Computer Networks
Season 2024-I
Workshop No. 3 - Packet Tracer Basics

`Eng. Carlos Andrés Sierra, M.Sc.`
Computer Engineering
Universidad Distrital Francisco José de Caldas

After some months in classes, a lot of concepts, and virtual classes, it is time to challenge you with a practical exerise. 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).
   (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`

Carlos Andrés Sierra, Computer Engineer, M.Sc. on Computer Engineering, Titular Professor at Universidad Distrital Francisco José de Caldas.

Any comment or concern related to this document could be send to Carlos A. Sierra at e-mail: *cavirguezs@udistrital.edu.co*

- 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.