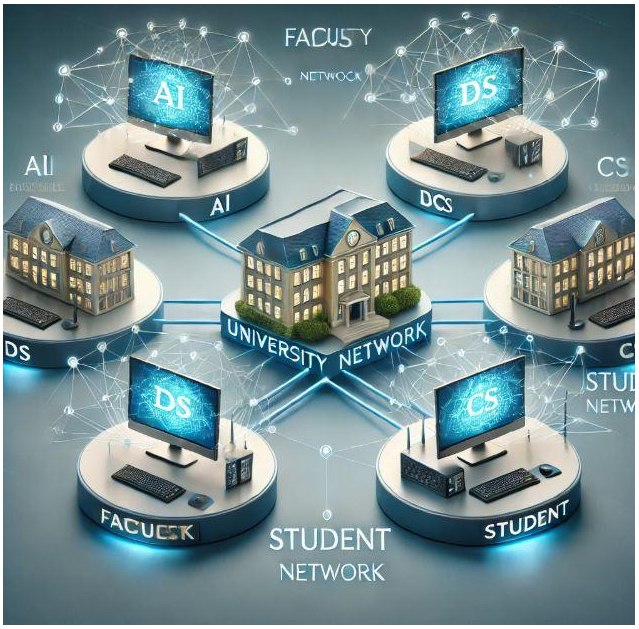

UNIVERSITY MANAGEMENT SYSYTEM

Cisco Packet Tracer

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2. Objective

The purpose of this project is to design a scalable and efficient network topology for a university system with four departments using Cisco Packet Tracer. The goal is to implement and test multiple routing protocols with DHCP and demonstrate effective network segmentation and communication.

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3. Technologies Used

- **Tools**:
  - Cisco Packet Tracer.
  - Report for Word-16
- **Protocols**:
  - EIGRP, OSPF, RIP.
- **Other Concepts**:
  - DHCP is also used in my project.

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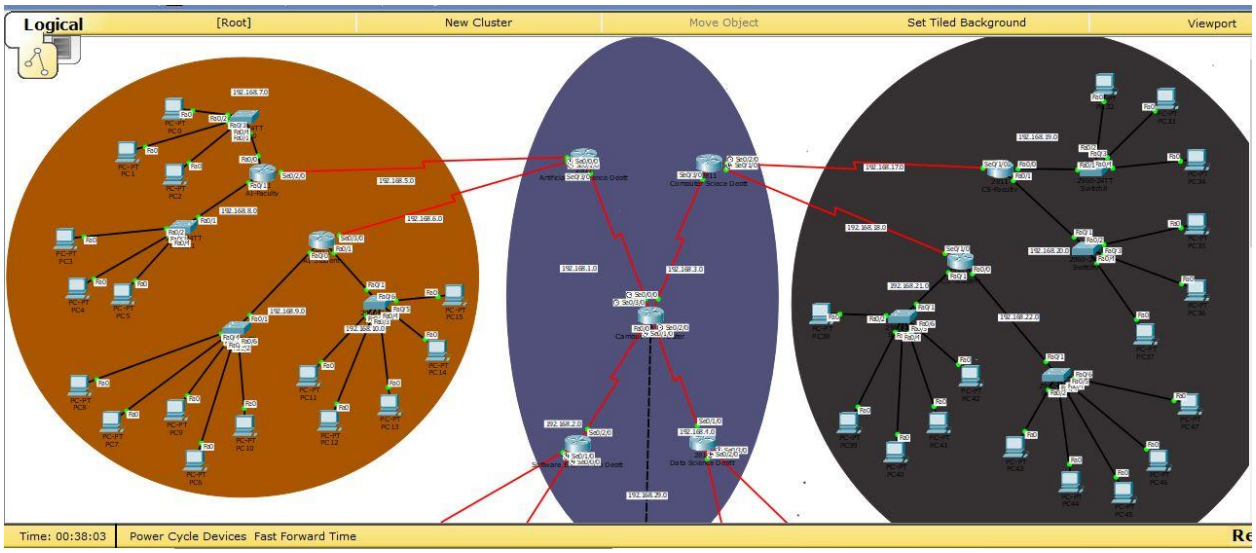
4. Implementation Details

- **Design**: Describe the network hierarchy and topology.
  - The network consists of 4 departments (AI, DS, CS, SE), each with faculty and student networks. Faculty have 2 networks with 3 host each, while student networks have also 2 networks with 5 host each
- **Approach**:
  - Explain IP addressing plans, routing protocols, dhcp and connections.
- **Screenshots or Configurations**:
  - Add screenshots of router/switch configurations, such as routing protocol setup or IP assignments.
- Example code snippet for EIGRP:

```
1. For eigrp is 10 ospf 1and rip
2. router eigrp 10/router rip/ospf 1
3. network 192.168.1.0
4. network 192.168.10.0 as an example
```

- **Topology Diagram**: As shown below, these are only 2 deptt Right one is CS and left one is AI



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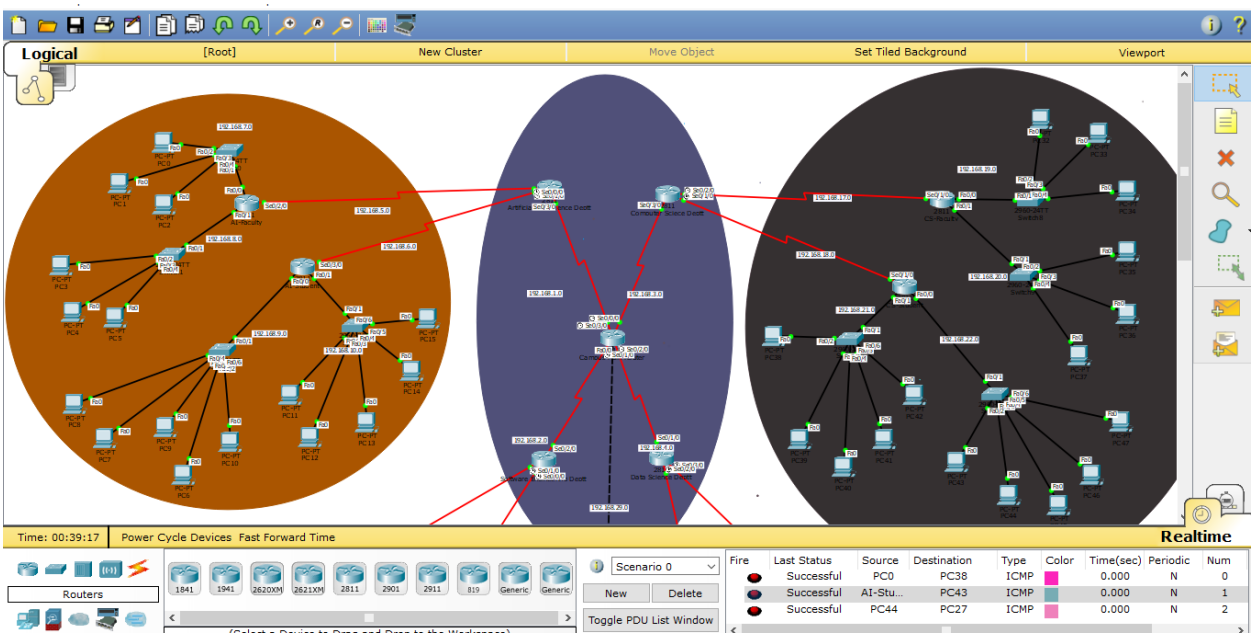
5. Results and Testing

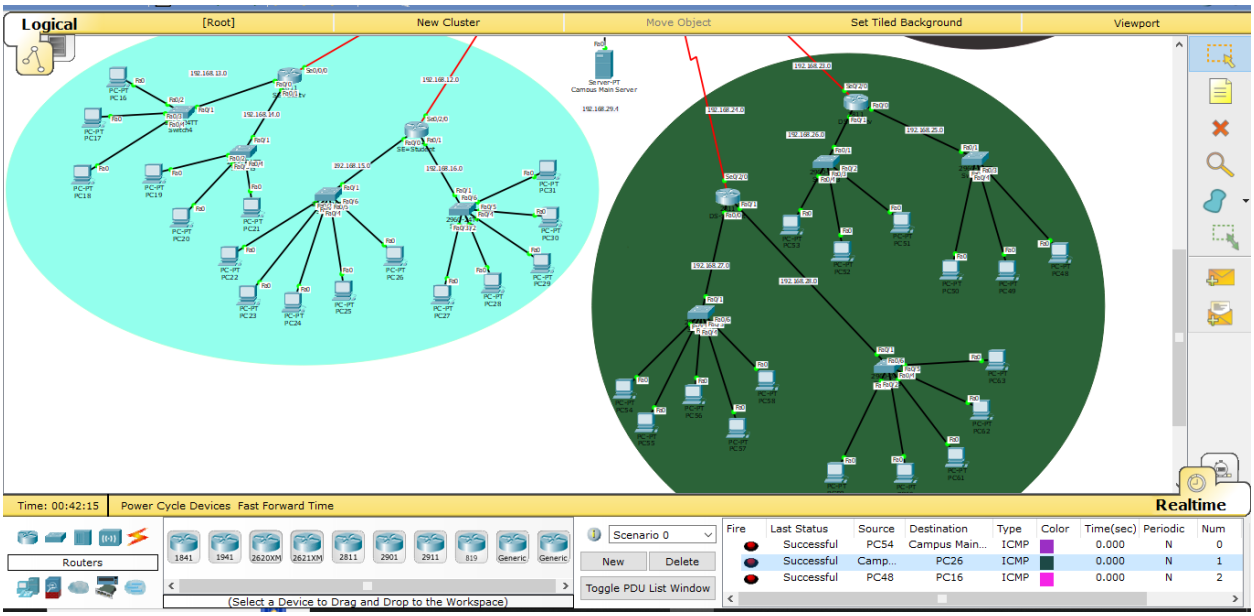
- **Functional Testing**:
  - For my project testing, its main server connected to Main Campus router in which using DHCP dynamically assign ip's to PC's and they are all communicate with each other.
- **Screenshots**:
  - Here below are the some screen shot of my CLI and my message passing.



These 3 messages are passed, so the result is my routing is correct.

6. Challenges and Learnings

- **Challenges**: The main challenge I have faced are as follows.
  - To communication between EIGRP and Rip router and their pcs to use redistribute
  - 2 departments have EIGRP and 2 have rip routing, and then main routers have OSPF the main challenge to communicate between those because of different routing protocol.
  - I also used the Server in which dynamically assigned IP'S to host/end system and I failed 3 times to connect but at the end this all works fine.
- **Learnings**:
  - I have learned different routing protocols and how to communicate with each other using redistribute command.



Messages passing End to End system, Server to End system & end system to Server.

7. Conclusion

- Summarize project achievements:
  - This project successfully demonstrated the design and implementation of a hierarchical university network using Cisco Packet Tracer. The use of multiple routing protocols and DHCP to understanding the real life application.