COMPUTER NETWORKS PROJECT
CL-3001 Fall 2025

Submission Deadline: 7th December 2025

Instructions:

Don't copy, don't cheat. The evaluation criteria are very strict so do everything by yourself else you will be in big trouble.

The statements are self-Explanatory.

1. Use **Packet Tracer Student Version 8.2.2** or above to simulate this network.
2. Don't cheat, your efforts will be valued but the cheater will be **marked 0**.
3. Everything is self-explained, solve it yourself.
4. Make multiple copies of pkt files for last moment mishaps.
5. The VLSM tree for subnetting and host assignment for each network must be completed **handwritten** on a chart and submitted along with the simulation (Packet Tracer file).
6. During your demo, you must bring the handwritten VLSM tree with you. This is **mandatory**.
7. The **deadline is fixed** and non-negotiable. It is strongly recommended to start the project immediately and perform each block operation step by step to ensure timely completion.

You are given the network design with minimal technical documentation; your task is to make this up and run. Use all your mind capabilities to solve this.

1. Following are the steps you need to perform in the topology according to the given layout. Configure this scenario and find your given IP address in the file " IP address " attached with this. Find out the Network Addresses and start working with them. And use them as required.

2. Please find the number of required hosts per subnet in the given file. Each student is given a different number of required hosts per subnet. Networks are labeled alphabetically in the given file of IP ADDRESSES. The networks with Router 5, 6, 7, 8 and 9 are not labeled so you can choose any number of hosts for those subnet from the VLSM tree i.e., vacant subnet. If the host requirements for any network exceed the capacity of the given CIDR notation, you MUST adjust the CIDR accordingly. For example, if a network requires 12,000 hosts and you're given 192.168.0.0/24 (254 hosts max), you must use /18 or larger (16,382 usable hosts). Your VLSM tree must document all adjustments with justification.

3. Use OSPF with area 1 in First Block for Routing , EIGRP 11 in Second Block , Rip in Block Third in first row. In second row apply RIP in first block and OSPF with area 2 in the last block as mentioned on the top of each block.

4. Use Redistribution on Router 1, Router 2, Router 3 and Router 4 for connecting EIGRP with OSPF, OSPF with RIP and EIGRP with RIP. Use Redistribution on Router 4 for connecting OSPF area 1 with OSPF area 2.

5. All hosts in above row EIGRP, OSPF area 1 and RIP will get IP addresses from "DHCP 2" present in the second block.

6. All hosts in OSPF area 2 and RIP in second row will get hosts from "DHCP 1" present in OSPF area 2 block.

7. You have to use VLSM in each network of the topology.

8. You have to IMPLEMENT NAT in Router 10 with the Network G. Use the Private IP Address given to you in the attached file for Natting.

9. One of the PCs of Network L will not be allowed to access the Web server. One of the PCs of Network E will not be allowed to access the Data server in the 1st block. All hosts connected in network A will not be allowed to access TFTP Server.

10. The TFTP, Web and Data servers do not need to have running services. They will simply be treated as hosts. You just need to block the access of those servers from respective networks. (Access List)

Good Luck!