Name: Asjid Tahir

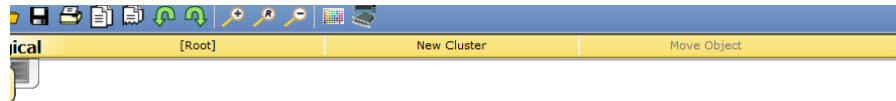**Roll no:** 19p-0085

Lab: Computer Networks

Section: B

Basic Operations on Router:

- <u>Setting Routers Modes on 2600 Series Router:</u>

- <u>Changing hostname of Router:</u>

```
2621XM
Router0
                    Press RETURN to get started!


                    Router>enable
                    Router##configureterminal
                    Translating "#configureterminal"...domain server (255.255.255.255)
                    % Unknown command or computer name, or unable to find computer address

                    Router##configure terminal
                                        ^
                    % Invalid input detected at '^' marker.

                    Router#configure terminal
                    Enter configuration commands, one per line.  End with CNTL/Z.
                    Router(config)#hostname Ajji
                    Ajji(config)#exit
                    Ajji#
                    %SYS-5-CONFIG_I: Configured from console by console
ast Forward Time    |

                                                              Copy        Past
```

- ## Configure Date & Time on Router:

```
Ajji#
Ajji#
Ajji#clock set ?
  hh:mm:ss  Current Time
Ajji#clock set 06:13:00 ?
  <1-31>  Day of the month
  MONTH   Month of the year
Ajji#clock set 06:13:00 5 ?
  MONTH  Month of the year
Ajji#clock set 06:13:00 5 october ?
  <1993-2035>  Year
Ajji#clock set 06:13:00 5 october 2021
Ajji#show clock
*6:13:7.861 UTC Tue Oct 5 2021
Ajji#
```

age of the Day) b

- ## Setting a Banner on Router:

```
*6:13:7.861 UTC Tue Oct 5 2021
Ajji#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Ajji(config)#banner motd # Welcome to Networks Professionals #
Ajji(config)#exit
Ajji#
%SYS-5-CONFIG_I: Configured from console by console

Ajji#exit




Ajji con0 is now available




Press RETURN to get started.




 Welcome to Networks Professionals

Ajji>
```

- <u>Displaying the Router's Running-Configuration and Start-Up Configuration:</u>

```
Ajji>enable
Ajji#show running-config
Building configuration...

Current configuration : 532 bytes
!
version 12.2
no service timestamps log datetime msec
no service timestamps debug datetime msec
no service password-encryption
!
hostname Ajji
!
!
!
!
!
!
!
!
ip cef
no ipv6 cef
!
!
!
!
!
!
!
!
!
!
!
!
!
!
!
!
!
!
interface FastEthernet0/0
 no ip address
```

```
!
interface FastEthernet0/0
 no ip address
 duplex auto
 speed auto
 shutdown
!
interface FastEthernet0/1
 no ip address
 duplex auto
 speed auto
 shutdown
!
ip classless
!
ip flow-export version 9
!
!
!
banner motd ^C Welcome to Networks Professionals ^C
!
!
!
!
line con 0
!
line aux 0
!
line vty 0 4
 login
!
!
!
end
```

- <u>Enable Password and Enable Secret Password with Encryption Techniques/Levels:</u>

```
Ajji#
Ajji#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Ajji(config)#line console 0
Ajji(config-line)#password ajji1234
Ajji(config-line)#login
Ajji(config-line)#end
Ajji#
%SYS-5-CONFIG_I: Configured from console by console

Ajji#exit




Ajji con0 is now available




Press RETURN to get started.
```

```
Ajji con0 is now available




Press RETURN to get started.






 Welcome to Networks Professionals

User Access Verification

Password:
Password:
```

- ## Line Console Password Implementation on CISCO 2600 Series Router:

```
Ajji>enable
Ajji#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Ajji(config)#line console 0
Ajji(config-line)#no login
Ajji(config-line)#no password
Ajji(config-line)#end
Ajji#
%SYS-5-CONFIG_I: Configured from console by console

Ajji#
```

- ## Telnet:

  Telnet is a network protocol used to virtually access a computer and to provide a two-way, collaborative and text-based communication channel between two machines. It follows a user command Transmission Control Protocol/Internet Protocol (TCP/IP) networking protocol for creating remote sessions.
  Telnet is a text-based program that lets you access the console on a router or other device and
  issue commands.

- ## How to telnet?
  You can Telnet into a router using the Telnet client included with Windows. Unlike other protocols, Telnet isn't secure and shouldn't be used over the Internet.
  ## Example:

a user may telnet into a computer that hosts their website to manage his files remotely. A telnet session is a command line interface.

- <u>Line VTY/Telnet Password:</u>

```
Ajji>enable
Ajji#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Ajji(config)#line vty 0 4
Ajji(config-line)#password 1234
Ajji(config-line)#login
Ajji(config-line)#exit
Ajji(config)#exit
Ajji#
%SYS-5-CONFIG_I: Configured from console by console

Ajji#
```

- <u>Network topology:</u>
  A geometric representation of how the computers are connected to each other is called Network topology.
- <u>Uses of Router with different topology:</u>
- **Bus Topology:**
   Simple layout and cheap but vulnerable to failure and only suitable for low traffic volumes. Not used for office networks today, but can still be found within some consumer products.

- **Ring Topology:**
  Easy to manage and with a low risk of collision but reliant on all nodes being powered up and in full working order. Rarely used today.

- **Star Topology** :
  All devices are connected to a central switch, which makes it easy to add new nodes without rebooting all currently connected devices. This topology makes efficient use of cable and is easy to administer. On the other hand, the health of the switch is vital. This topology requires monitoring and maintenance. However, it is a commonly encountered topology.

- **Tree Topology**:
  A hierarchical layout that links together groups of nodes. Creates parent-child dependencies between root nodes and regular nodes. This layout can be vulnerable to failure if a root node has a problem. This topology is complicated and difficult to manage and it uses a lot of cable.

- **Mesh Topology:**
  Each node is connected to every other mode with a direct link. This topology creates a very reliable network, but requires a large amount of cable and is difficult to administer. Wifi networks make this topology more feasible.

- **Hybrid Topology:**
  Combines two or more of the standard topologies. This can be a good solution to create quickly link together different existing networks into a unified system. Don't confuse the term "hybrid network topology" with "hybrid system" – a term that is applied to the combination of onsite and cloud resources.

Student Task #01: