Name-Asavari Bhelawe
Roll No-5021106

Name: Design a network with VLAN using the concepts of Addressing (IP Address Assignment) and Routing. Also design & implement Inter-VLAN routing in cisco packet tracer.

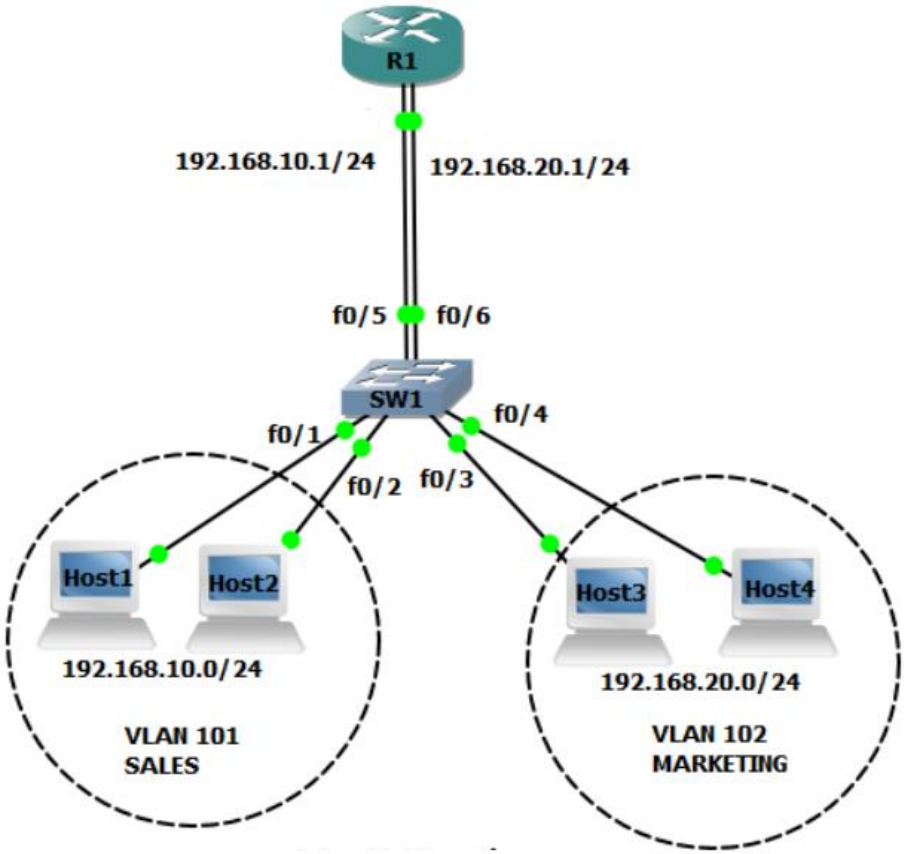
THEORY:

What is VLAN:

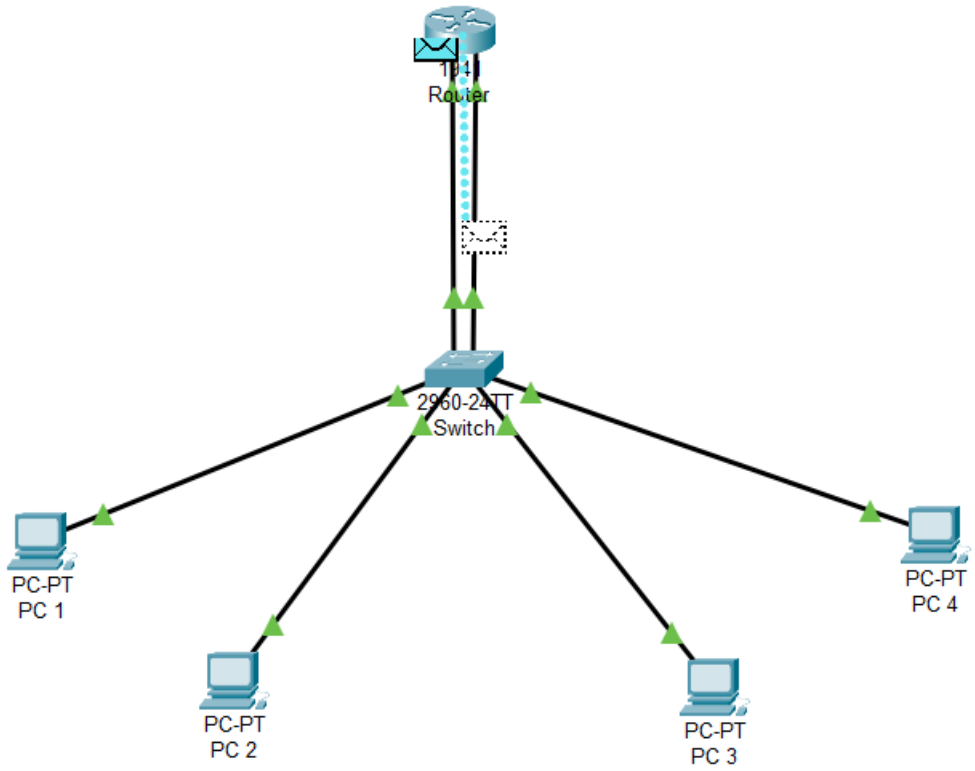
- VLAN is a logical grouping of networking devices.
- When we create VLAN, we break large broadcast domain in smaller broadcast domains.
- Consider VLAN as a subnet. Same as two different subnets cannot communicate with each other without router, different VLANs also requires router to communicate.

Advantage of VLAN:

- Solve broadcast problem
- Reduce the size of broadcast domains
- Allow us to add additional layer of security
- Make device management easier
- Allow us to implement the logical grouping of devices by function instead of location



OUTPUT:




```
C:\>ping 192.168.20.3

Pinging 192.168.20.3 with 32 bytes of data:

Reply from 192.168.20.3: bytes=32 time=8ms TTL=127
Reply from 192.168.20.3: bytes=32 time=8ms TTL=127
Reply from 192.168.20.3: bytes=32 time=8ms TTL=127
Reply from 192.168.20.3: bytes=32 time=8ms TTL=127

Ping statistics for 192.168.20.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 8ms, Maximum = 8ms, Average = 8ms
```

CONCLUSION:

Thus we designed a network with VLAN and successfully implemented Inter-VLAN routing in Cisco Packet Tracer.