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NPS LAB EXPERIMENT 5

Objective: Implement a smart home setup using Cisco Packet Tracer and verify the configuration of smart devices connected via the network.

STEPS:

1. Set Up the Network Infrastructure:

- Add a Home Gateway (from the Network Devices > Wireless Devices section) to act as the central hub for the smart devices.
- Add a Wireless Router from the same section if needed for connecting devices wirelessly.

2. Add Smart Devices:

- From the End Devices > Home Devices section, drag and drop smart devices (e.g., Smart Light Bulbs, Smart Fans, Smart Doors, Thermostats, etc.) onto the workspace.
- Place the devices near the Home Gateway for easy configuration.

3. Connect the Smart Devices to the Network:

- For wired devices, use Copper Straight-Through Cables to connect the smart devices (e.g., Smart TVs, Desktop PCs) to the Home Gateway.
- For wireless devices, connect them via Wi-Fi to the Wireless Router or Home Gateway.

4. Access and Configure Smart Devices:

- Click on each smart device (e.g., Smart Bulb).
- Go to the Config or Desktop tab.
- Configure the IP settings to obtain an IP address from the Home Gateway automatically (DHCP).
- Assign each device a unique name for easy identification (e.g., LivingRoom_Light, Bedroom_Thermostat).

5. Configure the Home Gateway:

- Click on the Home Gateway.
- Go to the Config tab and ensure DHCP is enabled for the connected smart devices.
- Optionally, configure security settings (e.g., Wi-Fi encryption) if using wireless devices.

6. Verify Device Connectivity:

- Test device connectivity by pinging one smart device from another, or by using the smartphone device available in Packet Tracer to control smart devices.
- Ensure all devices are communicating properly with the Home Gateway and responding to network commands.

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7. Simulate Smart Home Automation:

- Use the Smartphone device to simulate controlling smart devices like turning on/off smart lights, adjusting the thermostat, or locking/unlocking doors.

This creates a smart home network in Cisco Packet Tracer and verifies that smart devices are functioning as intended within the network.