**Creating VLANs and assigning interfaces to each VLAN**

A diagram of a computer network

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* Goto the CLI of the Switch and view the current (default) VLAN configuration.
  + **enable**
  + **show vlan**
* Check the communication by sending a simple PDU between PC1 & PC2 (successful) | PC5 & PC3 (successful) | PC4 & PC2 (unsuccessful as they are in different IP subnets)
* Then, create two VLANs for HR and FINANCE.
  + **configure terminal**
  + **vlan 15**
  + **name HR**
  + **exit**
  + **vlan 25**
  + **name FINANCE**
  + **exit**
  + Now, view the newly created VLANs by issuing the **show vlan** command in privileged mode.
* Assign ports/interfaces to the newly created VLANs.
  + **configure terminal**
  + **int range fa0/1-2**
  + **switchport mode access**
  + **switchport access vlan 15**
  + **int range fa0/3-5**
  + **switchport mode access**
  + **switchport access vlan 25**
  + Now, view the ports/interfaces that are assigned to the newly created VLANs by issuing the **show vlan** command in privileged mode and by hovering the cursor over the switch.

**CONFIGURE INTER-VLAN COMMUNICATION [Router-on-a-Stick]**

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* Set the mode of switch interface (Fa0/6) connecting to the router as trunk.
  + **configure terminal**
  + **int fa0/6**
  + **switchport mode trunk**
  + **exit**
  + Now hover the cursor over the switch and see the VLAN assigned for Fa0/6 which is “**--"** denoting that as a trunk port.
* Interface configuration on router interface Fa0/0
  + **configure terminal**
  + **int fa0/0**
  + **no shutdown** [Change the port state to up]
  + **exit**
* Router sub-interface configuration on sub-interface Fa0/0.15
  + **configure terminal**
  + **int fa0/0.15**
  + **encapsulation dot1q 15**
  + **ip address 192.168.15.100 255.255.255.0**
  + **exit**
* Router sub-interface configuration on sub-interface Fa0/0.25
  + **configure terminal**
  + **int fa0/0.25**
  + **encapsulation dot1q 25**
  + **ip address 192.168.25.100 255.255.255.0**
  + **exit**
* Now hover the cursor over the router and see the relevant information on sub-interfaces fa0/0.15 and fa0/0.25
* Now set the default gateway as,
  + 192.168.15.100/24 for PC1 & PC2
  + 192.168.25.100/24 for PC3, PC4 & PC5
* Finally, check the inter-VLAN connectivity by sending a simple PDU between PC2 & PC5.

A diagram of a network

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