

Course Name: Networks (1)

Code: ECE 462, CCE 462 (2019 Reg.)

Program: Electronics and Communication Eng. (ECE) Program & Computer and Control Eng. (CCE) Program

Academic Year: 2023/2024

Level: Fourth Year

Semester: First

In El shorouk academy, if communications and computers department is granted the block of addresses **192.168.16.0/24**. If the department head chooses to construct a network on each department floor individually. where a separate network connects each faculty member's room and labs on the same floor. **Define the new subnet mask required to cover this network**. Design and simulate this network using eNSP or cisco packet tracer.

1. If you use router with two interfaces only (according to simulator version used), you should keep the first and third floors in the same LAN.
2. **You must remember to configure the gateway interfaces of the router.**
3. **Check connectivity from one end to another using Ping command within the same floor and others within different floors.**
4. **You should use trace the route within different LANs.**
5. Besides, **show the configuration for different PCs on each floor.**

Planning:

Floor	Rooms		Labs		
1 st	Room 107	2 PCs	Lab 106	2 PCs	4
	Room 100	1 PC	Lab 104	1 PC	2
	Room 103	2 PCs	Lab 102	18 PCs	20
2 nd	Room 212	2 PCs	Lab 211	10 PCs	12
	Room 213	2 PCs	Lab 207	1 PC	3
	Room 210	2 PCs	Lab 206	10 PCs	12
	Room 209	1 PC	Lab 204	10 PCs	11
	Room 208	2 PCs	Lab 201	2 PCs	4
	Room 205	1 PC			4
	Room 203	1 PC			4
	Room 202	2 PCs			

Handwritten calculations and totals:

- For 1st floor: 4 + 2 + 20 = 26
- For 2nd floor: 12 + 3 + 12 + 11 + 4 + 4 + 4 = 46

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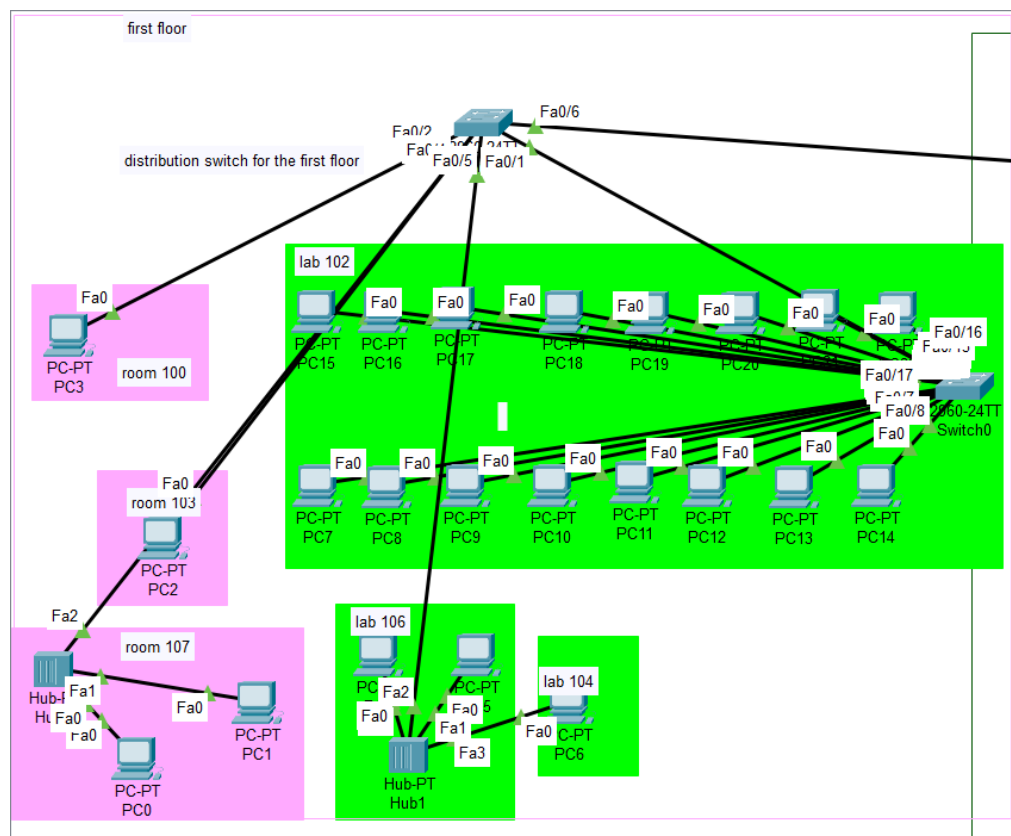
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3 rd	Room 307	2 PCs	Lab 304	2 PCs
			Lab 305	2 PCs
			Lab 306	2 PCs

Suggestion network topology:

For the first floor



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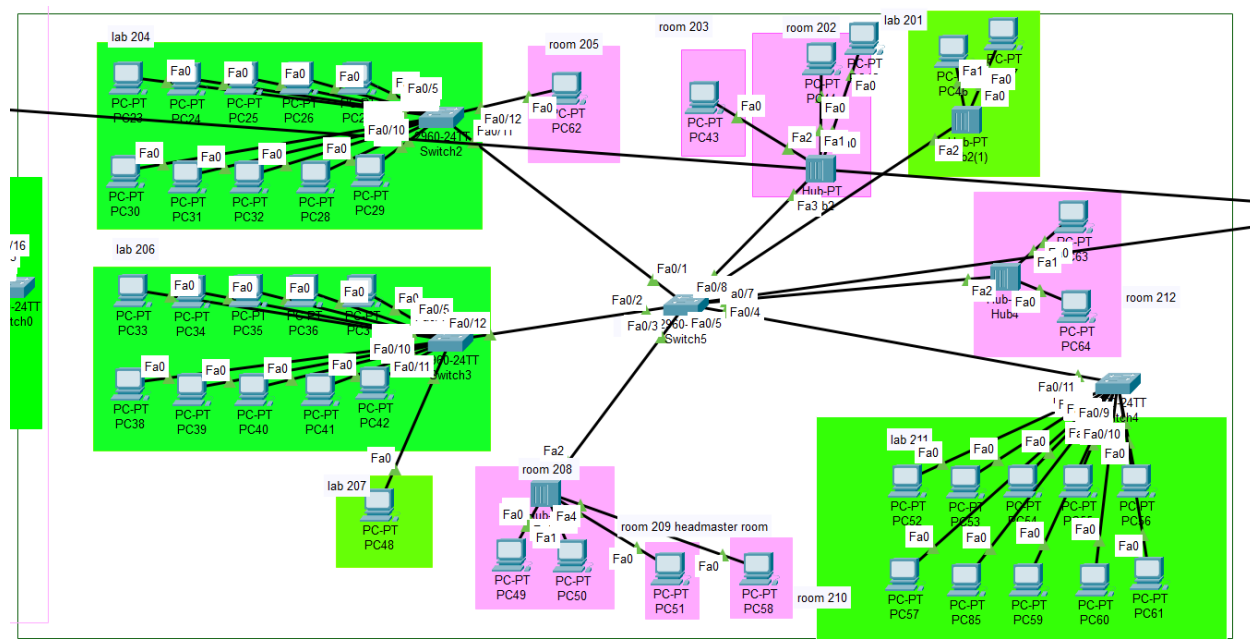
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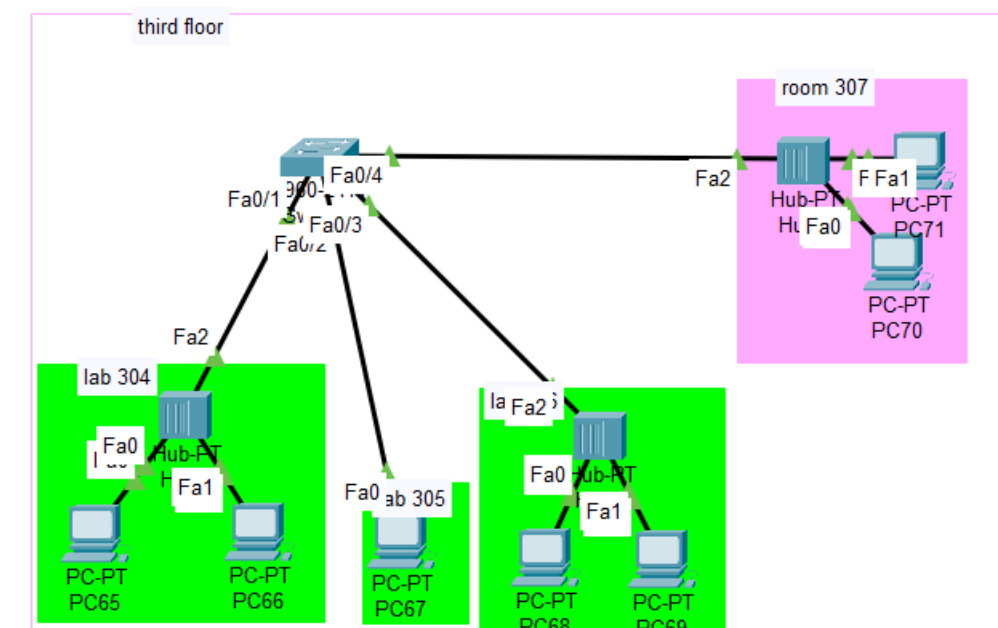
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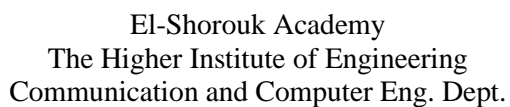
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For the second floor



For the third floor





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For connecting the three floors

