VIT®

Vellore Institute of Technology

(Deemed to be University under section 3 of UGC Act, 1956)

Name: Shivam Dave

Regno: 21BCB0107

Slot: L21+L22

Date: 1.06.2023

Question:

XYZ Company is a fast-growing company in Chennai with more than 2 million customers globally. The company deals with selling and buying of food items, which are basically operated from the headquarters with six departments namely Admin, IT, Finance, HR, Customer Service, and Reception. Thus, the company requires young CSE graduates to design the networkfor the branch. The network is intended to operate separately from the HQ network.Being a small network, the company has the following requirements during the implementation:

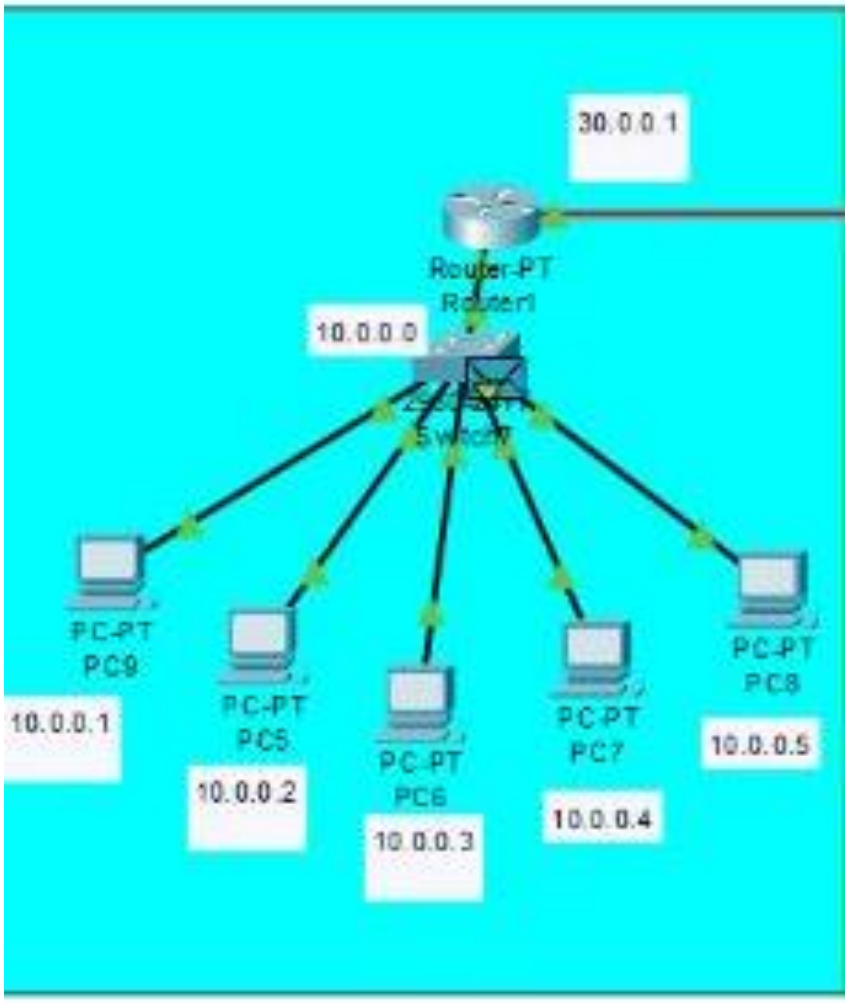
a. One router and one switch to be used per department.
b. 2 departments per floor with minimum of 5 and maximum 10 end devices .As a designer you may decide number of end devices per department
according to its service.
c. Each department is required to be in different LANs.
d. Each department is required to use Wireless router for the users.
e. Devices in the network must be configured manually.
f. Devices in all the departments are required to communicate with each other.
g. Perform static routing across all the department LANs.
h. Perform simulation and check the packet travels across all the LANs.

Solution:

Configuration for systems(pc) for each LAN network(HR, finance,etc)

- Select end devices and drag them(atleast 5 each for each LAN)
- Select switches(2960/PT) and drag them
- Using wire connect them with eachother as shown.

Screenshot:



Follow the same steps for other Networks.

Step 2:

IP configurations for PCs/End devices

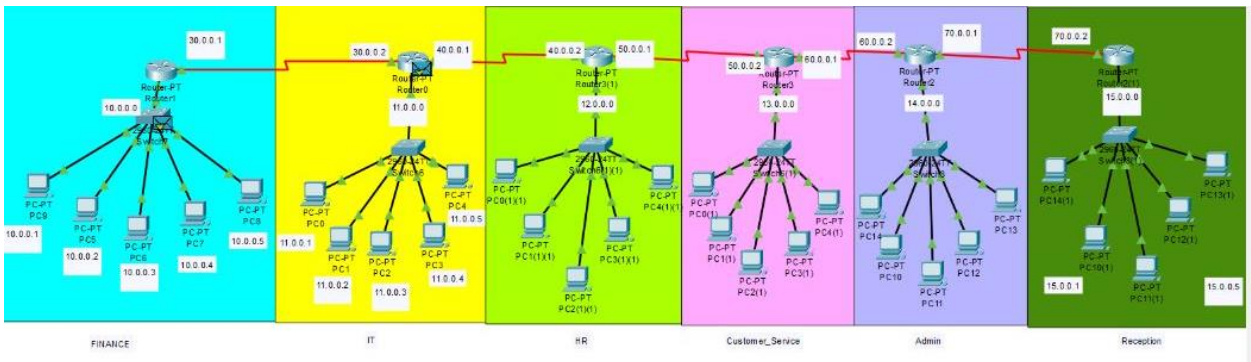
- The end devices have Ip4 configuration and the LANs IP address can be the default gateway (x.x.x.0)

Step 3:

Ip configurations for routers:

- Drag routers and place them accordingly(One for each Network).
- Each router will have atleast 2 connections. One for the switch connecting the end devices and one connecting one router with another.
- The connection of router from router can be made using SERIAL DCE and the IP connection/Default Gateway.
- The connection of router with the switch will have the IP address of the LAN.

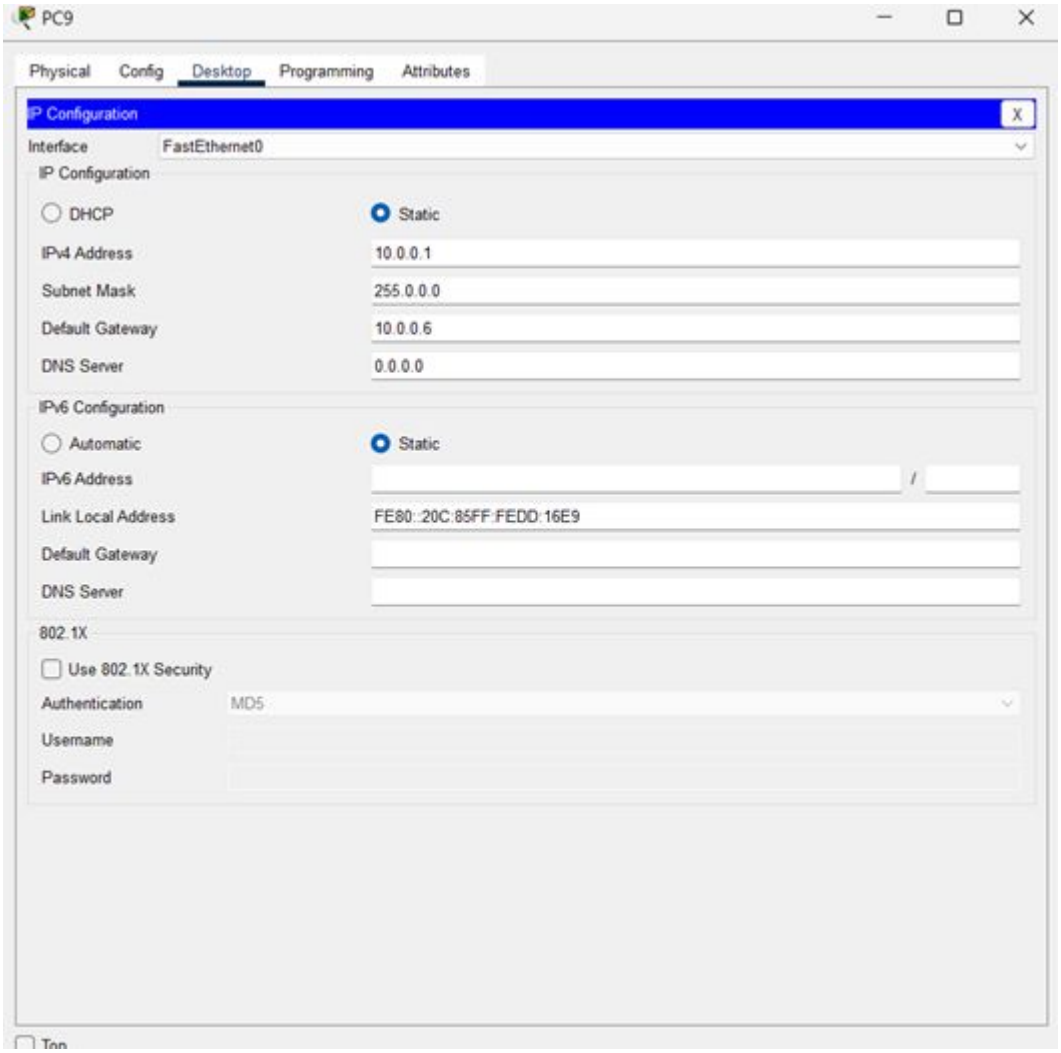
Screenshot:

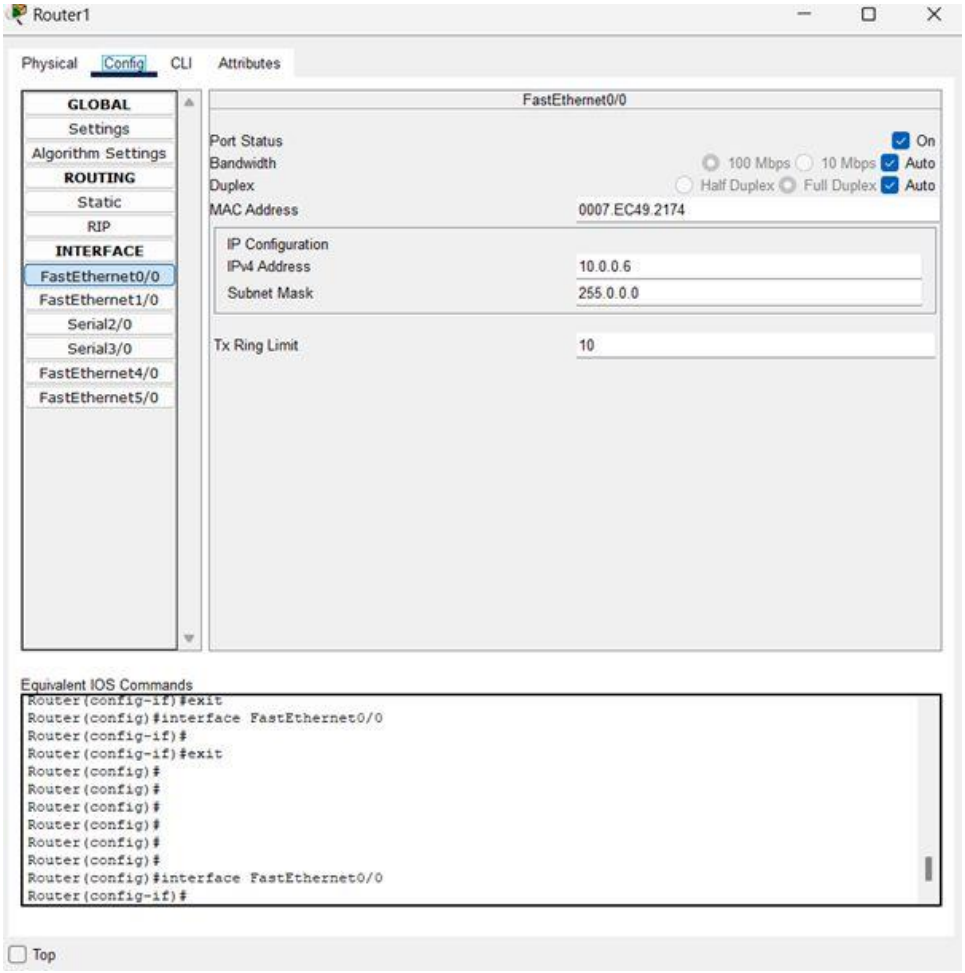


Step 4: Router to router connection

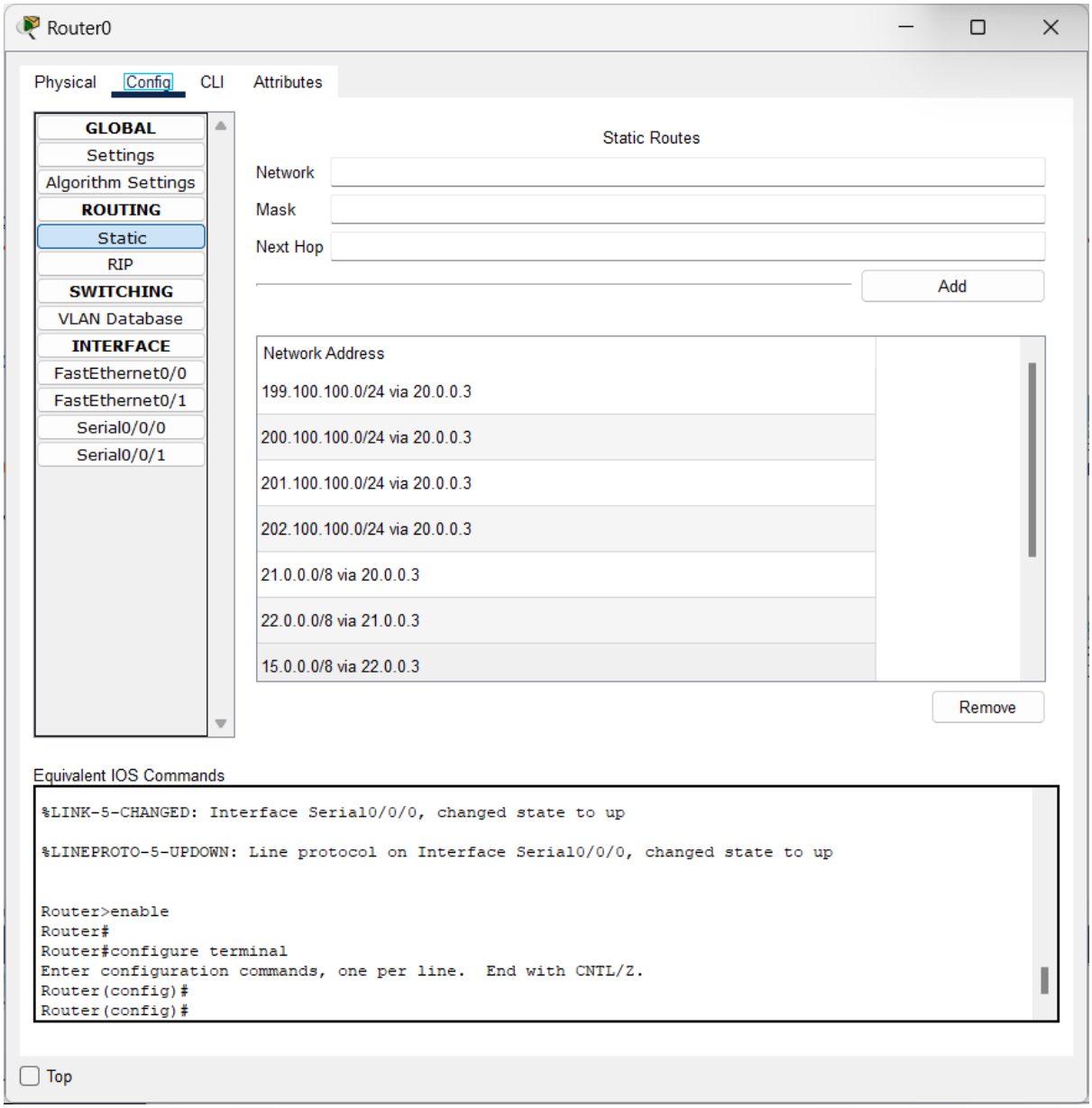
First we will assign each router the Default Gateway for each LAN network from interface of FastEthernet()

Screenshot:





Next, router to router configuration involves the routing table which contains the IP address of all the destination routers and Next Hop IP.



Step 5: We will Simulate and get the output:

21BCB0107


File Edit Options View Tools Extensions Window Help
Logical
Physical
Simulation Panel
Event List
Reset Simulation
Constant Delay
Play Controls
Edit Filters
Show All/None
Event List
Realtime
Simulation
Fire
Last Status
Source
Destination
Type
Color
Time(sec)
Periodic
Num
Edit
Delete
Successful
PC8
PC14(1)
ICMP
0.000
N
0
(edit)
(delete)
FINANCE
IT
HR
Customer_Service
Admin
Reception

Edit Filters
Show All/None
Event List
Realtime
Simulation
Fire
Last Status
Source
Destination
Type
Color
Time(sec)
Periodic
Num
Edit
Delete
Successful
PC8
PC14(1)
ICMP
0.000
N
0
(edit)
(delete)