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CN Experiment 10: Mini Project

1. Aim: To design and simulate a college network scenario using Cisco Packet Tracer.

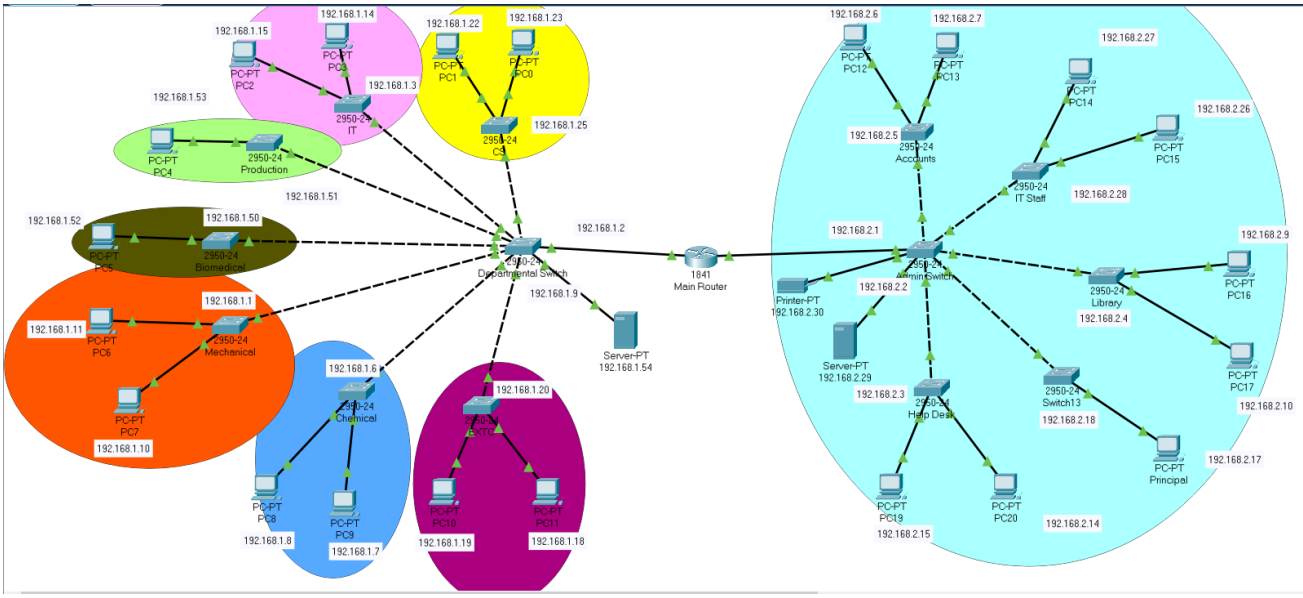
2. We have made a network for a College. Our network consists of 2 main networks: the Admin network and the Departmental network. These 2 networks consist of multiple sub-networks. The Admin network has the accounts department, IT staff, Library, Principal and the help desk. The Departmental network has the CS, IT, Production, Biomedical, Mechanical, Chemical and EXTC departments.

   The network consists of 1 main router, 2 servers, 14 switches, 21 PC's and 1 printer.

   The main router is connected to 2 switches: namely the Admin switch and the Departmental switch. The Admin switch is connected to 5 other switches whereas the Departmental switch is connected to 7 other switches. Both these switches have 1 server each attached to it. The server gives the functionality to send emails and also access certain allowed websites.

3. Concepts used:
   1) Static IP allocation - address does not change with time
   2) DNS - Domain Name System used to map IP addresses to the website names
   3) RIP routing protocol - employs the hop count as a routing metric
   4) Subnetting
   5) SMTP - Simple Mail Transfer Protocol

4. Network:



5. Functionalities:

- Pinging from one PC to another:

PC4

Physical Config Desktop Programming Attributes

Command Prompt

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Packet Tracer PC Command Line 1.0
C:\>ping 192.168.2.17

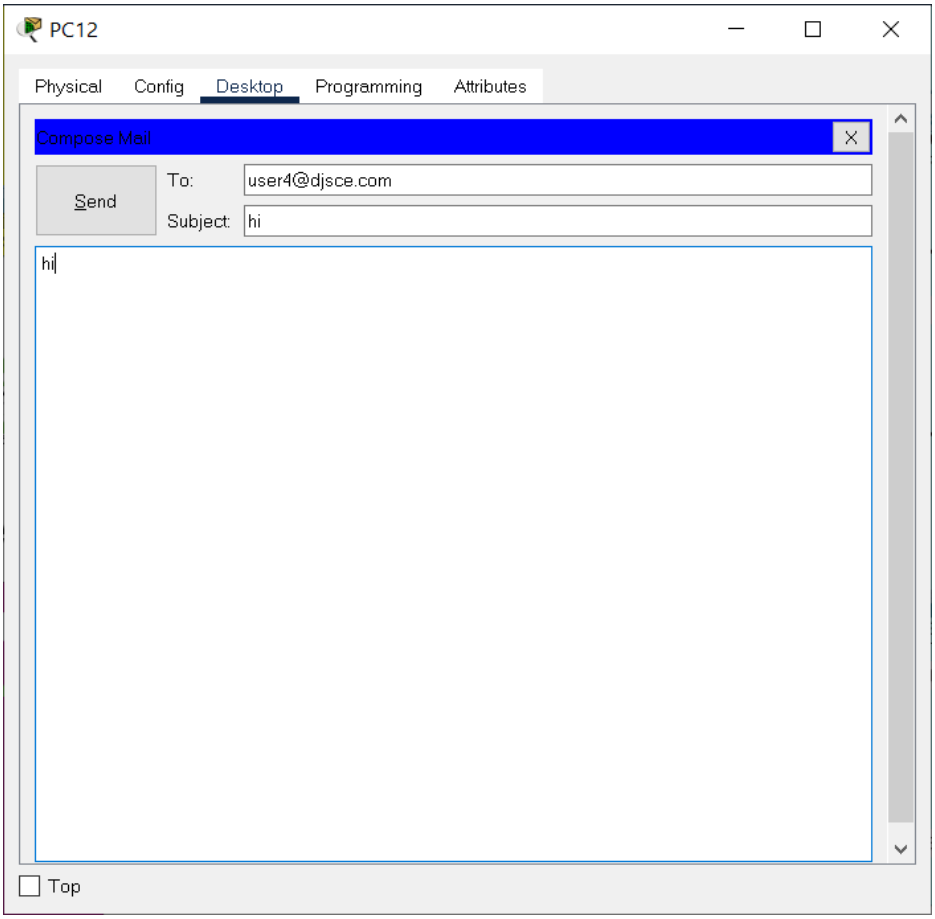
Pinging 192.168.2.17 with 32 bytes of data:

Reply from 192.168.2.17: bytes=32 time<1ms TTL=127
Reply from 192.168.2.17: bytes=32 time<1ms TTL=127
Reply from 192.168.2.17: bytes=32 time<1ms TTL=127
Reply from 192.168.2.17: bytes=32 time=97ms TTL=127

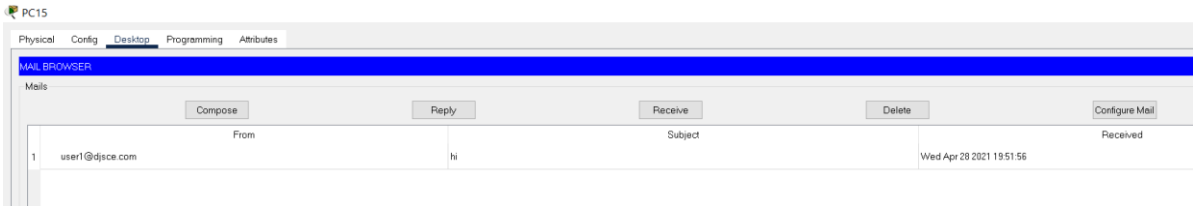
Ping statistics for 192.168.2.17:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 97ms, Average = 24ms

C:\>
```

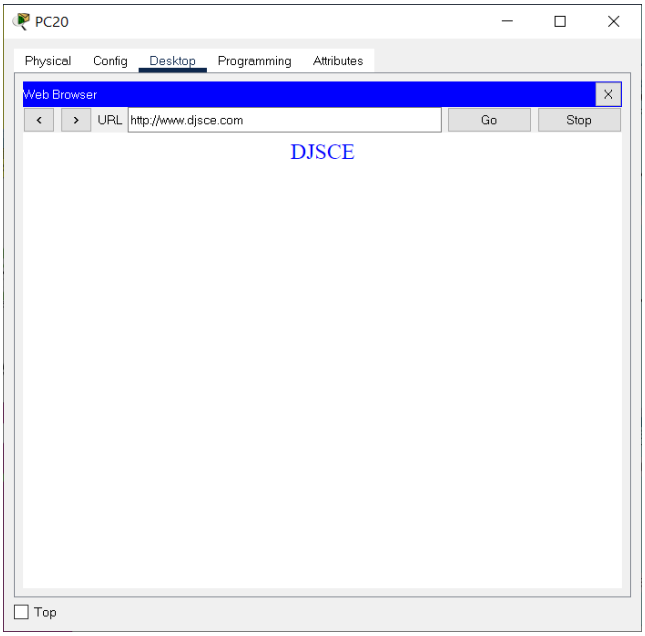
- Sending Email:
  Sending from user1 to user4:

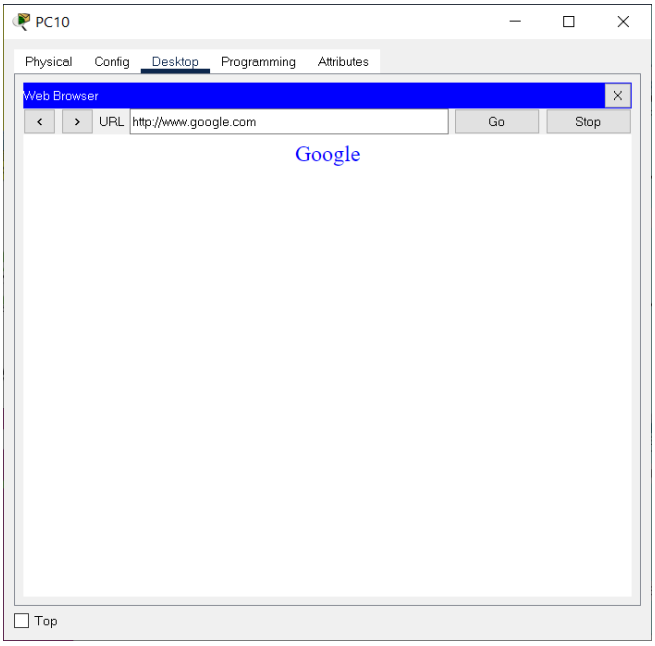


User4 receiving the email from user1:



- DNS (accessing websites):


PC20
Physical
Config
Desktop
Programming
Attributes
Web Browser
URL
http://www.djsce.com
Go
Stop
DJSCE
Top


PC10
Physical
Config
Desktop
Programming
Attributes
Web Browser
URL
http://www.google.com
Go
Stop
Google
Top