NETWORKING PROJECT - SMITH GRACE with ADEWUMI TOMIWA

BABALOLA UNIVERSITY

PROJECT REQUIREMENTS:

* Babalola University is a large university which has two campuses situated 20 miles apart. The university's students and staff are distributed in 4 faculties; these include the faculties of Health and Sciences; Business; Engineering/Computing and Art/Design. Each member of staff has a PC and students have access to PCs in the labs.

REQUIREMENTS:

a. Create a network topology with the main components to support the following:

b. • Main campus:

Building A: Administrative staff in the departments of management, HR and finance. The admin staff PCs are distributed in the building offices and it is expected that they will share some networking equipment (Hint: use of VLANs is expected here). The Faculty of Business is also situated in this building.

Building B: Faculty of Engineering and Computing and Faculty of Art and Design Building.

C: Students' labs and IT department. The IT department hosts the University Web server and other servers. There is also an email server hosted externally on the cloud.

• Smaller campus:

Faculty of Health and Sciences (staff and students' labs are situated on separate floors)

b. You will be expected to configure the core devices and few end devices to provide end-to-end connectivity and access to the internal servers and the external server.

• Each department/faculty is expected to be on its own separate IP network

• The switches should be configured with appropriate VLANs and security settings

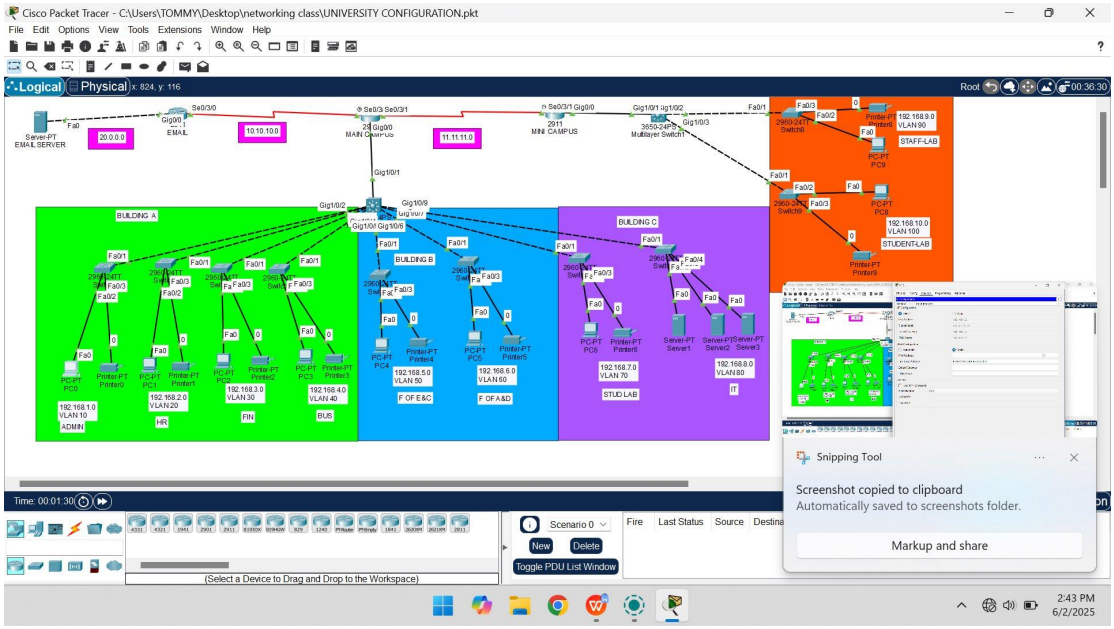
• RIPv2 will be used to provide routing for the routers in the internal network and static routing for the external server.

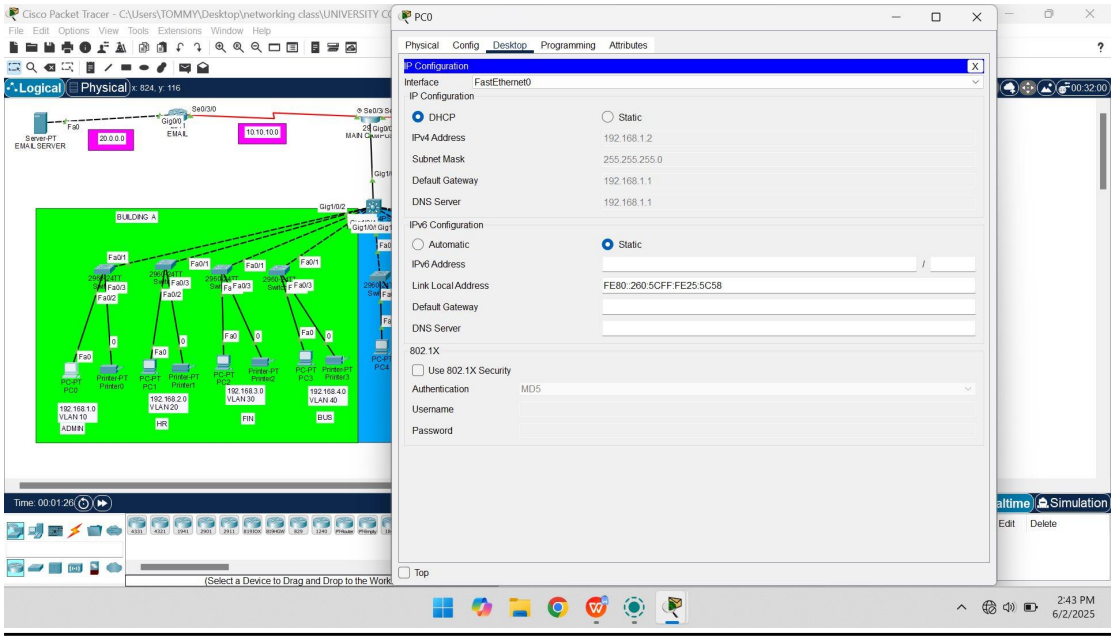
• The devices in all buildings will be expected to acquire dynamic IP addresses from a router-based DHCP server

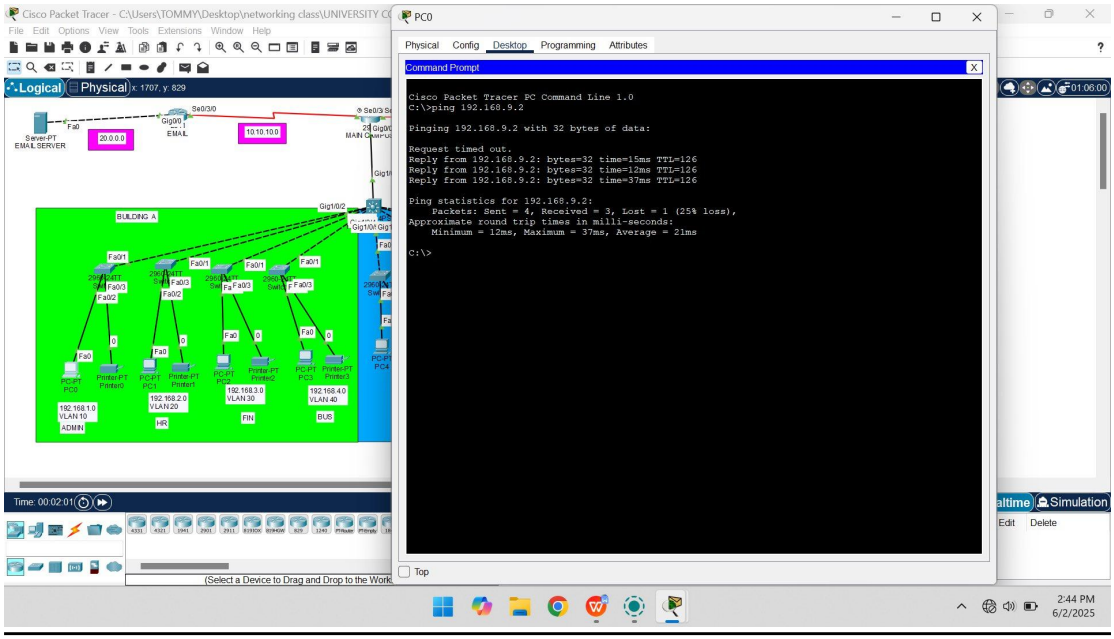
Tasks:

Task 1: Your task is to plan, design, and prototype the network topology for Babalola University's network using Cisco Packet Tracer.

Task 2: Configure in Packet Tracer the network with appropriate settings to achieve the connectivity and functionalities specified in the requirements







STEPS WE TOOK:

- Draw and Design your topology: We used a BUS topology for this project.
- Configure VLANs, name them, assign ports and configure trunks between switches and to the router.
- Create sub-interfaces on the router, bind them to respective ID and assign IP addresses.
- Create DHCP pools, assign network address, default gateway and DNS address.
- Go to every end device, change option to DHCP and test communication within the network/campus.
- Repeat the last five steps for the mini campus as well.
- Configure RIPv2 on all routers.
- Finally, test all communication across the network i.e main campus to mini campus and vice versa, main campus to email server and vice versa as well as mini campus to email server and vice versa.

Key takeaways:

- Network troubleshooting.