Computer Networking
Season 2024-III
Workshop No. 1 — Packet Tracer Basics

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After some time in classes, a lot of concepts, it is time to challenge you with a practical exercise. This workshop is about `Packet Tracer`, a network simulation tool that allows you to design, build, and configure any network you want (for practice).

The main goal of this workshop is to design a network that supports the following requirements:

1. Your are now an internship computer engineer at *Universidad Distrital Francisco José de Caldas*. You need to create a server *on-premises* with the home web page of the university. The server must:

   (a) Have be recognized by the name `www.udistrital.edu.co`.

   (b) Have a public statis IP address, and a default gateway. In this sense, next values should be used:

   - IPv4 Address: `193.168.100.200`
   - DNS Server: `193.168.100.200`
   - Default Gateway: `193.168.100.1`
   - Subnet Mask: `255.255.255.0`

   (c) In `HTTP services`, delete all web pages but *index.html*. Edit this file and add a welcome message from the university (be creative, you could add a `.css` file if you want).

   (d) In `DHCP services` check the service is *on* and add a new pool with next values:

   - Pool Name: `UDPool`
   - Default Gateway: `193.168.100.200`
   - DNS Server: `193.168.100.200`
   - Start IP Address: `193.168.100.1`

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- Subnet Mask: `255.255.255.0`
- Maximum Users: `50`

(e) In `DNS services`, check the service is *on* and add a new rule with next values:

- Name: `www.udistrital.edu.co`
- Type: `A Record`
- Address: `193.168.100.200`

2. You need to connect your server to the *cloud*. So, using a *Cloud-PT* called `Internet` using the `Ethernet6` in `Cable` mode, to the `FastEthernet0/0` of the server. Here it is important you relate into the *Internet* the cable relation from `Coaxial7` to `Ethernet6`.

3. You need to connect a *Cable-Modem-PT* to the *Internet*. So, using a *Cable-Modem-PT* called `ISP` using the `Port0` to the `Coaxial7` of the internet.

4. As you want to test any student could reach the university website, it is neccessary to run some tests since your home. So, you contact the *ISP* and ask for a *internet service at home*. They give you a *wireless router* called `HomeRouter` with the following values:

- IPv4 LAN Address: `192.168.0.1`
- LAN Subnet Mask: `255.255.255.0`
- Wireless *SSID*: `UD_Invitados`
- Coverage Range (*meters*): `20`

You need to connect the *HomeRouter* to the *ISP*.

5. At home, you have a *PC-PT* called `WorkerPC` with the following values:

- IPv4 Address: `DHCP`

6. Also, you have a *Laptop-PT* called `StudentLaptop` with the following values:

- IPv4 Address: `DHCP`
- Wireless Network: `UD_Invitados`

To test the network, you need to access to a web browser in the `StudentLaptop` and type the URL `www.udistrital.edu.co`. Same test should be done in the `WorkerPC`. The result should be the *university home page* you created into the server.

You must deliver the `.pkt` file with the network design and the `.html` file with the university home page. Also, you must deliver a `.pdf` report with the network design, technical decisions, and the test results. Eveything must be delivered in a `GitHub` repository (*where all workshops will be delivered*).