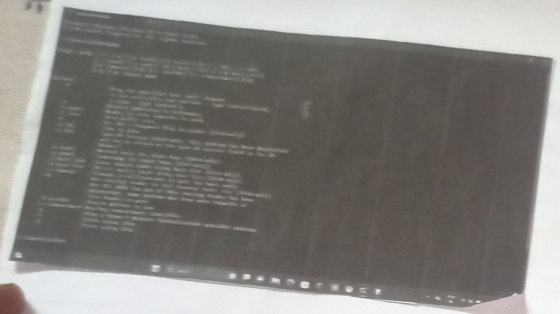

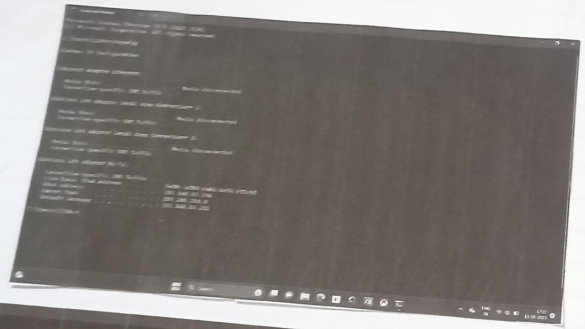

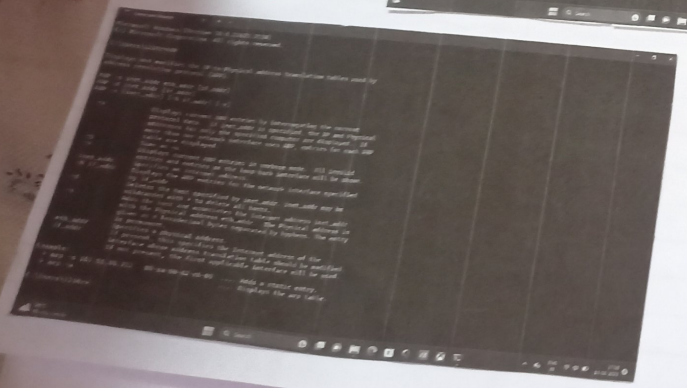

Practical 2

Aim:- Study of Basic Network Command and Network of Configuration

1. Ping

A ping (packet Internet of Inter-Network Groper is a Basic Internet program that allows a user to test A user to test and Verify if a particular Destination IP address exists and can accept requests in Computer Network administration.

2. IP Config

IPconfig (Standing for "Internet protocol Configuration") a console application program of some Computer operating Systems that Displays all Current TCP/IP Network Configuration protocol (DHCP) And Domain Name System (DNS) Settings

3. ARP

Address Resolution Protocol (ARP) is a protocol or procedure that Connects an ever-changing Internet protocol (IP) Address to a fixed physical machine address, also known as a media access Control (MAC) address in local-area Network. (LAN)

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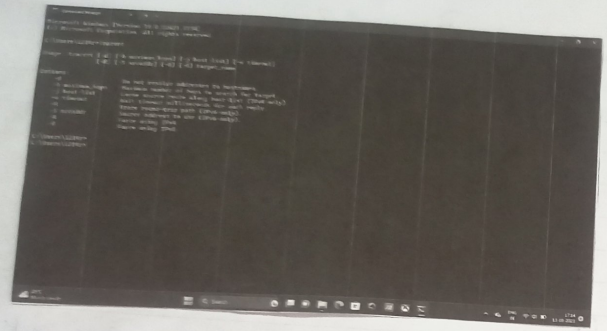
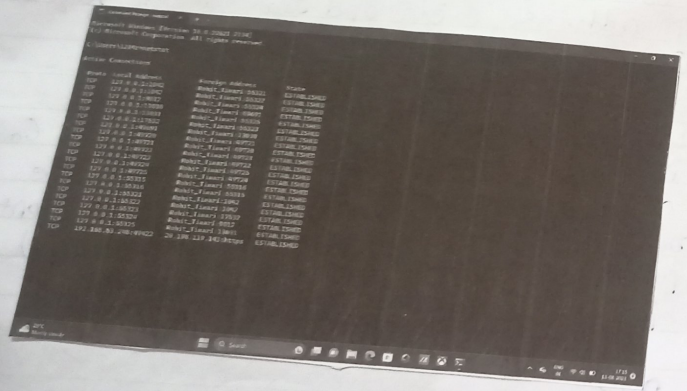




4. Tracert

This article Decribes TRACERT (Trace Route), a Command line uility that you Can use to trace the path that an Internet protocal (IP) packet takes to its Destination.

5. ~~Network Stat~~

The Network Statistics (NetStat) Command is a ~~Network~~ing tool used for trouble Shooting and Configuration, that Can also Serve as a ~~mon~~itoring tool for Connections over the Network. Both incoming and outgoing Connections routing tables, port listening and usage Statistics are Common uses for this Command.

Practical 3A

Aim:- IP Addressing And Subneting

Determine the following information about the IP address such as 198.168.109.50

Subnet mask is 255.255.255.0

(a) Network Address
(b) Network Broood Cost Address
(c) Total Number of host Bits

Sol^n

(a) Network Address in the first Address which is Calculated By doing Bitwise AND operation

First Address = (IP Add) AND (Mask Address)
= 192.108.109.50 AND 255.255.255.0
= 11000000.10101000.01101101.00110010.

AND

= 11111111.11111111.11111111.00000000

11000000.10101000.01101101.00000000
= 192.168.109.0

AND

A	B	AB
0	0	0
0	1	0
1	0	0
1	1	1

Net Address = 192.168.109.0

(b) Network Broadcast Address is the last Address which is calculated by doing Bitwise OR operation

Last Address = (IP Address) OR [NOT (Mask Address)]

Soln

11111111 . 11111111 . 11111111 . 00000000

↓ Not

00000000 . 00000000 . 00000000 . 11111111

1100 0000 . 10101000 . 01101101 . 00110010

OR

00000000 . 00000000 . 00000000 . 11111111

1100 0000 . 10101000 . 01101101 . 11111111

192 . 168 . 109 . 255

A	B	A OR B
0	0	0
0	1	1
1	0	1
1	1	1

Last Address = 192 . 168 . 109 . 255

(c) Total Number of Host Bits
= Total Bits - Total Number of 1s in mask Address
= 32 - 24
= 8 Bits

Practica 3B

17 First Net id & Network type for Address
223. 64. 0. 18

Soln

1) Example First type.
If's 233
Between 192 to 255

2) So its Class C Network

3) So first, Second and third Byte define the Net Id

4) To find Network Address replace host id with 0.

5) Host id: 233. 64. 0. 18
↓ Replace by 0
233. 64. 0. 0

6) So Network Address is 233. 64. 0. 0 &
Net Id is 233. 64. 0.

2) Find Net id & Network type for Address
185.77.0.3

Sol^n

(1) Examin first byte
Its 185 ie
Between 127 to 191.

(2) So its Class B Network.

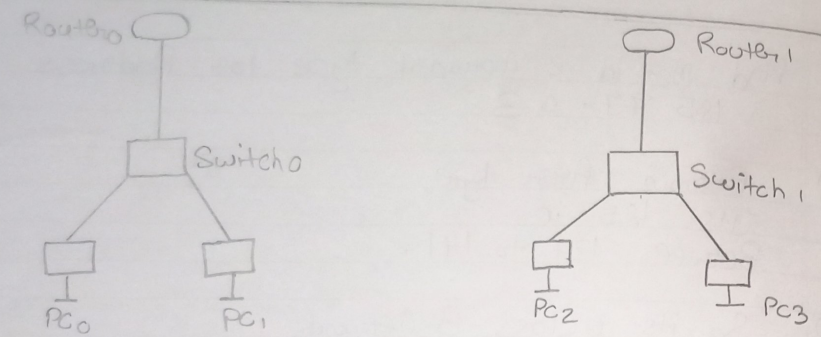
(3) So first two byte defines the Net Id

(4) To find Network Address replace host Id with 0

(5) Host id = 185.77.0.3
↓ Replace by 0
185.77.0.0

(6) So Network Address is 185.77.0.0
net Id is 185.77

Step 2



Step 3:

		IP Address	Default gateway	Subnet mask
Net1	PC0	10.0.0.2	10.0.0.1	255.0.0.0
	PC1	10.0.0.3		
R0	0/0	10.0.0.1		
	0/0	20.0.0.1		
	0/0			
Net2	PC2	30.0.0.2	30.0.0.1	
	PC3	30.0.0.3		
	0/0	30.0.0.1		
R1	0/1	20.0.0.2		

Practical 4

Aim :- Configure IP using Static Routing

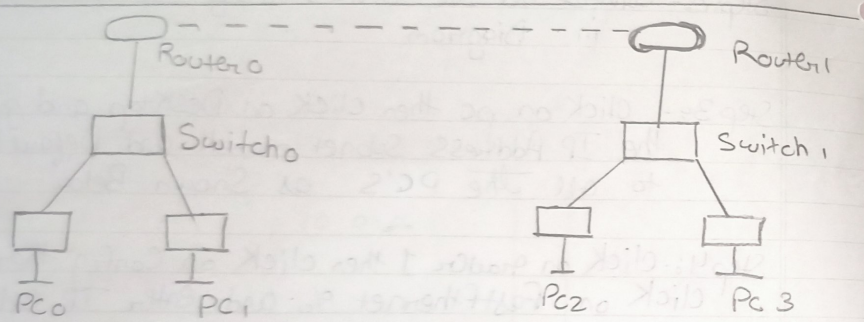
Step 1:- open the cisco packet tracer Desktop and select the devices given Below:
(i) Two Router's
(ii) Two Switches
(iii) four Pc's

Step 2:- Connect all the Devices through the wire as shown in Diagram

Step 3:- Click on pc then click on Desktop and given the IP Address Subnet mask and Default gateway to all the PC's as Shown Below.

Step 4:- Click on router 1 then click on Config then click on Fastfthernet 0/0 and enter IP address and Subnet mask and on the port Status.
IP address → 10.0.0.1
Subnet mask → 255.0.0.0
Then Click on Fast Ethernet 0/1 and Enter IP address → 20.0.0.1
Subnet mask → 255.0.0.0 & on the port Status.
and follow the same steps for router2:- Router2→
Fastfthernet 0/0 → IP address → 30.0.0.
Fastfthernet 0/1 → IP address → 20.0.0.1
Subnet mask → 255.0.0.0 and on the Port Status.

Net 1	
Network	30.0.0.0
Mask	255.0.0.0
Next Hop	20.0.0.0
RIP	0.0.0.0
Net 2	
Network	10.0.0.0
Mask	255.0.0.0
Next Hop	20.0.0.1
RIP	30.0.0.0



Fire	last status	Source	Desination	Type	Color
0	Successfull	Pc 0	Pc 1	ICMP	
0	Successfull	Pc 2	Pc 3	ICMP	
0	Successfull	Pc 0	Pc 2	ICMP	
0	Successfull	Pc 1	Pc 3	ICMP	

Step 5:- For Connecting two routers
* Click on Router → Config → Static then
* Enter the Network as 30.0.0.0
* Enter the mask as 255.0.0.0
* Enter the Next Hop as 20.0.0.2
* then click on add.

Step 6:- Click on Router 2 → Config → Static and then
* Enter the Network as 10.0.0.0
* Enter the mask as 255.0.0.0
* Enter the Next Hop as 20.0.0.1
* then click on add

Step 7:- For checking the Network is Connecting or not Send the msg from one n/w to the another n/w
click on msg packet → click on Pc of first n/w then click on Pc of second n/w

Step 8:- If the last status shown Sucessfull the two n/w are Connected Succesfully. And if the last Status ~~as~~ Shown as failed then the n/w are Not Connected.

Step 9:- we can also verify the n/w by pinging the IP address of any PC we will use the ping command to do so.

* First click on PC0 then Go to the Command prompt.
* Then type ping <IP address of targeted node>
* If we are getting the replies which means the Connection is working properly

	IP Address	Default gateway	Subnet mask
PC0	10.0.0.2	10.0.0.1	255.0.0.0
PC1	10.0.0.3	10.0.0.1	
PC2	30.0.0.2	30.0.0.1	
PC3	30.0.0.3	30.0.0.1	

Step 5 & 4 :-	I/P address	Subnet mask
Router 0		
Fastethment 0/0	10.0.0.1	255.0.0.0
Fastethment 0/1	20.0.0.1	
Router 1		
Fastethment 0/0	30.0.0.1	255.0.0.0
Fastethment 0/1	20.0.0.2	

Practical 5

Aim:- Configure IP using RIP Routing

Step 1:- open the CisCo packet Tracer Desktop And Select the Devices given Below
(i) Two Routers
(ii) Two Switches
(iii) Four PC:

Step 2:- Connect all the Devices through the wire as Show in Diagram.

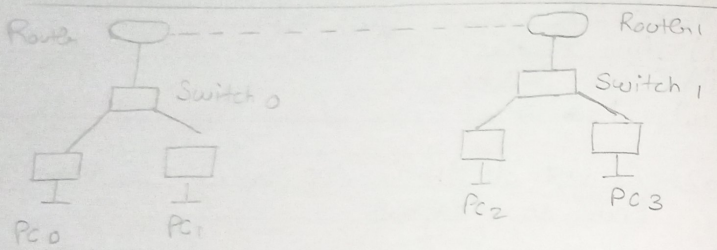
Step 3:- Click on Pc then click on Desktop And give the IP Address, Subnet mask and Default gateway to all the PC's as Shown in table

	IP Address	Subnet	Default Gateway
Network 1			
PC_0	10.0.0.2	255.0.0.0	10.0.0.1
PC_1	10.0.0.3	255.0.0.0	10.0.0.1
Network 2			
PC_2	30.0.0.2	255.0.0.0	30.0.0.1
PC_3	30.0.0.3	255.0.0.0	30.0.0.1

Step 6 & 7

FIP → 10.0.0.0 → Add } Router 0
20.0.0.0 → Add

FIP → 30.0.0.0 → Add } Router 1
20.0.0.0 → Add



Last Status	Source	Destination	Type
Successful	PC 0	PC 1	ICMP
Successful	PC 2	PC 3	ICMP
Successful	PC 0	PC 2	ICMP
Successful	PC 1	PC 3	ICMP

Step 4:- click on router 1 then click on Config then click on Fast Ethernet 0/0 enter 1/0 address and Subnet mask and on the port status.
IP address → 10.0.0.1
Subnet mask → 255.0.0.0 then click on Fast Ethernet 0/1 and enter IP Address, Subnet mask and on the port Status IP Address → 20.0.0.1
Subnet mask → 255.0.0.0 And follow the same steps for router 2

Step 5: for Connecting two Routers.
1) Click on router 1 → Config → RIP then
2) Enter the Network as 10.0.0.0
3) Then click on add.

Step 6:- click on router 2 → Config → RIP then
1) Enter the network as 30.0.0.0
2) Then click on add.

Step 7:- For checking the n/w is Connected or Not Send the msg from one n/w to another n/w
1) Click on msg packet → Click on Pc of Sirst n/w then Click on Pc of Second n/w.

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Step 8 :- If the last Status Shown Sucessful then our nlw's are Connected Sucessfully And if the last Status Shown as faild then the nlw are not Connected.

Step 9:- we Can also verify the nlw By pinging the IP address of Any PC. we will use the ping Comomand to do so.

① First, Click on PC0 then Go to Command prompt

② Then type ping <IP address of targeted node>

③ If we are getting the replies which means the Connection is working properly.

Practical No 6.

Aim :- Configuring Simple and multi-area OSPF

1. Configuring simple OSPF Topology

1. Router
- Assign an IP Address to interface

2. Assigning IP Address to Fnd ~~to~~ Interface

3. Simple OSPF Configuration

Step : Click on Router → Go to CL tab And type following Command

R1 :-

Router (config) # router ospf 1
Router (Config - router) # Network 150.50.0.0.0.
255.255 area 0
Router (Config) # router ospf 1
Router (Config - router) # network 150.50.0.0.0.0.255.255
area 0
Router (config - router) # network 10.0.0.0.255.255.255
area 0

R2

Router (Config) # router ospf 2
Router (Config - router) # network 10.0.0.0.0.255.255.
255 area 0.
Router (Config - router) # network 20.0.0.0.0.255.
255.255 area 0

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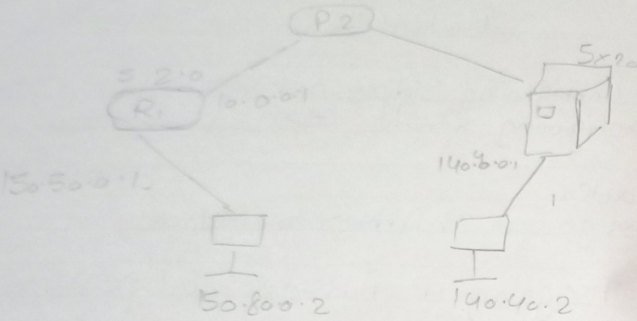

Device	Interface	IP Address	Subnet mask
R1	Fa 0/0	150.50.0.1	255.255.0.0
R1	Se 2/0	10.0.0.1	255.0.0.0
R2	Se 2/0	10.0.0.2	255.0.0.0
R2	Se 3/0	20.0.0.2	255.0.0.0
R3	Fa 0/0	140.40.0.1	255.255.0.0
R3	Se 2/0	20.0.0.1	255.0.0.0

Device	IP Address	Subnet mask	Default gateway
PC0	150.50.0.2	255.255.0.0	150.50.0.1
PC1	140.40.0.2	255.255.0.0	140.40.0.1

R3

Router (config)# router ospf 3

Router (config-router)# network 140.40.0.0 0.0.0.255 area 0

Router (config-router)# Network 20.0.0.0 0.255.255.255 area 0

Check IP Connectivity :

Steps : Click on end Device - Go to Desktop tap - Select Command prompt

PC0

PC > ping 140.40.0.2

Result ping Command is Sucessful Destination host is reachable.

PC1

PC > ping 150.50.0.2.

Result ping Command is successful, Destination host is reachable.

1. Configuring multi-area OSPF.

Configuring Router :.

1. Assign an IP address to interface

2. Assigning IP address to End Device.

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Practical 7.

Aim : Configura DHCP Protocol.

Step 1 : open the Cisco packet tracer Desktop and Select the Device given Below.

ⓐ one Server
ⓑ one Server
ⓒ five PC's

Step 2 :- Connect all the Device through the wire as Shown in Diagram.

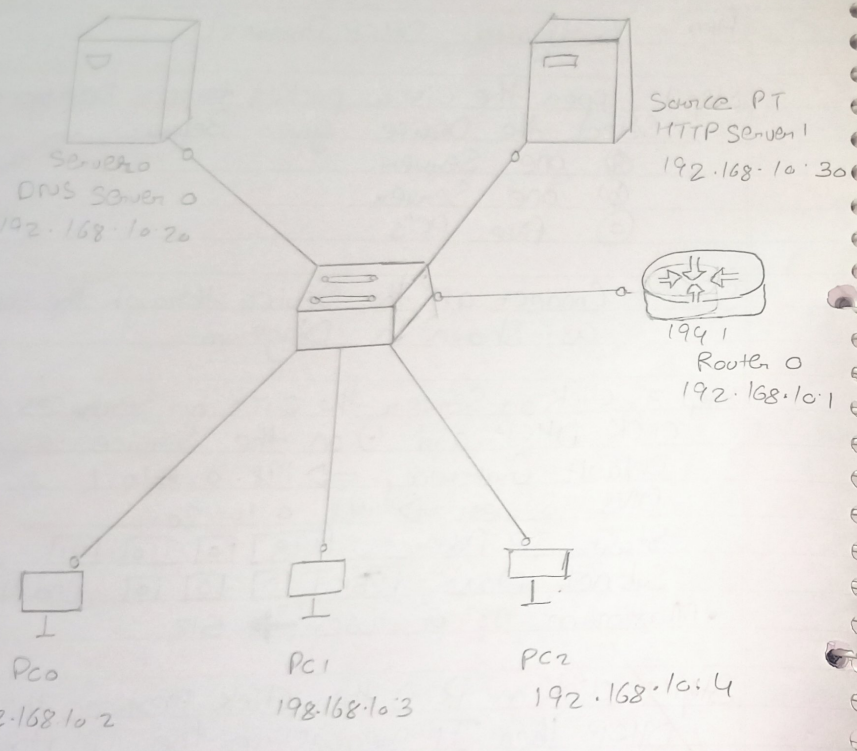
Step 3 : click on Server the click on Services then click DHCP and ⊙ on the Service.

Default Gateway ⇒ 198.0.[illegible]0.1
DNS Server ⇒ 198.0.10.20.
Start IP Address: [198] [0] [10] [21]
Subnet Mask: [255] [0] [0] [0] And [Save]
• Maximum no. of user ⇒ 512

Step 4 :- click on PC D then click Desktop then ⊙ on the DHCP then It requesting the IP Address. when I click on the DHCP Button It autane-tically Generate the IP Address and Subnes. mask.

Same as All the PC's after this

• DHCP request Successful then Done



Practical 8

Aim : Configure DNS

Step 1:- open the Cisco Packet tracer Desktop And Select the Devices given Below:
① two Server
② one Switch
③ one Router
④ three PC's

Step 2:- Connect all the Devices through the wire as Shown in Diagram.

Step 3:- click on Router → Config → Gigabit Ethernet 0/0 then ⊙ on the Button in right Side
IP Address 192.168.10.1
Subnet Mask 255.255.255.0

Step 4:- click PC0 → Desktop → IP Configuration.
IP Address 192.168.10.2
Subnet Mask 255.255.255.0
Default Gateway 192.168.10.1
Same as All two PC's.
PC.1 ⇒ IP Add 192.168.10.3
PC.2 ⇒ IP Add 192.168.10.4
And Subnet mask & Default Gateway Same.
~~And Subnet mask & Default Gateway~~ as PC.0.

Step 5: click on DNS Server 0 → Desktop → IP Configuration

IP Address 192.168.10.20
Subnet mask 255.255.255.0
Default Gateway 192.168.10.1

Same as HTTP Server 1

IP Address 192.168.10.30
Default Gateway 192.168.10.1
Subnet mask 255.255.255.0

Step 6:- click DNS Server → Services → DNS
⊙ on the button then
Name BSCIT.edu.in
Address 192.168.10.30 then Click [Add]

Step 7:- click HTTP Server → Services → HTTP
⊙ on the button
then the click last file Name Edit Such as
5 | index.html | ~~Create~~ (edit) | (delete)

Click on edit

Edit in Code

```
<html>
<Center><Font size='+2' Color='blue'>Rahul Chaurasiya..
</Font></Center>
<hr>welcome to Cisco Packet Tracer. opening
doors to new opportunities. Mind wide apps
<p> Quick links:
<br><a href="Helloworld.html">A Small page</a>
<br><a href='Copy rights.html'> Copy rights </a>
```

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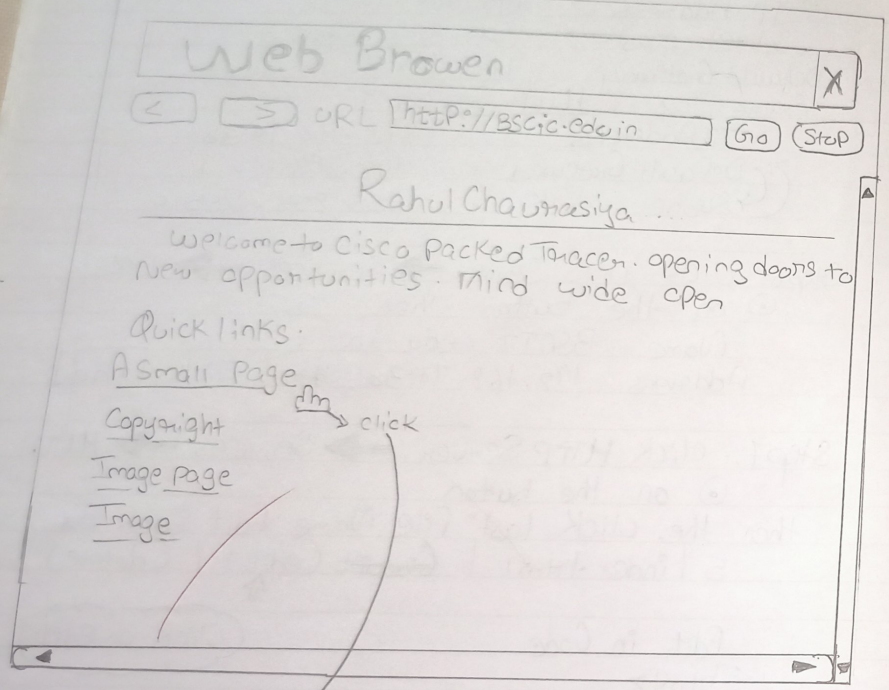


```
<br> <a href='image.html'> Image page <\a>
<br> <a href='CS Copy\logo 177x111.jpg.'>
Image <\a>
<\ html>
```

then

yes.

Step 8: Click on PC's or any PC's Click on web Brawer then type ~~to~~ in URL

URL [BSCIT.edu.in] And Click [Go] Button

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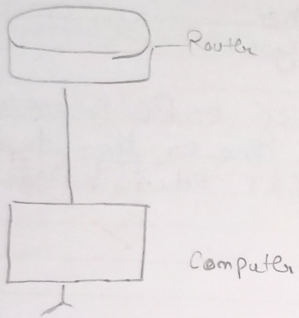

Practical 9

Aim:- Configure ~~telnet~~

Step1:- Open ~~the~~ Cisco packet tracer Desktop and Select the Devices given Below
1) one Router
2) One Pc

Step2:-
Connect the Devices through the ~~user~~ wire as Shown in the Diagram

Step3:
Click on pc then click Desktop then go to Ip Configuration given Ip Address → 10.0.0.2 Subnet mask → 255.0.0.0 & Default gateway → 10.0.0.1 then Close it.

Step4:
click on Router go to Config → Fastethernet 0/0 ① on it & give Ip Address → 10.0.0.1 & Subnet mask 255.0.0.0 the ~~way~~ click on CLI & write Commands given Below.
1. exit
2. line vty 0 4
3. Password 111
4. login
After this Close. Router.

Step 5:
Click on pc go to Command prompt given Command #line 10.0.0.1 // And then Enter the password 111 // password will Not visible to Eyes After (Router>) whes you done it Correctly

Practical 1a

Aim:

Step1: Open the Cisco packet tracer and select the Devices given Below:
(i) one Server
(ii) one Switch
(iii) Two PC's

Step2:- Connect all the Devices through the wire as Shown in Diagram.

Step3: Click on Server then click Desktop And give the IP Configuration given IP Address → 10.0.0.1 and Subnet mask → 255.0.0.0

Step4:- Return click on Server the click Services go to EMAIL and ◉ ON the both Button And given Domain Name:- gmail.Com and click on [Set] Button. give user name and password 2 times example :- User [laxmi] Password [111] And click [+] Button.
User [Meno] password [123] And click [+].

Step5: Click on PC'o and thens click Destop → IP Configuration Enter IP Address And Subnet IP address → 10.0.0.2 &.
Subnet Mask → 255.0.0.0
Same Pc1
IP address → 10.0.0.3
Subnet mask → 255.0.0.0

Step 6: For Sending the Email

- click PC2 → Desktop → Email
- Enter your name : [Rahul]
- Email Address : [RC420594@gmail.com]
- Incoming mail Server :- [10.0.0.1]
- outgoing mail Server :- [10.0.0.1]
- User name [Rahul]
- Password [...] then [Save]

* Same Step 6 for PC1
  - your name [Rohit]
  - Email Address [Rohit@gmail.com]
  - Incoming mail Server [10.0.0.1]
  - outgoing mail Server [10.0.0.1]
  - User Name [Rohit]
  - password [...] then [Save]

Step 7: click PC0 → Email → Compose mail

To : Rohit

Subject : Demo msg

Hii Rohit Thank you so much for the update..... and Send the mail

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Step 8:-

Message

Reply

From : RC420594@gmail.com

To : Rohit@gmail.com Sent: Thu Sep 14 2023 19:17:16

Sub: Demo msg

Hi: menu

Thanx you Somuch for the update.....

Step 9:-

Reply Mail

Send To: RC420594@gmail.com

Subject:- RE: Demo msg

Replyed msg

Subject: Demo msg

From: Rahul@gmail.com

Sent: Thu Sep 14 2023 19:37:16

Thank you So much the update.....

Step 8: After the Sending the mail click PC 1 and click EMAIL & click Receive

	From	Subject	Received
1	~~Rahul~~RC420594@gmail.com	Demo msg	Thu Sep 14 2023
2	RC420594@gmail.com	Hello!!	Thu Sep 14 2023

Click any Subject of msg (double click on Demo msg) and we gate the Email. as Shown Diagram. (picture)

Step 9:- If you want Reply the msg you Can reply

① Click PC, and Click EMAIL and click on Receive

② Go to the mail and Click on [Reply]

From: RC420594 @ gmail.Com

To: Rohit @ gmail.Com.

Subject:- Reply the msg.

// Replyed msg.

Step 10:- Check the Reply, Go to PC0 and click on EMAIL → Reply, as Shown picture.

3/10/23

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