

Ex: 9

Date: 20/9/24

## classfull Subnetting

### Aim:

To implementation of subnetting in cisco Packet tracer simulator

### Procedure:

1, Create the network using switch, router and PCs

2, The IP address will be as follows

→ Router R1

★ Gigabit Ethernet 0/0 : 192.168.1.1

★ Gigabit Ethernet 0/1 : 192.168.2.1

→ Switch S1

★ no IP

→ LAN-1

• PC 0

IP Address : 192.168.1.11

Gateway : 192.168.1.1

• PC 1

~~IP : 192.168.1.12~~

~~Gateway : 192.168.1.1~~

• PC 2

IP : 192.168.1.13

Gateway : 192.168.1.1

• PC 3

IP: 192.168.1.14

Gateway: 192.168.1.1

• PC 4

IP: 192.168.1.15

Gateway: 192.168.1.1

→ Switch S2

NO IP

→ LAN-2

• PC 5

IP address: 192.168.2.11

Gateway: 192.168.2.1

• PC 6

IP address: 192.168.2.12

Gateway: 192.168.2.1

• PC 7

IP address: 192.168.2.13

Gateway: 192.168.2.1

• PC 8

IP address: 192.168.2.14

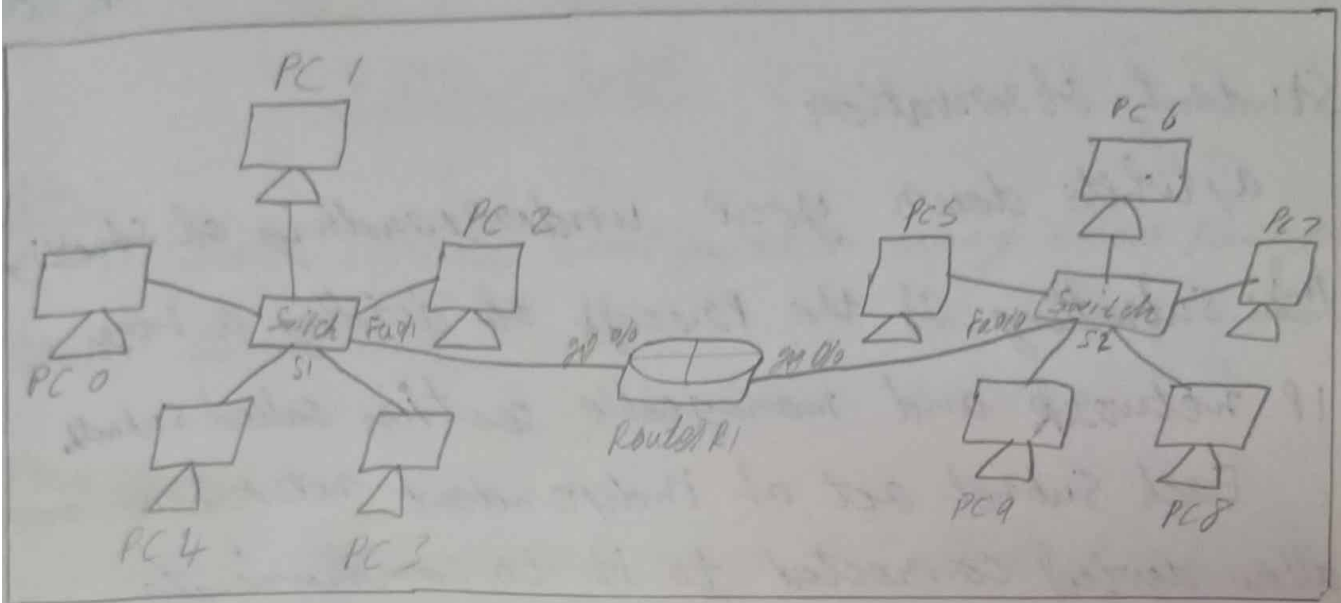
Gateway: 192.168.2.1

• PC 9

IP address: 192.168.2.15

Gateway: 192.168.2.1

# Diagrammatic representation



## Output:

Now let's assume the sender is PC 1 and receiver is PC 7

while simulating & observing, we get the simulation panel

Event List		
Vis	time	Last device
	0.000	--
	0.003	PC1
	0.005	Switch 1
	0.008	Router 1
	0.010	Switch 2
	0.013	PC 7
	0.015	Switch 2
	0.018	Router 1
	0.020	Switch 1
	0.023	--

Reset simulation ☐ unicast delay

Play controls



Fire	Last Status	Source	Destination	Type	Color	Time (Sec)	Pending
①	successful	PC1	PC9	ICMP	□	0.000	N

## Student Observation

a, write down your understanding of Subnetting

Ans: Subnetting is the process of dividing a large IP network and manageable section called subnets.

Each Subnet act as independent network & allow devices connected to it to communicate within the subnet & control traffic b/w subnets

b, Advantages of implementing Subnetting within a network

Ans:  $\hookrightarrow$  efficient IP management - based on requirement

$\hookrightarrow$  Reduce Network congestion - limit broadcast traffic to individual subnets

c, Subnetting in your college?

*Yes*

## Result:

the implementation of Subnetting in cisco has been done successfully