EPICODE - S1/L5

12/04/2024

IOSIF CASTRUCCI

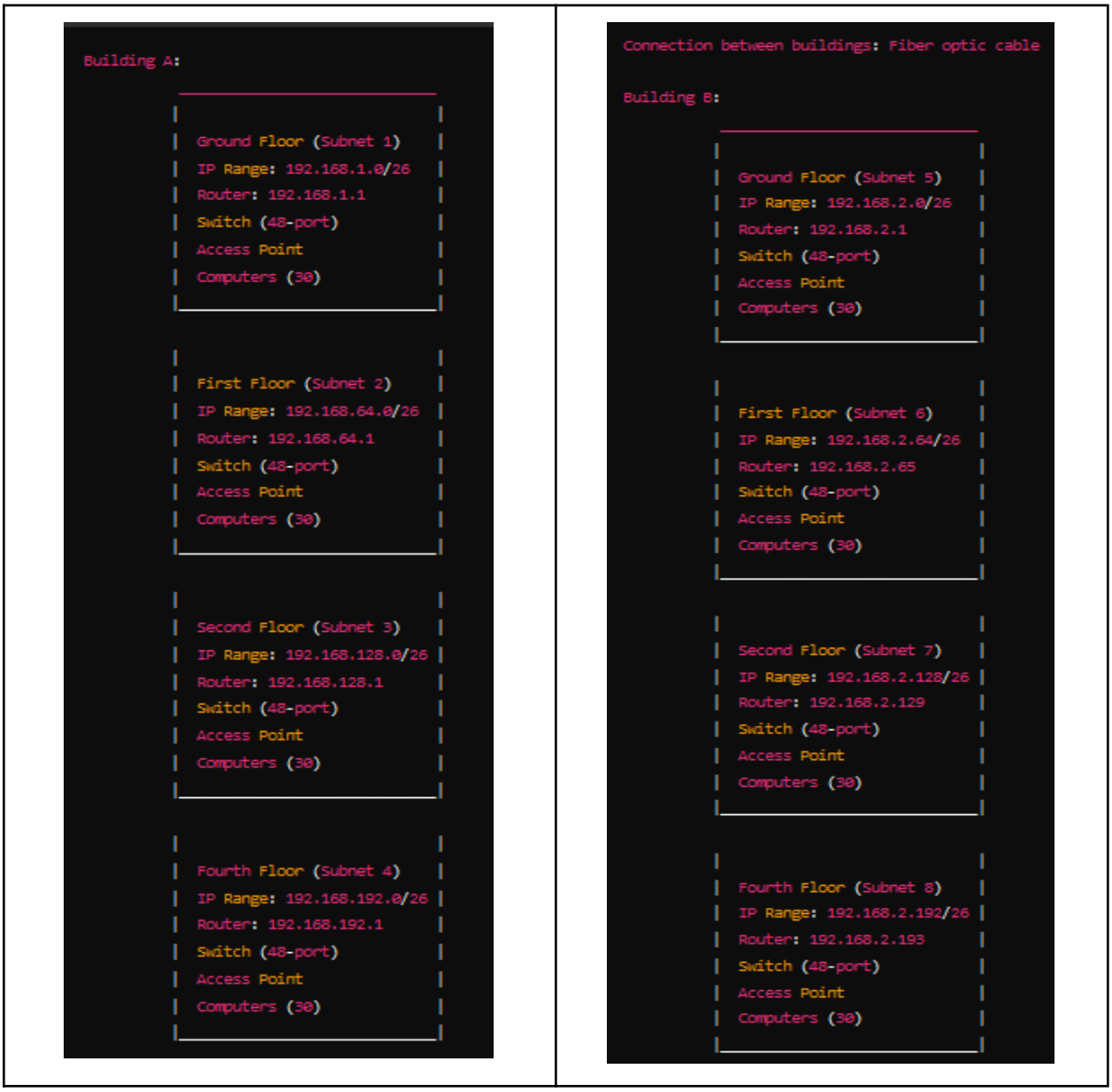
Exercise Context:

Today's exercise involves designing a network in the following context: A company has two buildings with 4 floors each. Each floor has about 30 computers. There is a road between the two buildings, and the distance is approximately 30 meters.

Tasks:

1. Design the network and provide a preliminary cost estimate.

Proposed Network Topology:



Building A:

Floor	IP Network	IP Gateway	IP Broadcast	IP Host Range
Ground	192.168.1.0/26	192.168.1.1/26	192.168.1.63/26	192.168.1.2 - 192.168.1.62
First	192.168.64.0/26	192.168.1.65/26	192.168.1.127/26	192.168.1.66 - 192.168.1.126
Second	192.168.128.0/26	192.168.1.129/26	192.168.1.191/26	192.168.1.130 - 192.168.1.190
Fourth	192.168.192.0/26	192.168.1.193/26	192.168.1.255/26	192.168.1.194 - 192.168.1.254

Building B:

Floor	IP Network	IP Gateway	IP Broadcast	IP Host Range
Ground	192.168.2.0/26	192.168.2.1/26	192.168.2.63/26	192.168.2.2 - 192.168.2.62
First	192.168.2.64/26	192.168.2.65/26	192.168.2.127/26	192.168.2.66 - 192.168.2.126
Second	192.168.2.128/26	192.168.2.129/26	192.168.2.191/26	192.168.2.130 - 192.168.2.190
Fourth	192.168.2.192/26	192.168.2.193/26	192.168.2.255/26	192.168.2.194 - 192.168.2.254

Cost Estimate:

- 240 HP All-in-One Computers: 240 * $640 = $153,600
- 8 Cisco Switches: 8 * $1500 = $12,000
- 8 Routers: 8 * $340 = $2,720
- 8 Cisco Access Points: 8 * $100 = $800
- Cables/Accessories: $3000
- Workforce: 32 hours * $50/hour = $1600

Total Estimated Cost: $153,600 + $12,000 + $2,720 + $800 + $3000 + $1600 = **$173,720**

Conclusion:

This network design segments the network efficiently across the two buildings, ensuring each floor operates within its own subnet. The chosen hardware and the estimated cost are aligned with the requirements and provide a robust solution for the company's network needs.