

KLE Society's
KLE Technological University



**Report on
Computer Networks Lab
(20ECSP305)**

Site Visited

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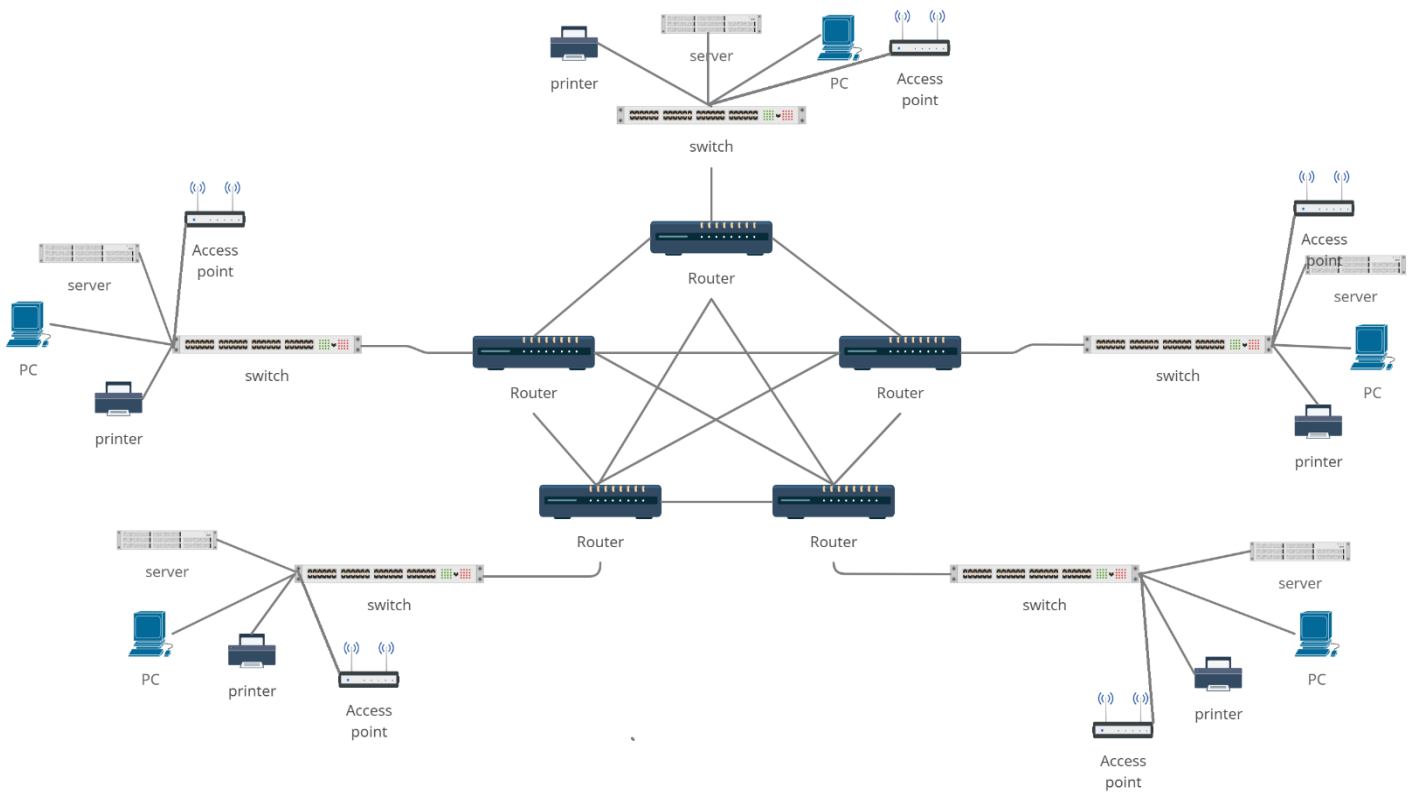
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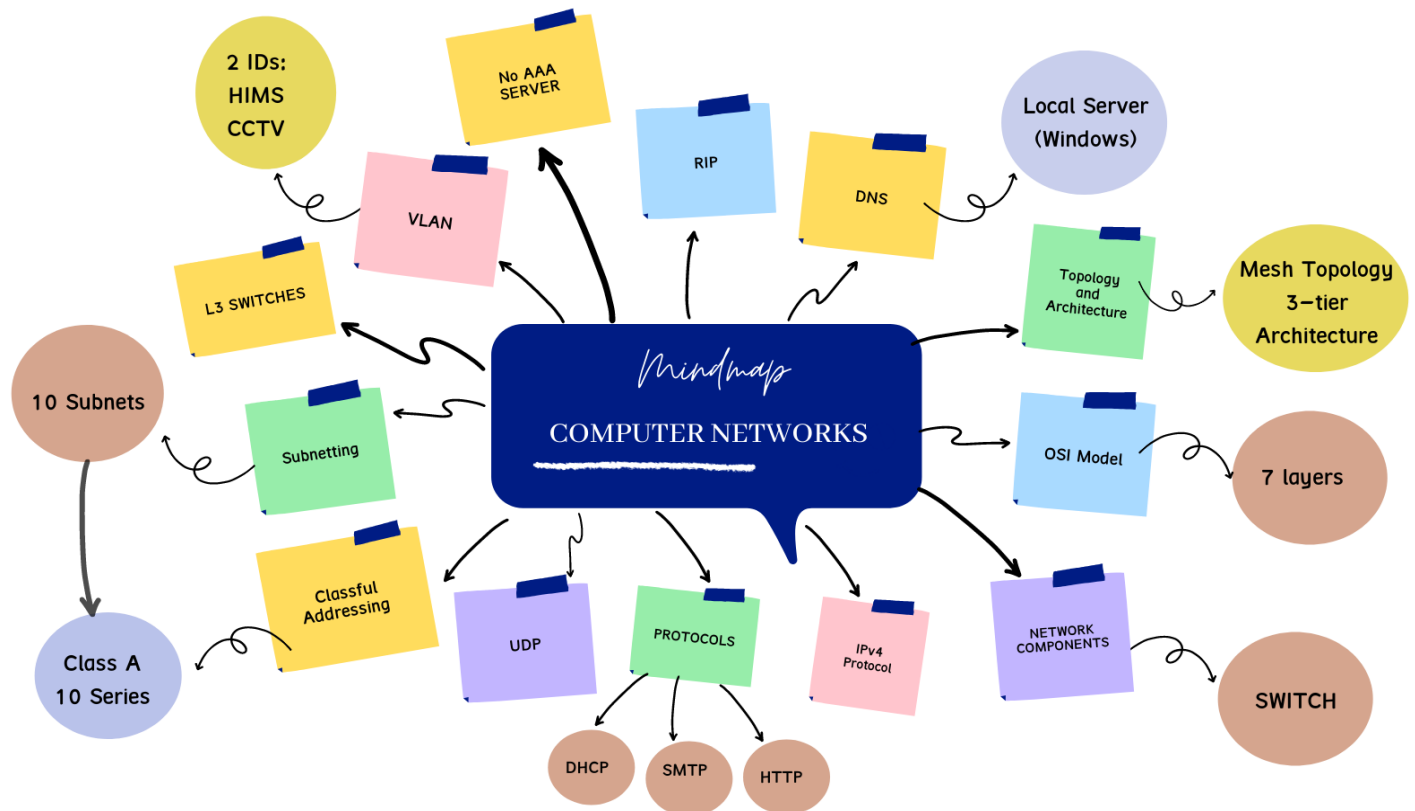
1. NETWORK ARCHITECTURE



Network Topology: - Mesh

A mesh topology is a network setup where each computer and network device are connected to each other. This set of topology allows for multiple transmissions to be distributed even if single connections drop.

2. MIND MAP



As shown in the figure above we have registered the use of our theoretical and functional concepts from the CN-1 and CN-2 studies.

DHCP- DHCP stands for Dynamic host configuration protocol that uses the "DORA" process as "server **D**iscovery, IP lease **O**ffer, IP lease **R**quest, and IP lease **A**cknowledgement " to automatically change the IP address of network nodes.

AAA Server- AAA Server is a server system that handles user's requests for access to computer services and, by business, provides Authentication, Authentication and Accounting (AAA) services

FIREWALL - Firewall is a network security device that monitors and filters incoming and outgoing network traffic based on an organization's pre-established security policies. Basically, a firewall is actually a barrier that lies between a private internal network and a social network.

ISP (BSNL, RAILTEL, JIO) - In our study the Hospital is provided with online services by BSNL, RAILTEL, JIO at the international level ISPs.

3. GAPS IDENTIFIED

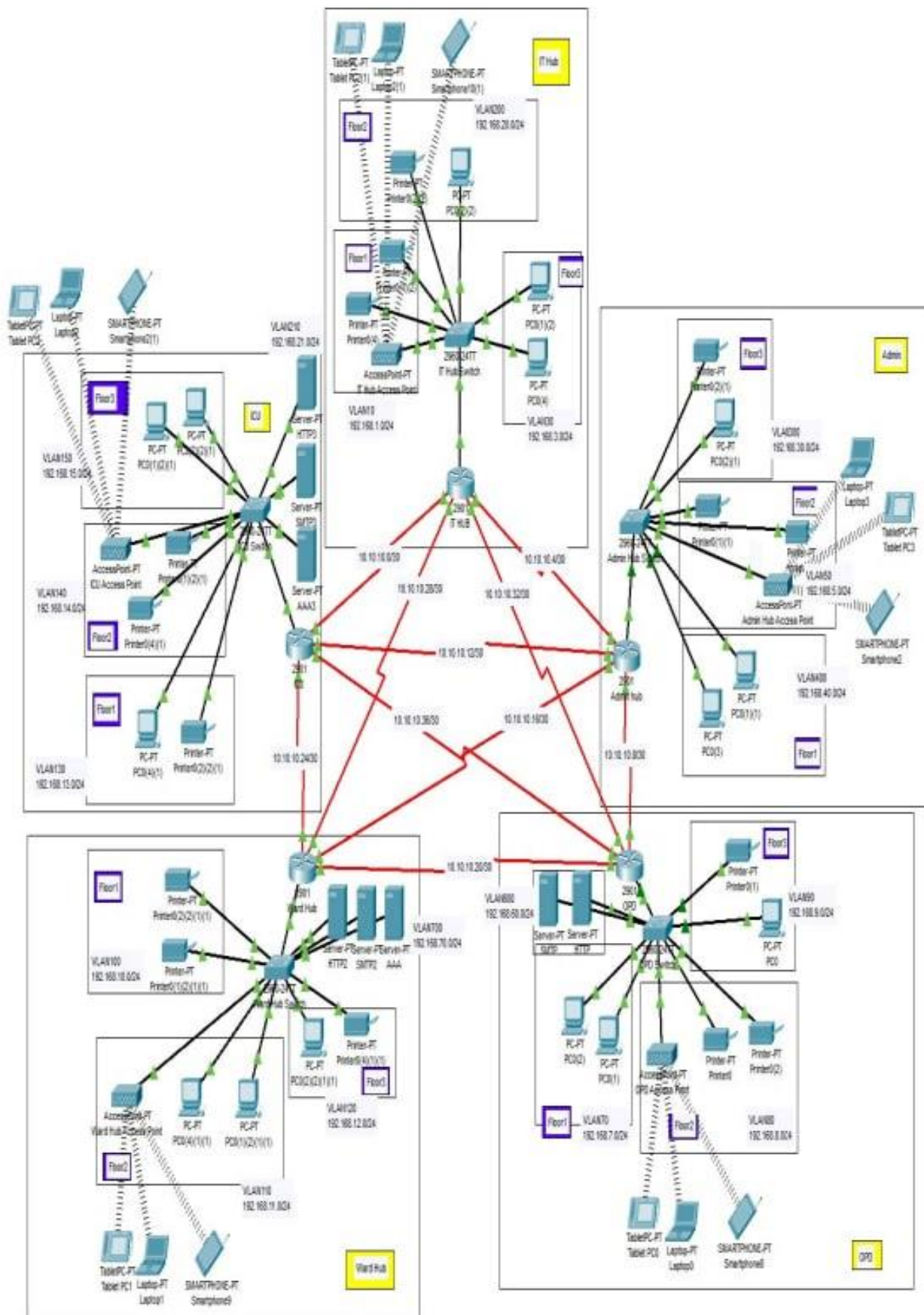
- AAA Server is not present
- DHCP is also not used.
- High Bandwidth transmission channel is being used without need of.

4. PROPOSED SOLUTION

Here we discuss the solution to the gaps discussed in the previous section: -

- Installation of DHCP server to assign IP's dynamically to each and every device to be connected
- Decrease the high-bandwidth transmission channel to low using 1Gbps wires instead of 10Gbps.

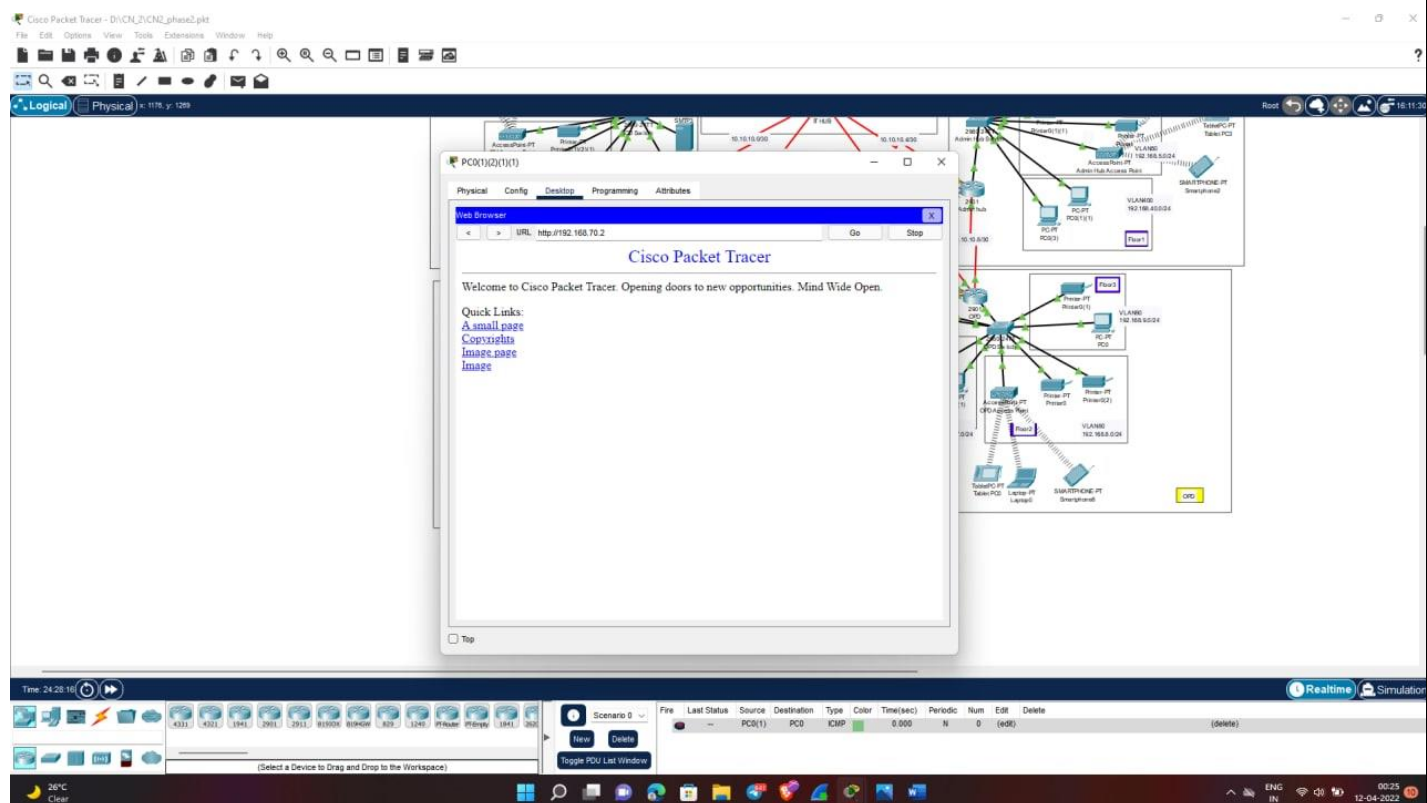
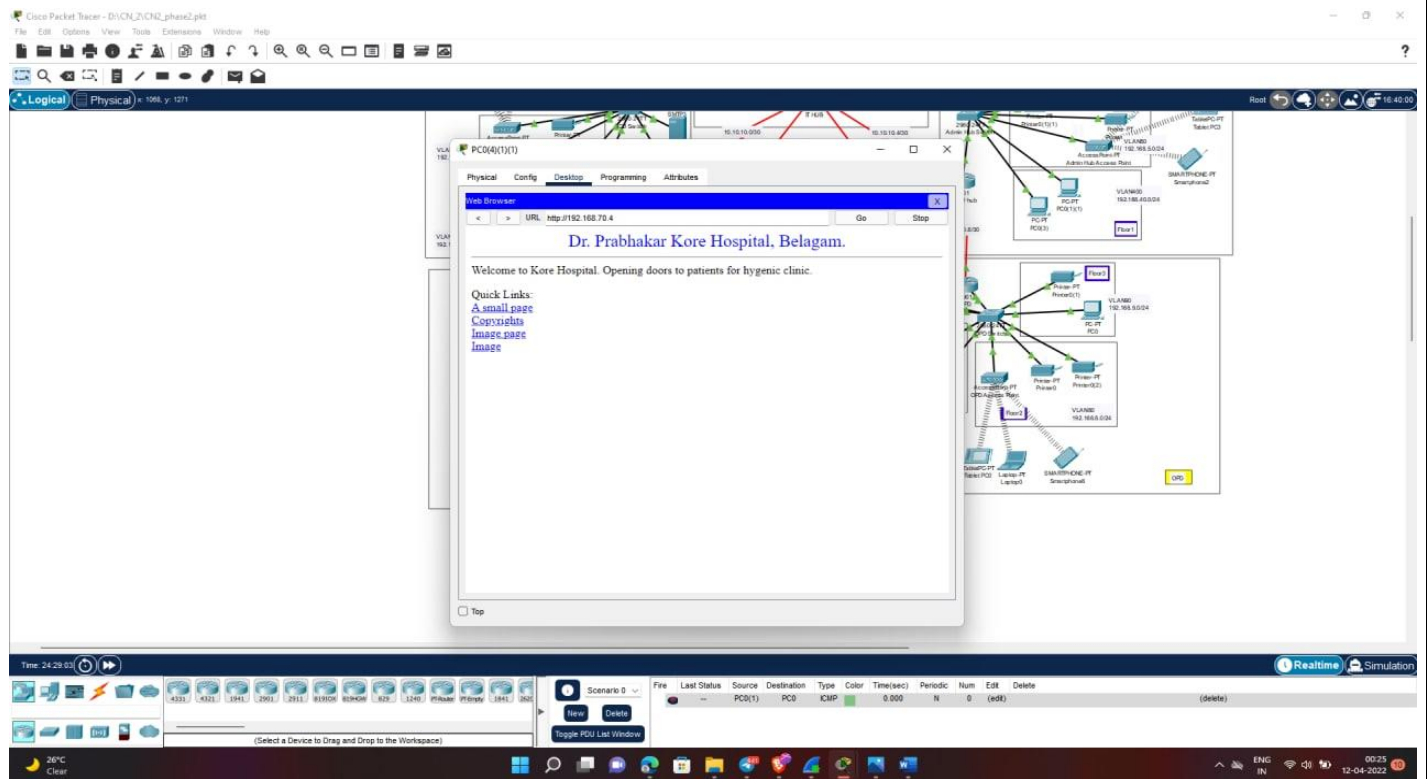
5. SIMULATION



5.1 COMPONENTS & DEVICES

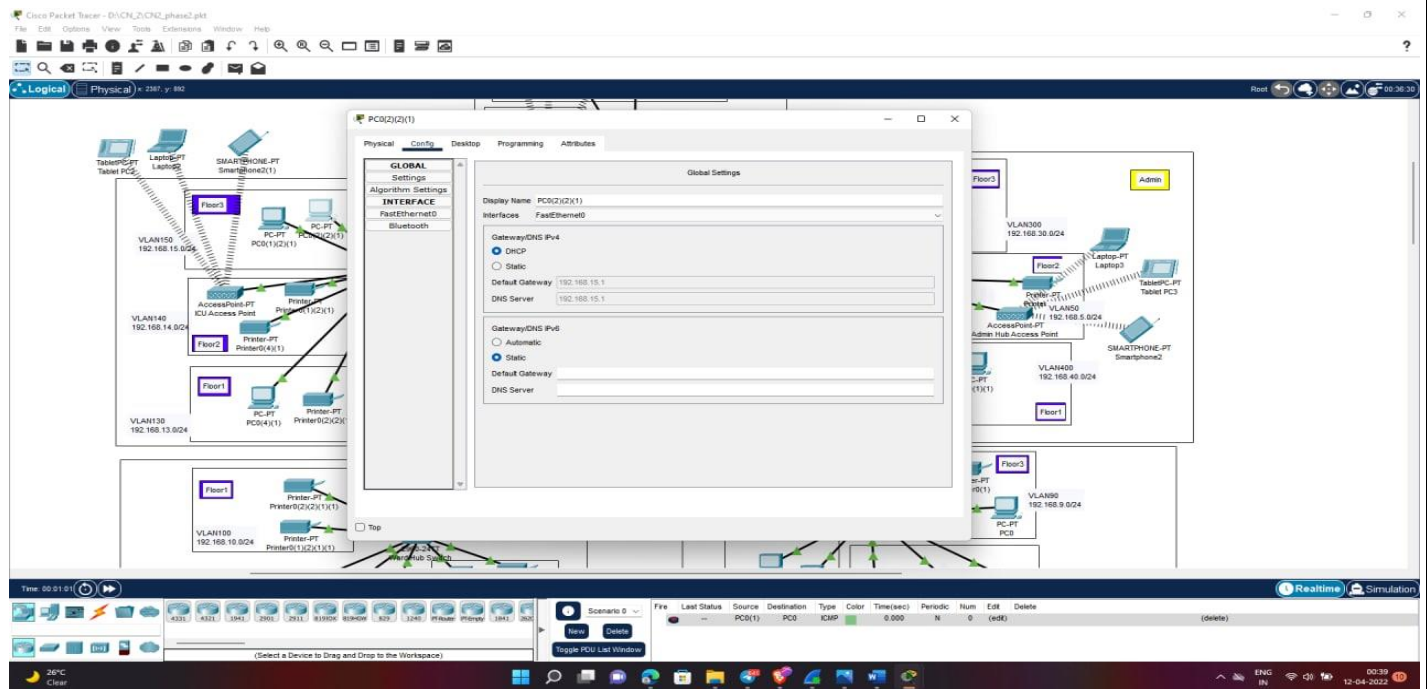
- Router
 - PC-PT
 - Printer-PT
 - Wireless Laptop-PT
 - Wireless Smartphone-PT
 - Wireless TabletPC-PT
 - AccessPoint-PT
 - Server SMTP
 - Server HTTP
 - Server AAA
 - ICU Switch
-
- The simulation consists of the mesh topology with total five subnet networks. Those are IT hub, ICU, Admin, OPD, Ward Hub.
 - The Device model consist of an three service models those have SMTP, HTTP and server of AAA
 - Also each ward connected with wireless and wired connection between the server and systems(laptop, pc, printer etc).
 - In this simulation ip configuration should be established through dynamic host configuration protocol.
 - Set of pcs or floor of systems will be connected with vlan.

5.2 SIMULATION & OUTPUT RESULTS

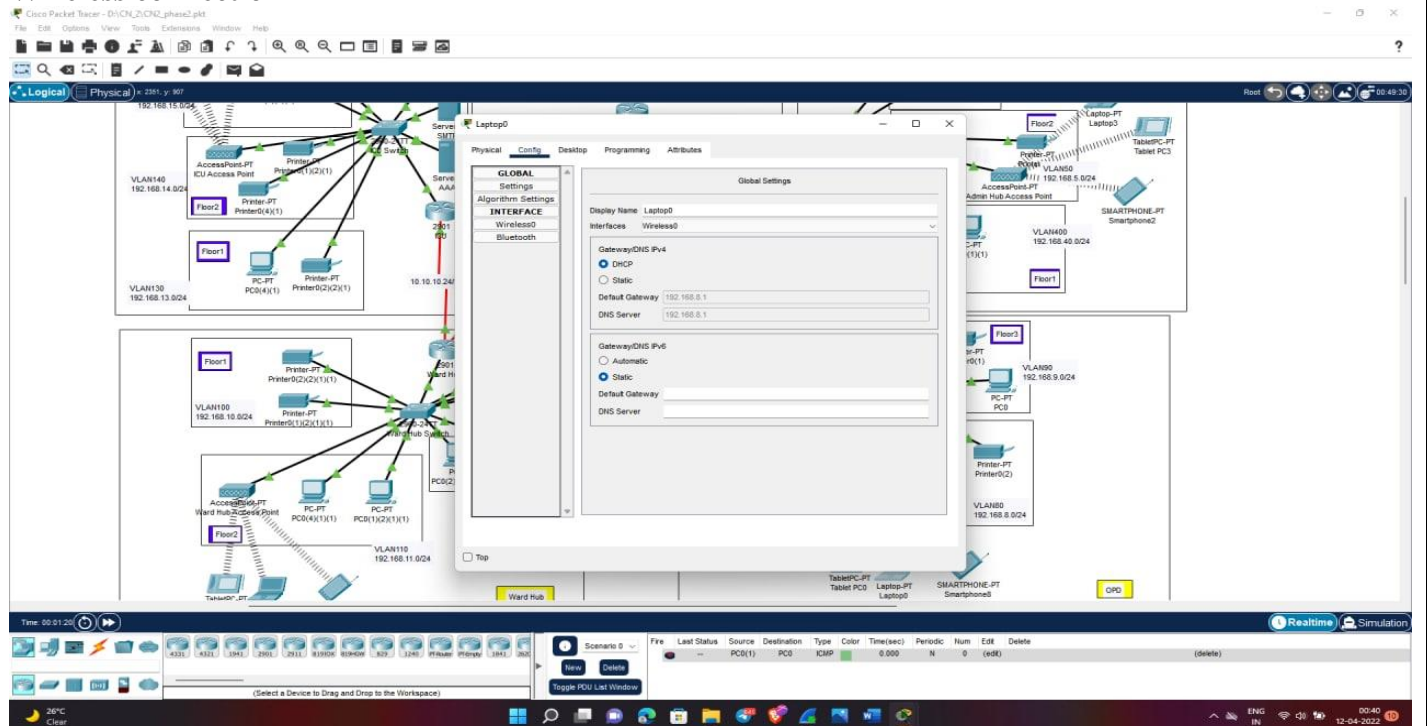


DHCP Configuration:

Wired connection



Wireless connection



6. EXPERIENCE

- We have found a wealth of useful information over Computer Networks and the information about the Cisco Packet tracer on how networks in small scale systems are built and maintained.
- We have gained insights into how really the network is simulated in the world.
- Campus tours and exemplary lessons also help us correct and connect the concepts learned in the CN class with the real world.