NAME :: IBRAR BABAR

ROLL NO. P19-0104

COMPUTER NETWORK LAB (B)

LAB#3 (ASSIGNMENT # 1)

Q (1)

. 1) Setting Router Modes on 2600 Series Routers

Q (2)

2) Changing Hostname of the Router

```
Router>enable
Router#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#hostname ibrar
ibrar(config)#exit
ibrar#
%SYS-5-CONFIG_I: Configured from console by console

ibrar#
```

Copy Paste

Q (3)

3) Configuring Date and Time on the Router (Clock Set Command)

```
ibrar#clock set ?
  hh:mm:ss  Current Time
ibrar#clock set 05:10:00 ?
  <1-31>  Day of the month
  MONTH   Month of the year
ibrar#clock set 05:10:00 5 ?
  MONTH  Month of the year
ibrar#clock set 05:10:00 5 october ?
  <1993-2035>  Year
ibrar#clock set 05:10:00 5 october 2021
ibrar#show clock
*5:10:6.595 UTC Tue Oct 5 2021
ibrar#
```

Q_(4)

4) Setting a banner on the Router

```
ibrar1#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
ibrar1(config)#banner motd # welcome to Netwwork Professionals #
ibrar1(config)#exit
ibrar1#
%SYS-5-CONFIG_I: Configured from console by console
exit
```

```
ibrar1 con0 is now available



Press RETURN to get started.









 welcome to Netwwork Professionals

ibrar1>
ibrar1>
```

Q (5)

5) DISPLAYING RUNNING-CONFIGURATION

```
ibrar#show running-config
Building configuration...

Current configuration : 483 bytes
!
version 12.2
no service timestamps log datetime msec
no service timestamps debug datetime msec
no service password-encryption
!
hostname ibrar
!
!
!
!
!
!
!
!
!
!
ip cef
no ipv6 cef
!
!
!
!
!
!
!
!
!
!
!
!
!
!
!
!
!
!
!
!
```

```
!
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
!
!
!
!
!
!
!
line con 0
!
line aux 0
!
line vty 0 4
 login
!
!
!
end
```

Q_(6(a))

6(a)) Enable Password Only

```
ibrar#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
ibrar(config)#line console 0
ibrar(config-line)#password abc123
ibrar(config-line)#login
ibrar(config-line)#end
ibrar#
%SYS-5-CONFIG_I: Configured from console by console

ibrar#exit









ibrar con0 is now available
```

```
Press RETURN to get started.









User Access Verification

Password:

ibrar>enable
ibrar#
```

Q_(6(b))

6(b)) Enable Secret Password with the Encryption Techniques/Levels

```
ibrar#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
ibrar(config)#enable ?
  password  Assign the privileged level password
  secret    Assign the privileged level secret
ibrar(config)#enable secret abc333
ibrar(config)#exit
ibrar#
%SYS-5-CONFIG_I: Configured from console by console

ibrar#
```

```
ibrar con0 is now available




Press RETURN to get started.
```

```
User Access Verification

Password:
Password:

ibrar>
```

Q_(7)

7) Line Console Password Implementation on CISCO 2600 Series Router

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

ibrar#
```

Q_(8)

8) What is Telnet? How to Telnet? + Line VTY/Telnet Password

Telnet:

Telnet is an application protocol used on the Internet or local area network to provide a bidirectional interactive text-oriented communication facility using a virtual terminal connection.

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.

typing telnet hostname would connect a user to a hostname named hostname. Telnet enables a user to manage an account or device remotely. For example, a user may telnet into a computer that hosts their website to manage his or her files remotely. ... As shown, a telnet session is a command line interface.

Line VTY/Telnet Password

```
ibrar>enable
Password:
ibrar#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
ibrar(config)#line vty 0 4
ibrar(config-line)#password abc444
ibrar(config-line)#login
ibrar(config-line)#exit
ibrar(config)#exit
ibrar#
%SYS-5-CONFIG_I: Configured from console by console

ibrar#
```

Q (9)

9) Network topology:

Network topology is the description of the arrangement of nodes (e.g. networking switches and routers) and connections in a network, often represented as a graph.

A logical network topology is a conceptual representation of how devices operate at particular layers of abstraction. A physical topology details how devices are physically connected.

Types of network topology

- **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.

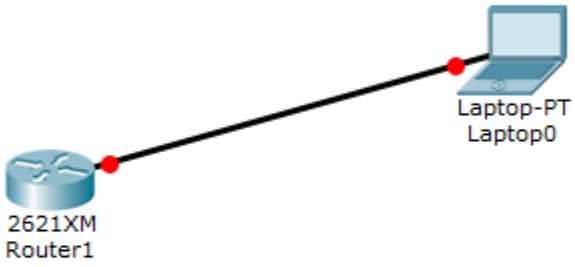
- **Star Topology** All devices are connected to a central switch, which makes it easy to add new nodes without rebooting all currently connected devices. This topology makes efficient use of cable and is easy to administer. On the other hand, the health of the switch is vital. This topology requires 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 # 1



Giving hostname

```
Router>
Router>enable
Router#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#hostname ibrar1
ibrar1(config)#exit
ibrar1#
%SYS-5-CONFIG_I: Configured from console by console

ibrar1#
```

Configuring Date and Time

```
ibrar1#
ibrar1#clock set ?
  hh:mm:ss  Current Time
ibrar1#clock set 10:07:00 ?
  <1-31>  Day of the month
  MONTH   Month of the year
ibrar1#clock set 10:07:00 5 ?
  MONTH  Month of the year
ibrar1#clock set 10:07:00 5 october ?
  <1993-2035>  Year
ibrar1#clock set 10:07:00 5 october 2021
ibrar1#show clock
*10:7:5.49 UTC Tue Oct 5 2021
ibrar1#
```

Setting a banner on the Router

```
ibrar1#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
ibrar1(config)#banner motd # welcome to Netwwork Professionals #
ibrar1(config)#exit
ibrar1#
%SYS-5-CONFIG_I: Configured from console by console
exit
```

```
ibrarl con0 is now available



Press RETURN to get started.



 welcome to Netwwork Professionals

ibrarl>
ibrarl>
```

DISPLAYING RUNNING-CONFIGURATION

```
ibrarl#
ibrarl#show running-config
Building configuration...

Current configuration : 534 bytes
!
version 12.2
no service timestamps log datetime msec
no service timestamps debug datetime msec
no service password-encryption
!
hostname ibrarl
!
!
!
!
!
!
!
!
ip cef
no ipv6 cef
```

```
!
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 Netwwork Professionals ^C
!
!
!
!
line con 0
!
line aux 0
!
line vty 0 4
 login
!
!
!
end
```

Enable Password Only

```
ibrar1#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
ibrar1(config)#line console 0
ibrar1(config-line)#password ibrar123
ibrar1(config-line)#login
ibrar1(config-line)#end
ibrar1#
%SYS-5-CONFIG_I: Configured from console by console

ibrar1#exit
```

```
ibrar1 con0 is now available




Press RETURN to get started.
```

```
 welcome to Netwwork Professionals

User Access Verification

Password:

ibrar1>
```

Enable Secret Password with the Encryption Techniques/Levels

```
ibrar1#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
ibrar1(config)#enable ?
  password  Assign the privileged level password
  secret    Assign the privileged level secret
ibrar1(config)#enable secret ibrar123
ibrar1(config)#exit
ibrar1#
%SYS-5-CONFIG_I: Configured from console by console

ibrar1#
ibrar1#exit
```

```
ibrar1 con0 is now available




Press RETURN to get started.
```

```
 welcome to Netwwork Professionals

User Access Verification

Password:

ibrar1>
```

Line Console Password Implementation

```
ibrar1#
ibrar1#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
ibrar1(config)#line console 0
ibrar1(config-line)#no login
ibrar1(config-line)#no password
ibrar1(config-line)#end
ibrar1#
%SYS-5-CONFIG_I: Configured from console by console

ibrar1#
```

Line VTY/Telnet Password

```
ibrar1>enable
Password:
ibrar1#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
ibrar1(config)#line vty 0 4
ibrar1(config-line)#password ibrar2123
ibrar1(config-line)#login
ibrar1(config-line)#exit
ibrar1(config)#exit
ibrar1#
%SYS-5-CONFIG_I: Configured from console by console

ibrar1#
```