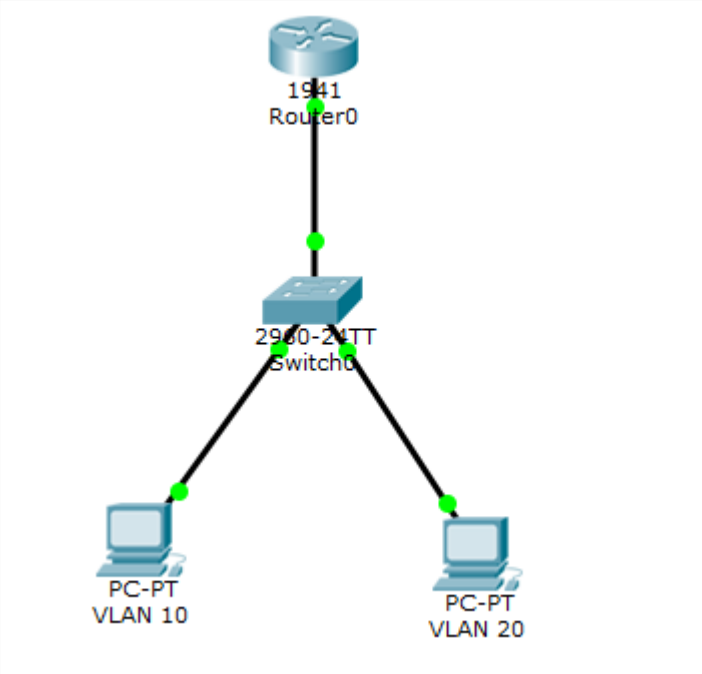
Experiment No. 10

Object:

a. To create sub interfaces in Router using CLI mode.
b. Inter VLAN Routing (Encapsulation Technique)

Date: April 7, 2018

Configuration Figure:



Coding: ***On ROUTER***

```
        --- System Configuration Dialog ---

Continue with configuration dialog? [yes/no]: n
Press RETURN to get started!

Router>en
Router#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#
Router(config)#interface gig 0/1
Router(config-if)#ip address 192.168.1.1 255.255.255.0
Router(config-if)#no shutdown

Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/1, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/1, changed state to up

Router(config-if)#ex
```

```
Router(config)#
Router(config)#interface gig 0/1.1
Router(config-subif)#
%LINK-5-CHANGED: Interface GigabitEthernet0/1.1, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/1.1, changed state to up

Router(config-subif)#en
Router(config-subif)#encapsulation dot1Q 10
Router(config-subif)#ip address 192.168.10.1 255.255.255.0
Router(config-subif)#no shutdown
Router(config-subif)#ex
Router(config)#interface gig 0/1.2
Router(config-subif)#
%LINK-5-CHANGED: Interface GigabitEthernet0/1.2, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/1.2, changed state to up
Router(config-subif)#encapsulation dot1Q 20
Router(config-subif)#ip address 192.168.20.1 255.255.255.0
Router(config-subif)#no shutdown
Router(config-subif)#ex
Router(config)#ex
Router#
%SYS-5-CONFIG_I: Configured from console by console

Router#ex


Router con0 is now available

Press RETURN to get started.

Router>
```

Coding: ***On SWITCH***

```
Switch>en
Switch#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#vlan 10
Switch(config-vlan)#ex
Switch(config)#vlan 20
Switch(config-vlan)#ex
Switch(config)#in
Switch(config)#interface gig 0/1
Switch(config-if)#switchport mode trunk

Switch(config-if)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/1, changed state to down

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/1, changed state to up

Switch(config-if)#ex
Switch(config)#interface fa 0/1
Switch(config-if)#switchport access vlan 10
```

```
Switch(config-if)#no shutdown
Switch(config-if)#ex
Switch(config)#interface fa 0/2
Switch(config-if)#switchport access vlan 20
Switch(config-if)#no shutdown
Switch(config-if)#ex
Switch(config)#
Switch(config)#ex
Switch#
%SYS-5-CONFIG_I: Configured from console by console

Switch#ex

Switch con0 is now available
Press RETURN to get started
Switch>
```

Ping Test:

```
PC>ping 192.168.10.1

Pinging 192.168.10.1 with 32 bytes of data:

Reply from 192.168.10.1: bytes=32 time=0ms TTL=255
Reply from 192.168.10.1: bytes=32 time=0ms TTL=255
Reply from 192.168.10.1: bytes=32 time=0ms TTL=255
Reply from 192.168.10.1: bytes=32 time=0ms TTL=255

Ping statistics for 192.168.10.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

PC>ping 192.168.10.10

Pinging 192.168.10.10 with 32 bytes of data:

Reply from 192.168.10.10: bytes=32 time=0ms TTL=128
Reply from 192.168.10.10: bytes=32 time=7ms TTL=128
Reply from 192.168.10.10: bytes=32 time=55ms TTL=128
Reply from 192.168.10.10: bytes=32 time=1ms TTL=128

Ping statistics for 192.168.10.10:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 55ms, Average = 15ms
```

```
Packet Tracer PC Command Line 1.0
PC>ping 192.168.20.10

Pinging 192.168.20.10 with 32 bytes of data:

Reply from 192.168.20.10: bytes=32 time=1ms TTL=127
Reply from 192.168.20.10: bytes=32 time=0ms TTL=127
Reply from 192.168.20.10: bytes=32 time=1ms TTL=127
Reply from 192.168.20.10: bytes=32 time=1ms TTL=127

Ping statistics for 192.168.20.10:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 1ms, Average = 0ms

PC>ping 192.168.20.1

Pinging 192.168.20.1 with 32 bytes of data:

Reply from 192.168.20.1: bytes=32 time=0ms TTL=255
Reply from 192.168.20.1: bytes=32 time=0ms TTL=255
Reply from 192.168.20.1: bytes=32 time=0ms TTL=255
Reply from 192.168.20.1: bytes=32 time=0ms TTL=255

Ping statistics for 192.168.20.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms
```