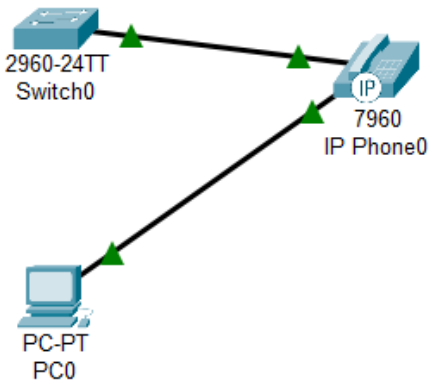
Q8) You have a Cisco switch and a VoIP phone that needs to be placed in a voice VLAN (VLAN 20). The data for the PC should remain in a separate VLAN (VLAN 10). Configure the switch port to support both voice and data traffic.

When connecting a **PC** and a **VoIP phone** to the same switch port, we need to configure the port to support both:

- **VLAN 10** for PC (Data)
- **VLAN 20** for VoIP Phone (Voice)

A **Cisco IP Phone** has an internal switch with two ports:

1. **One port connects to the switch** (switchport must be configured for voice and data).
2. **One port connects to the PC**, forwarding data in VLAN 10.



Configure VLANs on the Switch and Configure the Switch Port for Voice and Data

```
Switch>
Switch>enable
Switch#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#
Switch(config)#vlan 10
Switch(config-vlan)#name Data_VLAN
Switch(config-vlan)#exit
Switch(config)#vlan 20
Switch(config-vlan)#name Voice_VLAN
Switch(config-vlan)#exit
Switch(config)#interface FastEthernet0/1
Switch(config-if)#switchport mode access
Switch(config-if)#switchport access vlan 10
Switch(config-if)#switchport voice vlan 20
Switch(config-if)#spanning-tree portfast
%Warning: portfast should only be enabled on ports connected to a single
host. Connecting hubs, concentrators, switches, bridges, etc... to this
interface  when portfast is enabled, can cause temporary bridging loops.
Use with CAUTION

%Portfast has been configured on FastEthernet0/1 but will only
have effect when the interface is in a non-trunking mode.
Switch(config-if)#exit
Switch(config)#write memory
               ^
% Invalid input detected at '^' marker.

Switch(config)#exit
Switch#
%SYS-5-CONFIG_I: Configured from console by console
w
Building configuration...
[OK]
Switch#write memory
Building configuration...
[OK]
Switch#
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to up
```

Verify Configuration

```
Switch#show vlan brief

VLAN Name                             Status    Ports
---- -------------------------------- --------- -------------------------------
1    default                          active    Fa0/2, Fa0/3, Fa0/4, Fa0/5
                                                Fa0/6, Fa0/7, Fa0/8, Fa0/9
                                                Fa0/10, Fa0/11, Fa0/12, Fa0/13
                                                Fa0/14, Fa0/15, Fa0/16, Fa0/17
                                                Fa0/18, Fa0/19, Fa0/20, Fa0/21
                                                Fa0/22, Fa0/23, Fa0/24, Gig0/1
                                                Gig0/2
10   Data_VLAN                        active    Fa0/1
20   Voice_VLAN                       active    Fa0/1
1002 fddi-default                     active
1003 token-ring-default               active
1004 fddinet-default                  active
1005 trnet-default                    active
Switch#show interfaces FastEthernet0/1 switchport
Name: Fa0/1
Switchport: Enabled
Administrative Mode: static access
Operational Mode: static access
Administrative Trunking Encapsulation: dot1q
Operational Trunking Encapsulation: native
Negotiation of Trunking: Off
Access Mode VLAN: 10 (Data_VLAN)
Trunking Native Mode VLAN: 1 (default)
Voice VLAN: 20
Administrative private-vlan host-association: none
Administrative private-vlan mapping: none
Administrative private-vlan trunk native VLAN: none
Administrative private-vlan trunk encapsulation: dot1q
Administrative private-vlan trunk normal VLANs: none
Administrative private-vlan trunk private VLANs: none
Operational private-vlan: none
Trunking VLANs Enabled: All
Pruning VLANs Enabled: 2-1001
Capture Mode Disabled
```

Test connectivity

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.10.2

Pinging 192.168.10.2 with 32 bytes of data:

Reply from 192.168.10.2: bytes=32 time=3ms TTL=128
Reply from 192.168.10.2: bytes=32 time<1ms TTL=128
Reply from 192.168.10.2: bytes=32 time=3ms TTL=128
Reply from 192.168.10.2: bytes=32 time=2ms TTL=128

Ping statistics for 192.168.10.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 3ms, Average = 2ms

C:\>
```