Project Summary: Cisco Network Configuration
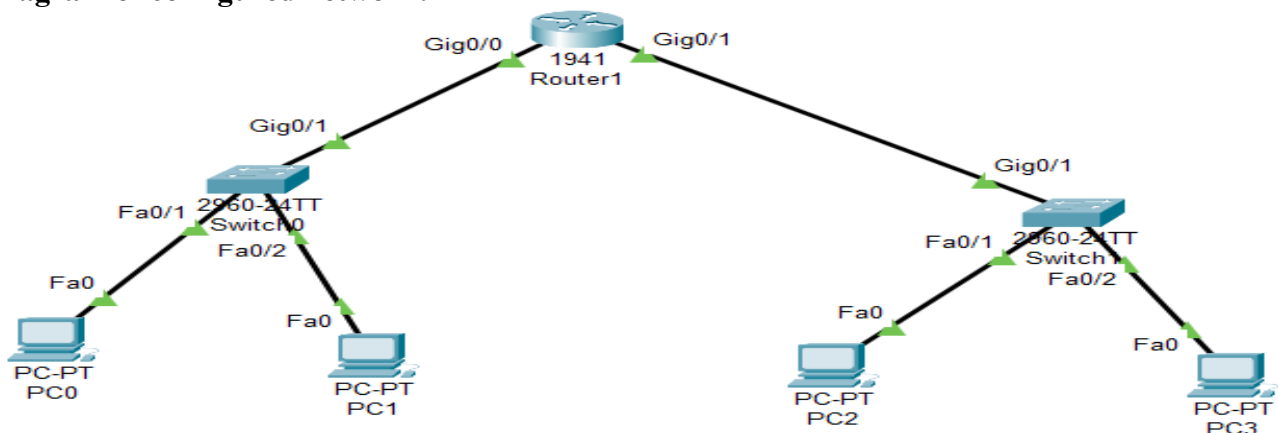
- **Equipment Used**: 4 PCs, 2 Cisco switches, 1 Cisco router,

- **Connections**:

  - PCs connected to switches via copper straight-through cables.
  - Switches connected to the router using Gigabit Ethernet ports (g0/0 and g0/1).

- **Initial Setup**:

  - Encountered red lights in Packet Tracer, indicating no connection; needed to enable router ports, which are disabled by default.
  - Accessed router CLI and entered privileged mode.

- **Configuration Steps**:

  To configure the gigabit ports on the router, I declined the initial configuration offer by typing **no** and pressing Enter. Then, I entered privileged mode by typing **enable** and pressing Enter, followed by another Enter. Next, I accessed global configuration with **configure terminal.** I configured the first port by typing **interface g0/0** and pressing Enter(The port is labeled on the router). I assigned the IP address by typing **ip address 192.168.1.1 255.255.255.0** and pressing Enter. With the subnet mask I chose, the first 3 octets are for the network portion. The last octet is reserved for the hosts, with 256 IP addresses available. 2 of those 256 addresses must be reserved for the network ID and the default gateway. The ports on Cisco routers are turned off by default, so I typed **no shutdown** and pressed Enter. Finally, I typed **exit** and pressed Enter to complete the configuration for the first port. I repeated the process for the other port. Summary of what I did on the CLI:

  - Configured Gigabit port g0/0 with IP address **192.168.1.1/24** and enabled it.
  - Configured Gigabit port g0/1 with IP address **192.168.2.1/24** and enabled it.

- **PC Configuration**:

  - Assigned static IP addresses to PCs in the **192.168.1.x** and **192.168.2.x** ranges with the corresponding subnet masks and default gateways.
  - Tested connectivity by sending PDU from PCs across the network.

- **Outcome**: Successfully established communication between PCs on different broadcast domains, confirming proper configuration of the network.

- **Note**: This was a basic setup without advanced configurations like firewall rules or DNS.

Diagram of configured network:

Router configuration steps visualized:

IOS Command Line Interface

```
2 Gigabit Ethernet interfaces
DRAM configuration is 64 bits wide with parity disabled.
255K bytes of non-volatile configuration memory.
249856K bytes of ATA System CompactFlash 0 (Read/Write)


        --- System Configuration Dialog ---

Would you like to enter the initial configuration dialog? [yes/no]:

Press RETURN to get started!



Router>enable
Router#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#interface g0/0
Router(config-if)#ip address 192.168.1.1 255.255.255.0
Router(config-if)#no shutdown

Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0, changed state to up
exit
Router(config)#interface g0/1
Router(config-if)#ip address 192.168.2.1 255.255.255.0
Router(config-if)#no shutdown

Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/1, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/1, changed state to up
exit
Router(config)#
```

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