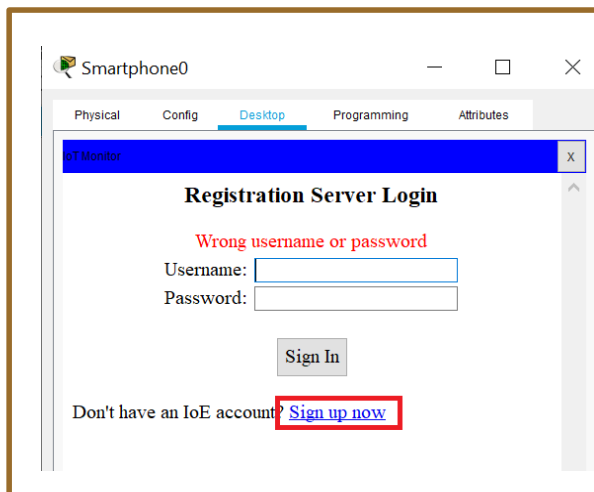Untuk monitoring, bisa melalui **Web Browser** atau **IoT Monitor**

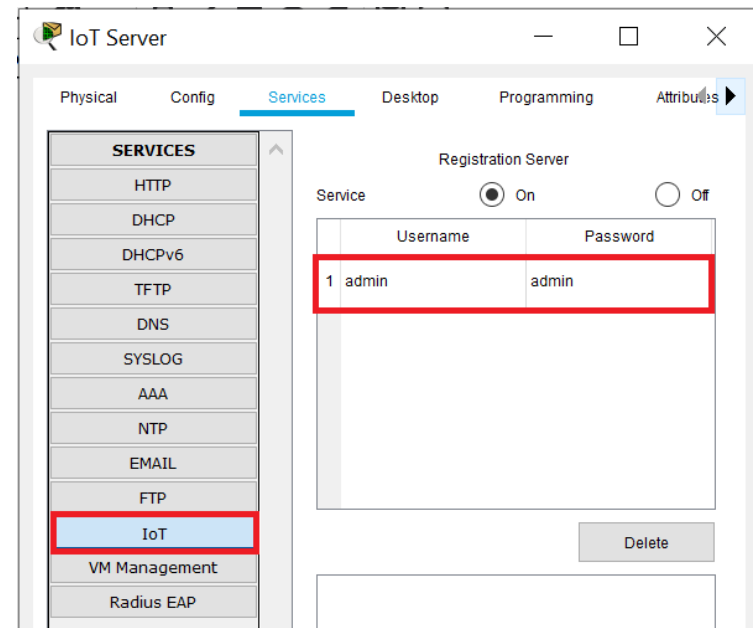# IoT SERVER pada Smart Home

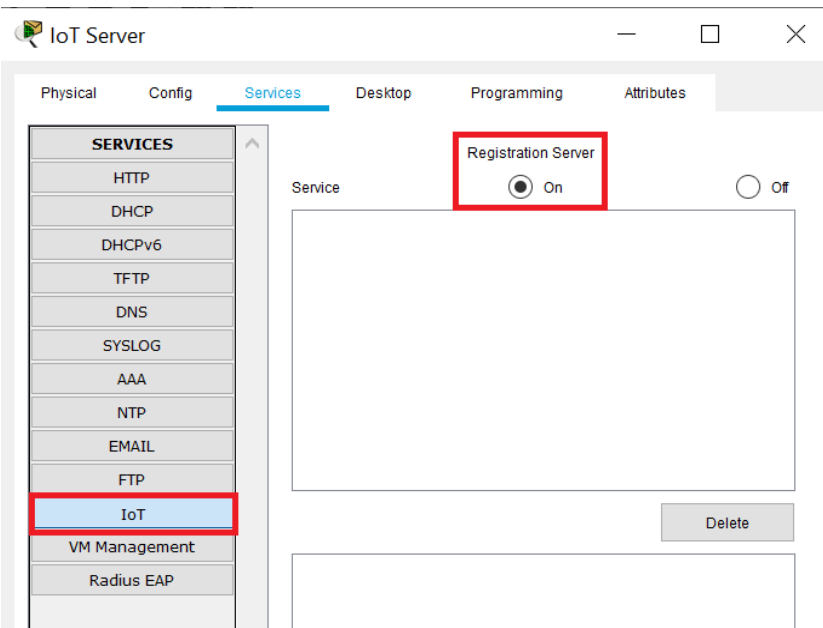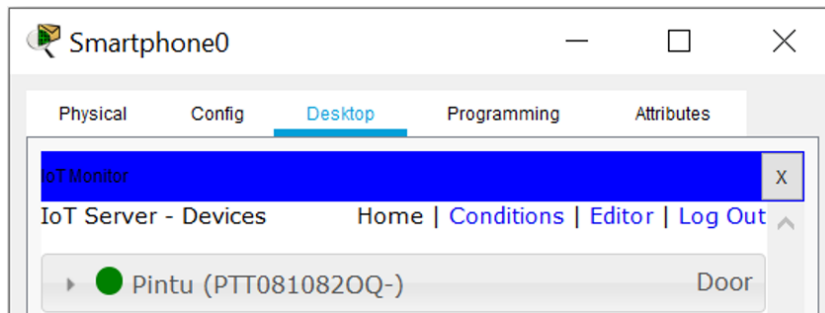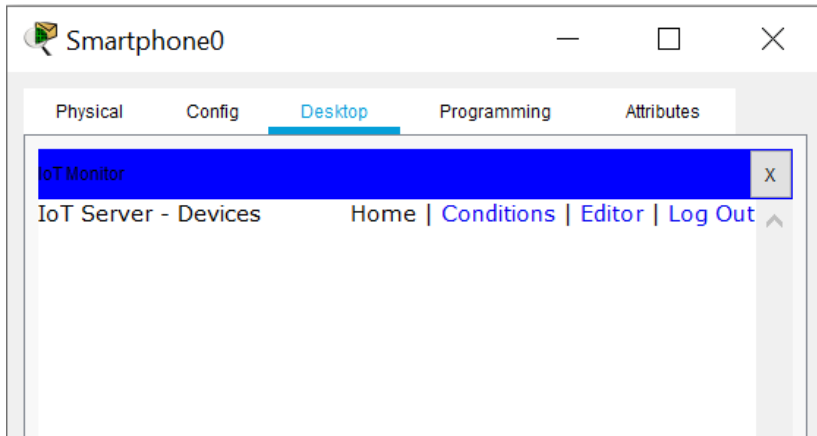# Setting Interface pada IoT Server

Setting IP GW dengan DHCP

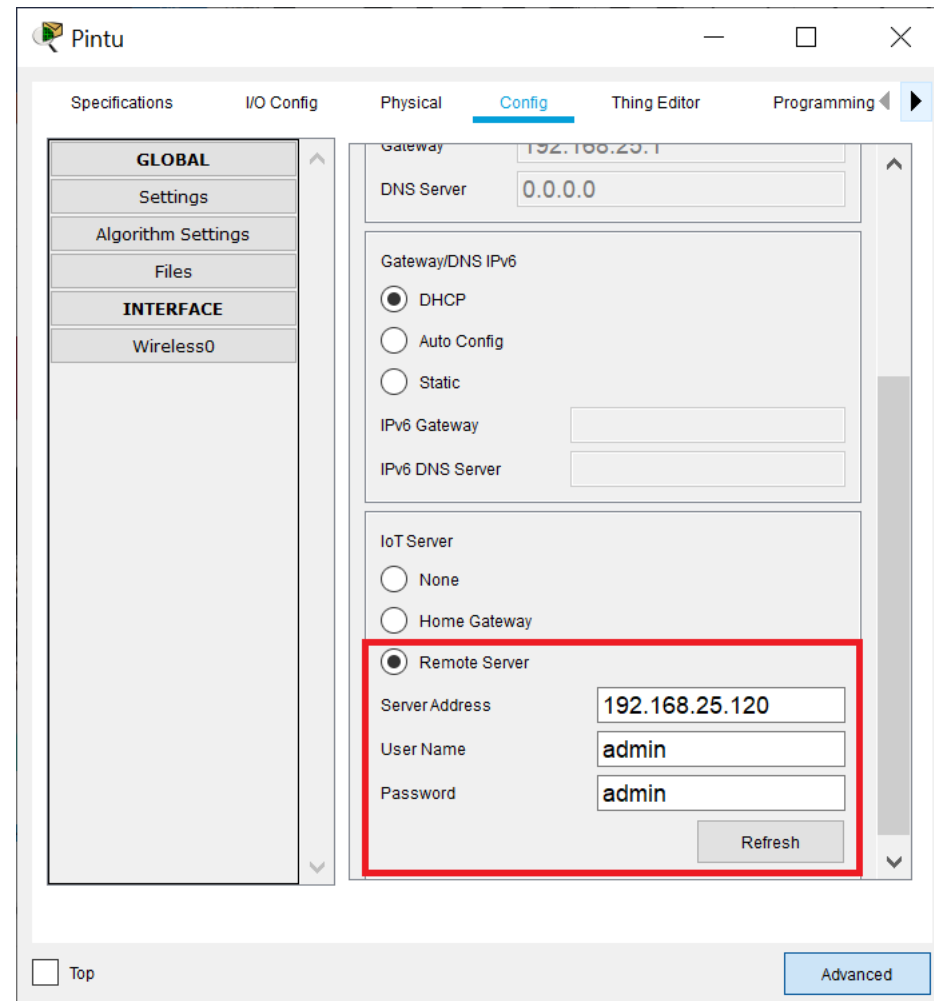## Setting Interface dengan DHCP

Setting Aplikasi IoT pada Server

Setting Perangkat IoT

Lakukan hal yang sama pada semua perangkat IoT

Setting perangkat IoT: "Pintu"

TUGAS

- Desainlah sebuah smart environment:
  - Smart Home
  - Smart Office
  - Smart Agriculture
  - Smart Factory
- Setting seperti contoh sebelumya menggunakan "HomeGateway"
- Gantilah HomeGateway tersebut dengan perangkat:
  - IoT Server
  - Access Point

TUGAS

- Buatlah laporan resmi dengan melampirkan:
  - Desain dan penjelasannya di file word
  - Desain di packet tracer
  - Terakhir pengumpulan: hari Sabtu jam 23.59
- Upload di:
  https://drive.google.com/drive/folders/1X0_PyMb2b4Hkpr7wdHQb6yGpUy9pkIlG?usp=sharing