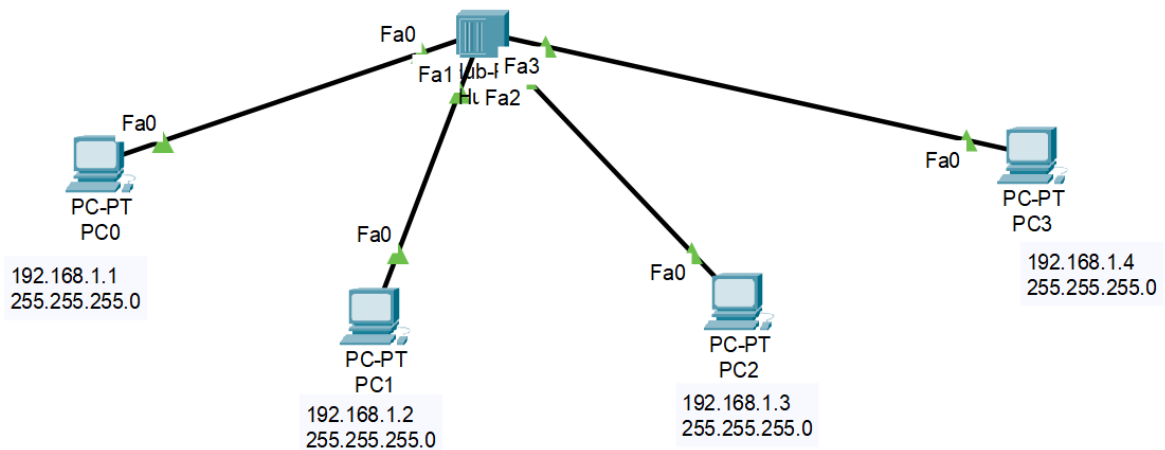


**Ankara University**  
**Department of Computer Engineering**  
**BLM332-3032 (2021)**  
**LAB 2**

## SECTION 1

**Establishing Hub connection.**

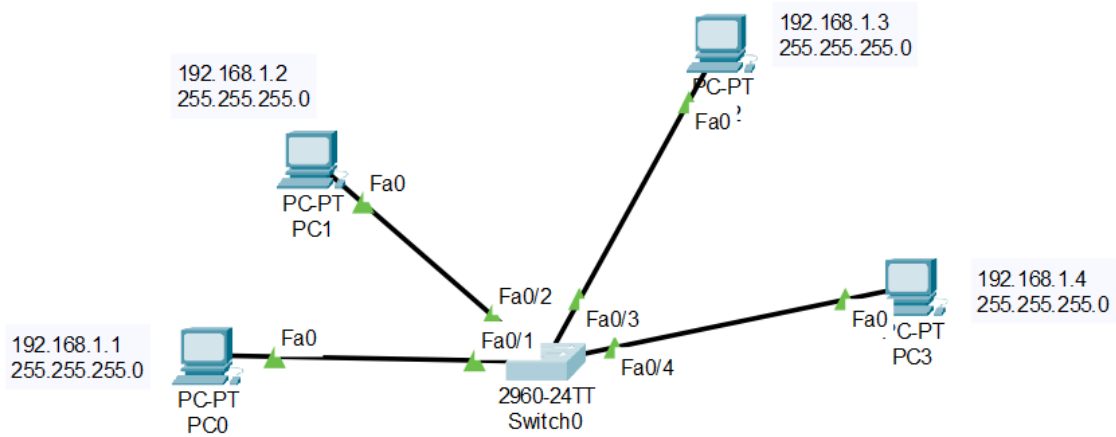


### Hubs;

- used to establish a Local Area Network (LAN)
- broadcast frame to all ports (all devices on the LAN can see all packets)
- cheaper than the switches
- suitable for small networks.
- do not store any information, just broadcast the frame to all other ports.
- cannot send and receive data at the same time (Half Duplex mode)
- are Layer 1 (Physical Layer) devices.

## SECTION 2

### Establish Switch connection

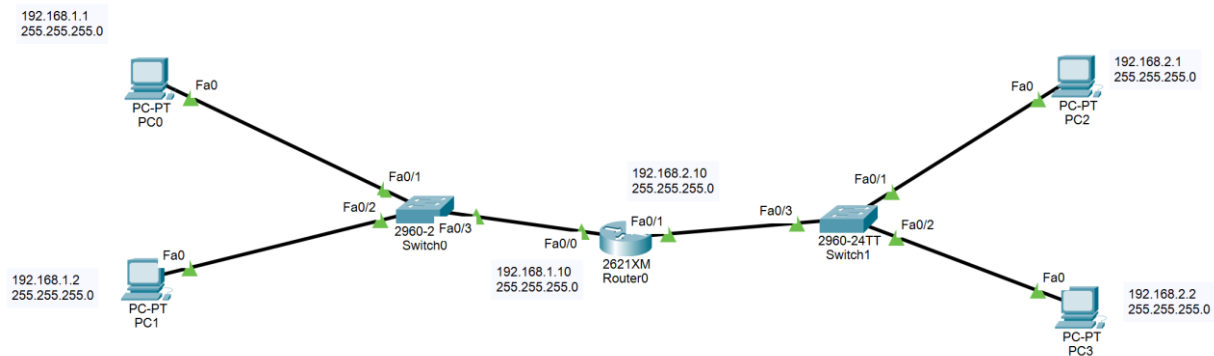


### Switches;

- also used to set up a LAN.
- can store information.
  - MAC Address Table (MAC Address - Port)
- send the frame only to the target device.
- can do unicast, multicast and broadcast. (Hub can only do broadcast.)
- can send and receive frames at the same time (Full Duplex mode)
- also have Half Duplex mode.
- have low risk of security.
- are Layer 2 (Data Link Layer) devices.

## SECTION 3

### Establish Router connection



### Routers;

- connect multiple LANs or MANs or WANs.
- can store information
  - Routing Tables
- can send and receive packets at the same time.
- are Layer 3 (Network Layer) devices.

**Routers are our main concern in all labs.**

## SECTION 4

### Command Line Fundamentals

#### Objective:

- Log into a router and go to the user and privileged modes
- Use several basic router commands to determine how the router is configured
- Use the router HELP facility
- Use command history and editing features
- Logout of the router.

Step 1: Utilize above structure (SECTION 3).

Step 2: Log into the router CLI

If prompted to enter the initial setup mode, answer no.

Step 3: Use the HELP feature

Router>?

Step 4: Enter privileged EXEC mode

```
Router>enable
```

Step 5: Use the HELP feature

```
Router#?
```

Step 6: List the show commands

```
Router#show ?
```

Step 7: Examine the running configuration

```
Router#show running-config
```

Step 8: Examine the configuration in more detail

Step 9: Use the command history feature

```
Router#show history
```

Step 11: Enter global configuration mode

```
Router#configure terminal
```

Step 12: Enter router configuration mode

```
Router(config)#router rip
```

Step 5: Exit from router mode and go into interface configuration mode

```
Router(config-router)# exit
```

```
Router(config)#interface fastEthernet 0/0
```

Step 6: Assign a name to the router

```
Router(config)#hostname MYROUTER
```

Step 7: Exit the router

```
MYROUTER (config)#exit
```

Step 8: See running configuration

```
MYROUTER #show running-config
```

Step 9: Look for serial connection information (At this point stop the router and add two WIC-1T Serial connection)

```
MYROUTER # show controller serial 0/0
```

OR

```
MYROUTER # show controller serial 0/1
```

Step 10: See ip interface (\*)

```
MYROUTER # show ip interface brief
```