

Project Progress Report-2

(Submission Date: October 22, 2019)

Implementation of different types of models in Packet tracer

**BACHELOR OF ENGINEERING
IN
COMPUTER SCIENCE & ENGINEERING**



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Introduction:

In this project, basically we have to implement various models by the use of the packet tracer Like, 3 layer Hierarchical model, Campus Area Network, Hospital Network, NAT(static), VLAN(switch-1), Enterprise Network. This three layered model is the basic foundation for creating small and larger Networks. Using this we can design a hierarchical network with dividing the network into 3 different layers which also help us in reducing the network complexity. Today's networks are complex and large, wide variety of technology, running multiple services and also having challenges with functionality, increasing demand of bandwidth and compatibility with other businesses and vendors. So for designing large networks we need to have such hierarchical model for designing our network.

Feasibility Study:

This project is very important in the networking sector, as the company will implement the huge network according to the packet tracer after implementing a prototype in the packet tracer. And without implementing a prototype if the idea doesn't work out then the company or firm will be in huge loss, So that is the need of this project. This project needs a network and a packet tracer software to implement the models in the software and then implement the model in real life accordingly.

1. Project Goal:

The main goal of this project is to implement the various models in the networking using the cisco packet tracer software. The models which we will be implementing are as follow:

- Campus Area Network(CAN).
- NAT(static)
- VLAN(switch-1)
- Hospital Network
- 3 layer Hierarchical model

➤ **Camus Area Network(CAN):** A campus network, campus area network, corporate area network or CAN is a computer network made up of an interconnection of local area networks (LANs) within a limited geographical area. The networking equipments (switches, routers) and transmission media (optical fiber,

copper plant, Cat5 cabling etc.) are almost entirely owned by the campus tenant / owner: an enterprise, university, government etc.[3] A campus area network is larger than a local area network but smaller than a metropolitan area network (MAN) or wide area network (WAN).

- **NAT**: Network Address Translation (NAT) is the process where a network device, usually a firewall, assigns a public address to a computer (or group of computers) inside a private network. The main use of NAT is to limit the number of public IP addresses an organization or company must use, for both economy and security purposes.
- **VLAN**: VLAN: A VLAN is a group of devices on one or more LANs that are configured to communicate as if they were attached to the same wire, when in fact they are located on a number of different LAN segments. Because VLANs are based on logical instead of physical connections, they are extremely flexible.

VLANs define broadcast domains in a Layer 2 network. A broadcast domain is the set of all devices that will receive broadcast frames originating from any device within the set.

- **Hospital Network**: In a hospital network we have to design the network which is used by most of the hospital and the hospital network is completely owned by a Hospital.
- **3 layer Hierarchical model**:

Core layer: This layer is considered the backbone of the network and includes the high-end switches and high-speed cables such as fiber cables. This layer of the network does not route traffic at the LAN.

Access layer: This layer includes hubs and switches. This layer is also called the desktop layer because it focuses on connecting client nodes, such as workstations to the network. This layer ensures that packets are delivered to end user computers.

Distribution Layer:

The distribution layer is responsible for routing. It also provides policy-based network connectivity

2.Project Work done till date:

Firstly, to make this project work (we) the team have to go through some websites to collect some information about the different types of models in the networking and their implementation using the packet tracer and to understand the concept of working of various models. In our project there are five models that we have to implement and currently I'm on the 4th model and in transit to implement it. And as far as concerned I have completed the previous four models using packet tracer and will be working on the next one models in the next progress report.

2.1 Working Model of the Project: (Methodology Diagram)

The method will be firstly to install a packet tracer software on your system.

Then implement the models with the router, switches and hub .

And after implementing the models just run the program to check for any errors in the program.

1. To install the packet tracer software.
2. Then implement the models with the reference of online research site.
3. Now, execute the models in the packet tracer to check whether there is some error in implementing the models.

2.2 Total numbers of modules/phases in the project:

Initiation Phase: We have initiated the initial phase, that is we have installed the software Cisco packet tracer 7.2.1 on our system.

Planning Phase: In planning phase we had roamed to various website to collect some information that will be helpful in implementing our various models in the packet tracer.

Execution Phase: Currently we have completed working on the 2nd model and we are implementing the 3rd model which is VLAN model.

Closing

2.3 Modules covered:

- The initiation phase has been completed.
- And the planning phase has also been completed overall.
- The execution phase is in transit and I have completed 4 models and all I left with is the fifth model.

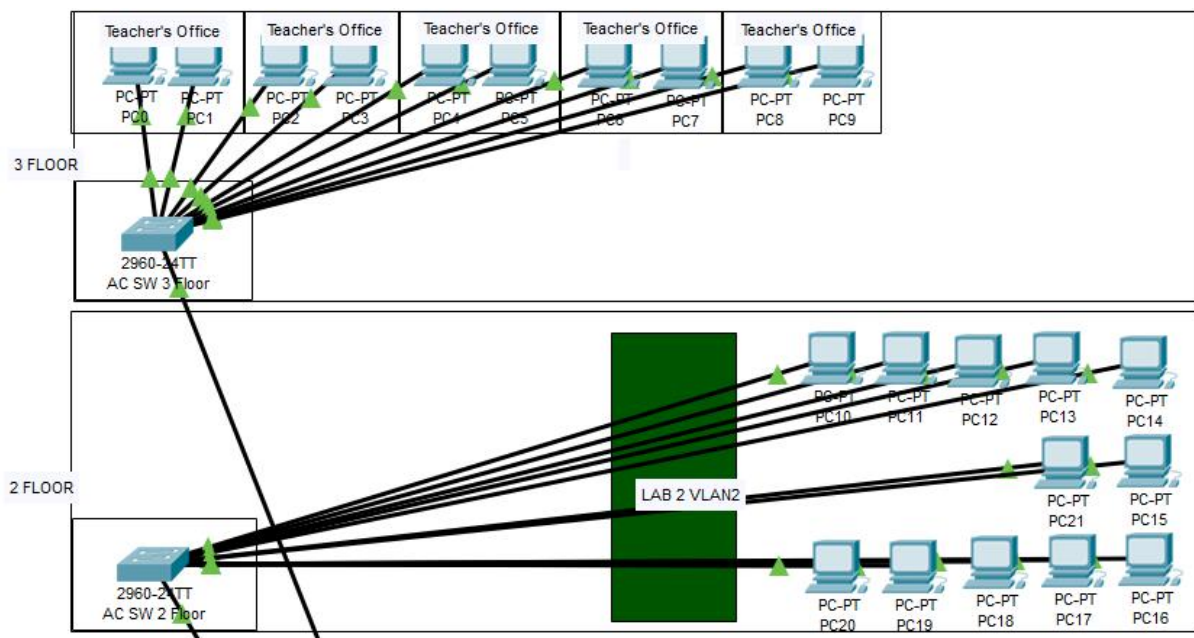
We are working on the 5th model. The execution phase is still in progress, And we are currently working on it. This phase requires the most time and it can take a long time to be executed.

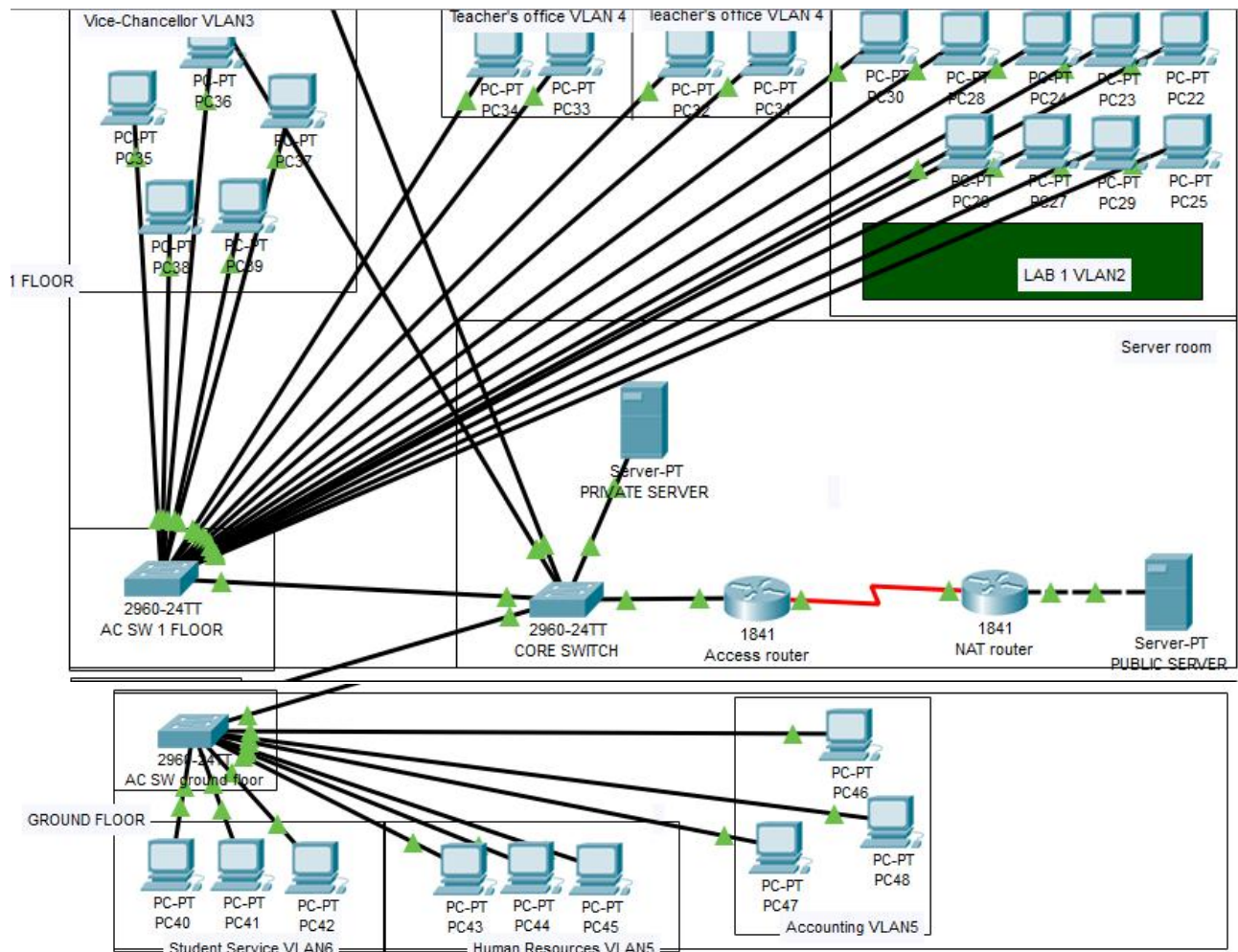
■ Screenshot:



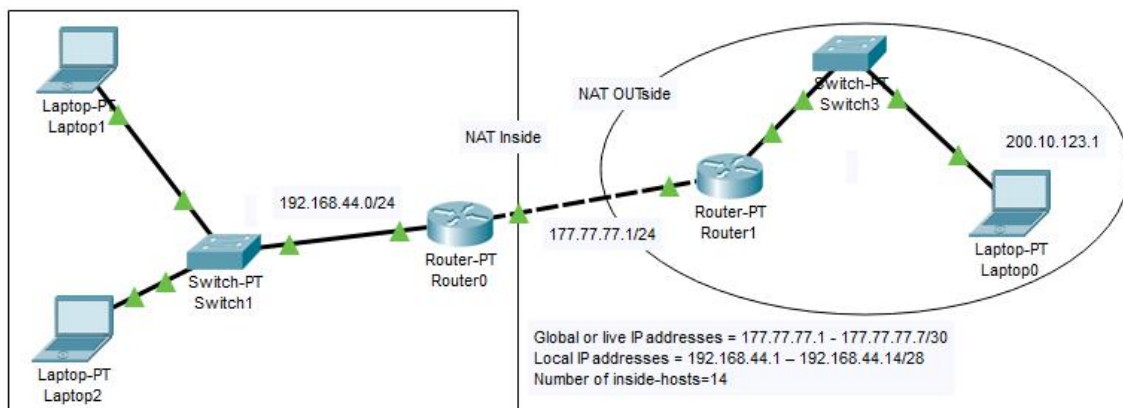
- ✓ Firstly you have to install the software Cisco Packet Tracer as Shown above.

Campus Area Network

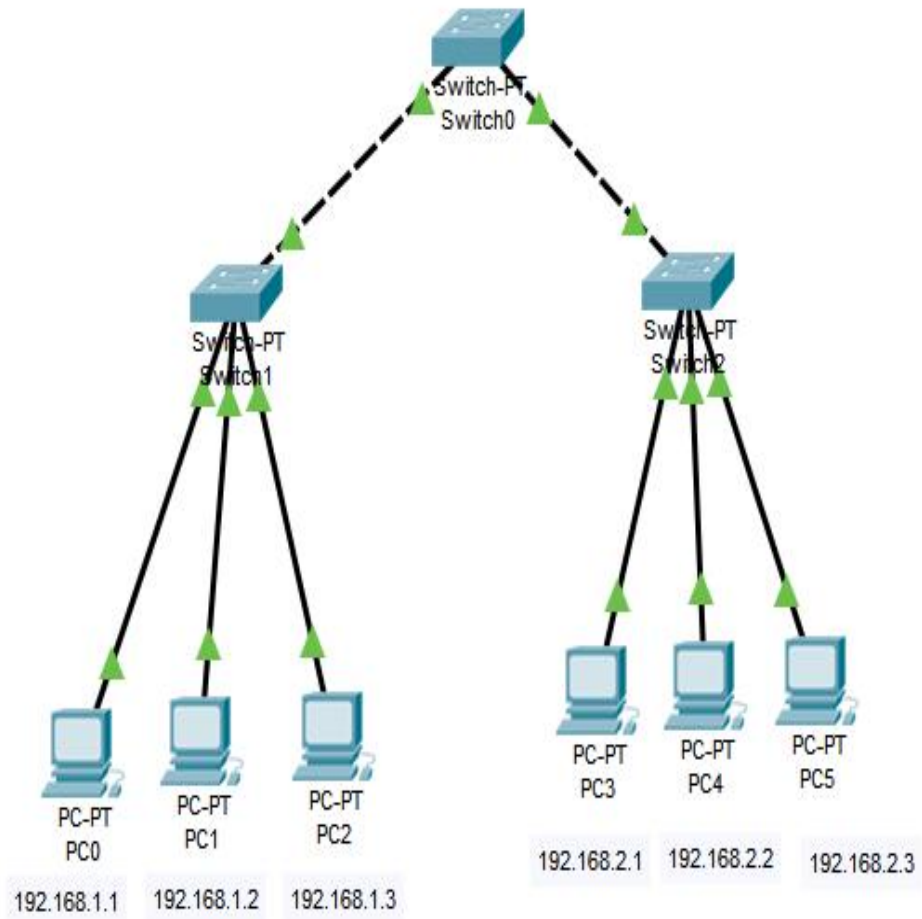




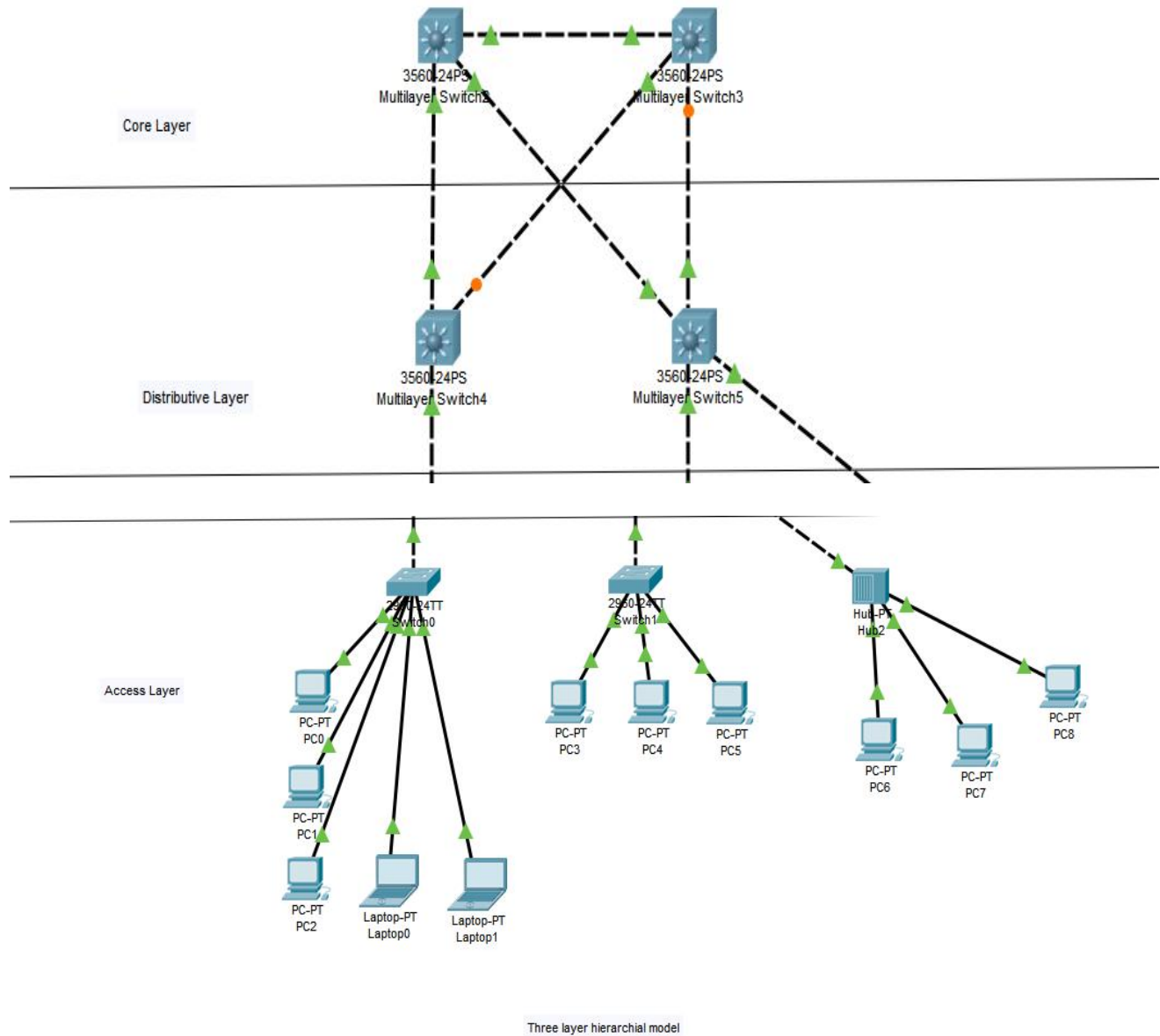
NAT



VLAN



3 Layer hierarchical model



4. Further work to be done:

From now onwards we have to work on the next models and to implement them and to check whether everything is working fine or not. And after implementing the models we have to check whether the model can work in real work, so as to check we can use an option in Packet tracer which

is named as Real-time button which delivers a message from one network of the PC to another network of the PC and check whether the sent message is received by the user or not.