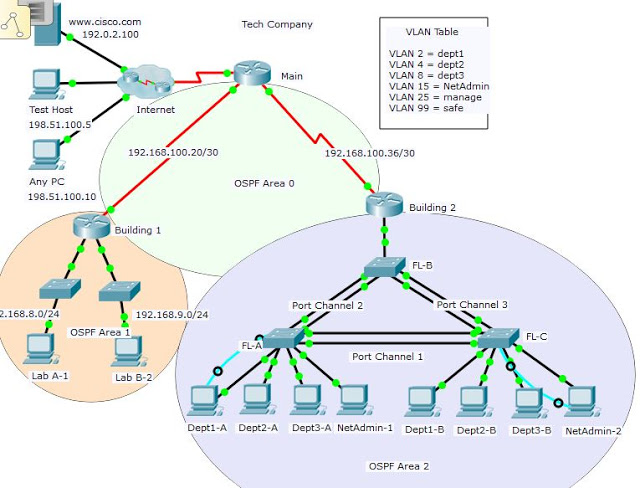
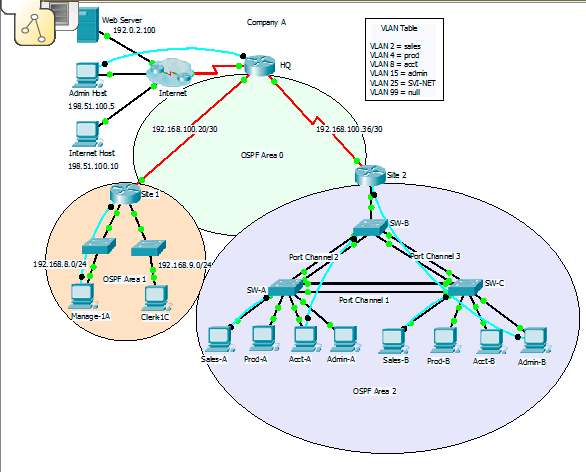
**Practice Skills OSPF'**

[](https://1.bp.blogspot.com/-l0W7GfHaFTA/WG_fFSZKl6I/AAAAAAAAAxM/CvIROX7ufms0h_pN2v1EgFuOuTOcAsGbQCLcB/s1600/succ+ospf.JPG)

Tutorial

**At the bottom of the instruction page, you will find the version information.**  
**The following commands were applied to the packet tracer, version 3.0, ID 1.**  
  
**If your version is different, or the names do not match the image above, please verify all naming conventions and other information required by your packet tracer, as they differ from version to version.**

[](https://3.bp.blogspot.com/-bQGtIRbrTzE/WG_iGejC1WI/AAAAAAAAAxY/rEXR5MjbS14E2-H-ATN-0tiiQsd7KivuQCLcB/s1600/www.png)

**THE FOLLOWING CONFIGURATION, IF IMPLEMENTED CORRECTLY, YIELDS A SCORE OF 91.0%**  
  
Refer to the instructions for reasoning behind them, as all were done (or attempted) to be in accordance with the instruction.  
  
**CONFIGURATION FOR BLDG-1 (or "SITE-1" on other versions)**  
Router>en  
Router#conf t  
Router(config)#hostname Bldg-1  
Bldg-1(config)#no ip domain-lookup  
Bldg-1(config)#enable secret class  
Bldg-1(config)#line vty 0 14  
Bldg-1(config-line)#password cisco  
Bldg-1(config-line)#login  
Bldg-1(config-line)#logging synch  
Bldg-1(config-line)#exit  
Bldg-1(config)#line console 0  
Bldg-1(config-line)#password cisco  
Bldg-1(config-line)#logging synch  
Bldg-1(config-line)#login  
Bldg-1(config-line)#exit  
Bldg-1(config)#banner motd "Authorized access only!"  
Bldg-1(config)#service password  
Bldg-1(config)#line aux 0  
Bldg-1(config-line)#password cisco  
Bldg-1(config-line)#login  
Bldg-1(config-line)#logging synch  
Bldg-1(config-line)#exit  
Bldg-1(config)#int s0/0/0  
Bldg-1(config-if)#desc "Outbound; to Main"  
Bldg-1(config-if)#ip add 192.168.100.22 255.255.255.252  
Bldg-1(config-if)#ip ospf cost 7500  
Bldg-1(config-if)#ip ospf message-digest-key 1 md5 xyz\_OSPF  
Bldg-1(config-if)#ip ospf authentication message-digest  
Bldg-1(config-if)#no sh  
Bldg-1(config-if)#exit  
Bldg-1(config)#int g0/1  
Bldg-1(config-if)#ip add 192.168.9.1 255.255.255.0  
Bldg-1(config-if)#desc "To LAN 'Lab B-2'."  
Bldg-1(config-if)#no sh  
Bldg-1(config-if)#exit  
Bldg-1(config)#router ospf 1  
Bldg-1(config-router)#router-id 1.1.1.1  
Bldg-1(config-router)#area 0 authentication message-digest  
Bldg-1(config-router)#network 192.168.100.20 0.0.0.3 area 0  
Bldg-1(config-router)#network 192.168.8.0 0.0.0.255 area 1  
Bldg-1(config-router)#network 192.168.9.0 0.0.0.255 area 1  
Bldg-1(config-router)#passive-interface g0/0  
Bldg-1(config-router)#passive-interface g0/1  
Bldg-1(config-router)#exit  
  
**CONFIGURATION FOR MAIN (or "HQ" on other versions)**  
Main>en  
Main#conf t  
Main(config)#hostname Main  
Main(config)#no ip domain-lookup  
Main(config)#enable secret class  
Main(config)#line vty 0 14  
Main(config-line)#password cisco  
Main(config-line)#logging synch  
Main(config-line)#login  
Main(config-line)#exit  
Main(config)#line console 0  
Main(config-line)#password cisco  
Main(config-line)#logging synch  
Main(config-line)#login  
Main(config-line)#exit  
Main(config)#line aux 0  
Main(config-line)#password cisco  
Main(config-line)#logging synch  
Main(config-line)#login  
Main(config-line)#exit  
Main(config)#banner motd "Authorized access only!"  
Main(config)#service pass  
Main(config)#ip route 0.0.0.0 0.0.0.0 S0/1/0  
Main(config)#int S0/0/0  
Main(config-if)#bandwidth 128  
Main(config-if)#ip add 192.168.100.21 255.255.255.252  
Main(config-if)#desc "Outbound; Bldg-1"  
Main(config-if)#ip ospf cost 7500  
Main(config-if)#ip ospf message-digest-key 1 md5 xyz\_OSPF  
Main(config-if)#ip ospf authentication message-digest  
Main(config-if)#no sh  
Main(config-if)#exit  
Main(config)#int s0/0/1  
Main(config-if)#bandwidth 128  
Main(config-if)#ip add 192.168.100.37 255.255.255.252  
Main(config-if)#desc "Outbound; Bldg-2"  
Main(config-if)#clock rate 128000  
Main(config-if)#ip ospf message-digest-key 1 md5 xyz\_OSPF  
Main(config-if)#ip ospf authentication message-digest  
Main(config-if)#no sh  
Main(config-if)#exit  
Main(config)#int s0/1/0  
Main(config-if)#bandwidth 128  
Main(config-if)#ip add 203.0.113.18 255.255.255.248  
Main(config-if)#desc "Outbound; Internet"  
Main(config-if)#no sh  
Main(config-if)#exit  
Main(config)#router ospf 1  
Main(config-router)#router-id 2.2.2.2  
Main(config-router)#router-id 2.2.2.2  
Main(config-router)#area 0 authentication message-digest  
Main(config-router)#default-information originate  
Main(config-router)#network 192.168.100.20 0.0.0.3 area 0  
Main(config-router)#network 192.168.100.36 0.0.0.3 area 0  
Main(config-router)#passive-int s0/1/0  
Main(config-router)#exit  
Main(config)#ip access-list standard telnetBlock  
Main(config-std-nacl)#permit host 198.51.100.5  
Main(config-std-nacl)#line vty 0 15  
Main(config-line)#access-class telnetBlock in  
Main(config-line)#exit  
Main(config)#int s0/1/0  
Main(config-if)#ip access-group 101 in  
Main(config-if)#exit  
Main(config)#exit  
Main#wr  
  
**CONFIGURATION FOR BLDG-2 (or "SITE-2" on other versions)**  
Router>en  
Router#conf t  
Router(config)#hostname Bldg-2  
Bldg-2(config)#no ip domain-lookup  
Bldg-2(config)#enable secret class  
Bldg-2(config)#line vty 0 14  
Bldg-2(config-line)#password cisco  
Bldg-2(config-line)#logging synch  
Bldg-2(config-line)#login  
Bldg-2(config-line)#exit  
Bldg-2(config)#line console 0  
Bldg-2(config-line)#password cisco  
Bldg-2(config-line)#logging synch  
Bldg-2(config-line)#login  
Bldg-2(config-line)#exit  
Bldg-2(config)#line aux 0  
Bldg-2(config-line)#password cisco  
Bldg-2(config-line)#logging synch  
Bldg-2(config-line)#login  
Bldg-2(config-line)#exit  
Bldg-2(config)#banner motd "Authorized Access Only!"  
Bldg-2(config)#service pass  
Bldg-2(config)#int s0/0/1  
Bldg-2(config-if)#bandwidth 128  
Bldg-2(config-if)#ip add 192.168.100.38 255.255.255.252  
Bldg-2(config-if)#desc "Outbound; Main"  
Bldg-2(config-if)#ip ospf message-digest-key 1 md5 xyz\_OSPF  
Bldg-2(config-if)#ip ospf authentication message-digest  
Bldg-2(config-if)#no sh  
Bldg-2(config-if)#exit  
Bldg-2(config)#int g0/1  
Bldg-2(config-if)#no sh  
Bldg-2(config-if)#exit  
Bldg-2(config)#int g0/1.2  
Bldg-2(config-subif)#encapsulation dot1q 2  
Bldg-2(config-subif)#ip add 10.10.2.1 255.255.255.0  
Bldg-2(config-subif)#exit  
Bldg-2(config)#int g0/1.4  
Bldg-2(config-subif)#encapsulation dot1q 4  
Bldg-2(config-subif)#ip add 10.10.4.1 255.255.255.0  
Bldg-2(config-subif)#exit  
Bldg-2(config)#int g0/1.8  
Bldg-2(config-subif)#encapsulation dot1q 8  
Bldg-2(config-subif)#ip add 10.10.8.1 255.255.255.0  
Bldg-2(config-subif)#exit  
Bldg-2(config)#int g0/1.15  
Bldg-2(config-subif)#encapsulation dot1q 15  
Bldg-2(config-subif)#ip add 10.10.15.1 255.255.255.0  
Bldg-2(config-subif)#exit  
Bldg-2(config)#int g0/1.25  
Bldg-2(config-subif)#encapsulation dot1q 25  
Bldg-2(config-subif)#ip add 10.10.25.1 255.255.255.0  
Bldg-2(config-subif)#exit  
Bldg-2(config)#router ospf 1  
Bldg-2(config-router)#router-id 3.3.3.3  
Bldg-2(config-router)#passive-int g0/1  
Bldg-2(config-router)#network 192.168.100.36 0.0.0.3 area 0  
Bldg-2(config-router)#network 10.10.2.0 0.0.0.255 area 2  
Bldg-2(config-router)#network 10.10.2.0 0.0.0.255 area 2  
Bldg-2(config-router)#network 10.10.4.0 0.0.0.255 area 2  
Bldg-2(config-router)#network 10.10.8.0 0.0.0.255 area 2  
Bldg-2(config-router)#network 10.10.15.0 0.0.0.255 area 2  
Bldg-2(config-router)#no auto-summary   
Bldg-2(config-router)#passive-int g0/1.2  
Bldg-2(config-router)#passive-int g0/1.4  
Bldg-2(config-router)#passive-int g0/1.8  
Bldg-2(config-router)#passive-int g0/1.15  
Bldg-2(config-router)#exit  
Bldg-2(config)#int s0/0/1  
Bldg-2(config-if)#ip summary-address eigrp 100 10.10.0.0 255.255.240.0  
Bldg-2(config-if)#exit  
Bldg-2(config)#ip dhcp excluded-address 10.10.2.1 10.10.2.5  
Bldg-2(config)#ip dhcp excluded-address 10.10.4.1 10.10.4.5  
Bldg-2(config)#ip dhcp excluded-address 10.10.8.1 10.10.8.5  
Bldg-2(config)#ip dhcp pool vlan2pool  
Bldg-2(dhcp-config)#network 10.10.2.0 255.255.255.0  
Bldg-2(dhcp-config)#default-router 10.10.2.1  
Bldg-2(dhcp-config)#dns-server 192.168.200.225  
Bldg-2(dhcp-config)#ip dhcp pool vlan4pool  
Bldg-2(dhcp-config)#network 10.10.4.0 255.255.255.0  
Bldg-2(dhcp-config)#default-router 10.10.4.1  
Bldg-2(dhcp-config)#dns-server 192.168.200.225  
Bldg-2(dhcp-config)#ip dhcp pool vlan8pool  
Bldg-2(dhcp-config)#network 10.10.8.0 255.255.255.0  
Bldg-2(dhcp-config)#default-router 10.10.8.1  
Bldg-2(dhcp-config)#dns-server 192.168.200.225  
Bldg-2(dhcp-config)#exit  
Bldg-2(config)#access-list 1 permit 10.10.15.0 0.0.0.255  
Bldg-2(config)#interface g0/1.25  
Bldg-2(config-subif)#ip access-group 1 out  
Bldg-2(config-subif)#exit  
Bldg-2(config)#exit  
Bldg-2#  
  
  
**CONFIGURATION FOR FL-A (or "SW-A" on other versions)**  
FL-A>en  
FL-A#conf t  
FL-A(config)#hostname FL-A  
FL-A(config)#no ip domain-lookup  
FL-A(config)#enable secret class  
FL-A(config)#line console 0  
FL-A(config-line)#logging synch  
FL-A(config-line)#password cisco  
FL-A(config-line)#login  
FL-A(config-line)#exit   
FL-A(config)#line vty 0 15  
FL-A(config-line)#password cisco  
FL-A(config-line)#logging synch  
FL-A(config-line)#login  
FL-A(config-line)#exit  
FL-A(config)#banner motd "Authorized access only!"  
FL-A(config)#ip default-gateway 10.10.25.1  
FL-A(config)#vlan 2  
FL-A(config-vlan)#name dept1  
FL-A(config-vlan)#exit  
FL-A(config)#vlan 4  
FL-A(config-vlan)#name dept2  
FL-A(config-vlan)#exit  
FL-A(config)#vlan 8  
FL-A(config-vlan)#name dept3  
FL-A(config-vlan)#exit  
FL-A(config)#vlan 15  
FL-A(config-vlan)#name NetAdmin  
FL-A(config-vlan)#exit  
FL-A(config)#vlan 25  
FL-A(config-vlan)#name manage  
FL-A(config-vlan)#exit  
FL-A(config)#vlan 99  
FL-A(config-vlan)#name safe  
FL-A(config-vlan)#exit  
FL-A(config)#int vlan 25  
FL-A(config-if)#ip add 10.10.25.254 255.255.255.0  
FL-A(config-if)#no sh  
FL-A(config-if)#exit  
FL-A(config)#int F0/5  
FL-A(config-if)#switchport mode access  
FL-A(config-if)#switchport access vlan 2  
FL-A(config-if)#exit  
FL-A(config)#int F0/10  
FL-A(config-if)#switchport mode access  
FL-A(config-if)#switchport access vlan 4  
FL-A(config-if)#exit  
FL-A(config)#int F0/15  
FL-A(config-if)#switchport mode access  
FL-A(config-if)#switchport access vlan 8  
FL-A(config)#int F0/24  
FL-A(config-if)#switchport mode access  
FL-A(config-if)#switchport access vlan 15  
FL-A(config-if)#exit  
FL-A(config)#int range F0/6-9, F0/11-14, F0/16-23  
FL-A(config-if-range)#switchport mode access  
FL-A(config-if-range)#switchport access vlan 99  
FL-A(config-if-range)#shutdown  
FL-A(config-if-range)#exit  
FL-A(config)#int range f0/1-2  
FL-A(config-if-range)#channel-group 1 mode active  
FL-A(config-if-range)#exit  
FL-A(config)#int port-channel 1  
FL-A(config-if)#switchport mode trunk   
FL-A(config-if)#exit  
FL-A(config)#int range f0/3-4  
FL-A(config-if-range)#channel-group 2 mode active  
FL-A(config-if-range)#exit  
FL-A(config)#int port-channel 2  
FL-A(config-if)#switchport mode trunk  
FL-A(config-if)#exit  
FL-A(config)#spanning-tree mode rapid-pvst  
FL-A(config)#spanning-tree vlan 2 root primary  
FL-A(config)#spanning-tree vlan 4 root primary  
FL-A(config)#spanning-tree vlan 8 root secondary  
FL-A(config)#spanning-tree vlan 15 root secondary  
FL-A(config)#int f0/5  
FL-A(config-if)#switchport port-securty  
FL-A(config-if)#switchport port-security  
FL-A(config-if)#switchport port-security violation restrict  
FL-A(config-if)#switchport port-security maximum 2  
FL-A(config-if)#switchport port-security mac-address sticky  
FL-A(config-if)#exi  
FL-A(config)#int f0/10  
FL-A(config-if)#switchport port-security  
FL-A(config-if)#switchport port-security violation restrict  
FL-A(config-if)#switchport port-security maximum 2  
FL-A(config-if)#switchport port-security mac-address sticky  
FL-A(config-if)#exit  
FL-A(config)#int f0/15  
FL-A(config-if)#switchport port-security  
FL-A(config-if)#switchport port-security violation restrict  
FL-A(config-if)#switchport port-security maximum 2  
FL-A(config-if)#switchport port-security mac-address sticky  
FL-A(config-if)#exit  
FL-A(config)#int f0/24  
FL-A(config-if)#switchport port-security  
FL-A(config-if)#switchport port-security violation restrict  
FL-A(config-if)#switchport port-security maximum 2  
FL-A(config-if)#switchport port-security mac-address sticky  
FL-A(config-if)#exit  
FL-A(config)#exit  
FL-A#  
  
**CONFIGURATION FOR FL-B (or "SW-B" on other versions)**  
Switch>EN  
Switch#conf t  
Enter configuration commands, one per line.  End with CNTL/Z.  
Switch(config)#hostname FL-B  
FL-B(config)#no ip domain-lookup  
FL-B(config)#enable secret class  
FL-B(config)#line console 0  
FL-B(config-line)#logging synch  
FL-B(config-line)#password cisco  
FL-B(config-line)#login  
FL-B(config-line)#exit  
FL-B(config)#line vty 0 15  
FL-B(config-line)#logging synch  
FL-B(config-line)#password cisco  
FL-B(config-line)#login  
FL-B(config-line)#exit  
FL-B(config)#service pass  
FL-B(config)#banner motd "Authorized access only!"  
FL-B(config)#ip domain-name ccnaPTSA.com  
FL-B(config)#crypto key generate rsa  
The name for the keys will be: FL-B.ccnaPTSA.com  
How many bits in the modulus [512]: 1024  
FL-B(config)#username netadmin password SSHsecret9  
FL-B(config)#ip ssh version 2  
FL-B(config)#line vty 0 15  
FL-B(config-line)#login local  
FL-B(config-line)#transport input ssh  
FL-B(config-line)#logging synch  
FL-B(config-line)#login  
FL-B(config-line)#exit  
FL-B(config)#ip default-gateway 10.10.25.1  
FL-B(config)#vlan 2  
FL-B(config-vlan)#name dept1  
FL-B(config-vlan)#exit  
FL-B(config)#vlan 4  
FL-B(config-vlan)#name dept2  
FL-B(config-vlan)#exit  
FL-B(config)#vlan 8  
FL-B(config-vlan)#name dept3  
FL-B(config-vlan)#exit  
FL-B(config)#vlan 15  
FL-B(config-vlan)#name NetAdmin  
FL-B(config-vlan)#exit  
FL-B(config)#vlan 25  
FL-B(config-vlan)#name manage  
FL-B(config-vlan)#exit  
FL-B(config)#vlan 99  
FL-B(config-vlan)#name safe  
FL-B(config-vlan)#exit  
FL-B(config)#int vlan 25  
FL-B(config-if)#ip add 10.10.25.253 255.255.255.0  
FL-B(config-if)#no sh  
FL-B(config-if)#exit  
FL-B(config)#int g0/1  
FL-B(config-if)#switchport mode trunk  
FL-B(config-if)#exit  
FL-B(config)#int range f0/3-4  
FL-B(config-if-range)#channel-group 2 mode active  
FL-B(config-if-range)#exit  
FL-B(config)#int port-channel 2  
FL-B(config-if)#switchport mode trunk  
FL-B(config-if)#exit  
FL-B(config)#int range f0/5-6  
FL-B(config-if-range)#channel-group 3 mode active  
FL-B(config-if-range)#exit  
FL-B(config)#int port-channel 3  
FL-B(config-if)#switchport mode trunk  
FL-B(config-if)#exit  
FL-B(config)#spanning-tree mode rapid-pvst  
  
**CONFIGURATION FOR FL-B (or "SW-C" on other versions)**  
FL-C>en  
FL-C#conf t  
FL-C(config)#hostname FL-C  
FL-C(config)#no ip domain-lookup  
FL-C(config)#enable secret class  
FL-C(config)#line console 0  
FL-C(config-line)#logging synch  
FL-C(config-line)#password cisco  
FL-C(config-line)#login  
FL-C(config-line)#exit  
FL-C(config)#line vty 0 15  
FL-C(config-line)#password cisco  
FL-C(config-line)#logging synch  
FL-C(config-line)#login  
FL-C(config-line)#exit  
FL-C(config)#service pass  
FL-C(config)#banner motd "Authorized access only!"  
FL-C(config)#ip default-gateway 10.10.25.1  
FL-C(config)#vlan 2  
FL-C(config-vlan)#name dept1  
FL-C(config-vlan)#exit  
FL-C(config)#vlan 4  
FL-C(config-vlan)#name dept2  
FL-C(config-vlan)#exit  
FL-C(config)#vlan 8  
FL-C(config-vlan)#name dept3  
FL-C(config-vlan)#exit  
FL-C(config)#vlan 15  
FL-C(config-vlan)#name NetAdmin  
FL-C(config-vlan)#exit  
FL-C(config)#vlan 25  
FL-C(config-vlan)#name manage  
FL-C(config-vlan)#exit  
FL-C(config)#vlan 99  
FL-C(config-vlan)#name safe  
FL-C(config-vlan)#exit  
FL-C(config)#int vlan 25  
FL-C(config-if)#ip add 10.10.25.252 255.255.255.0  
FL-C(config-if)#no sh  
FL-C(config-if)#exit  
FL-C(config)#int f0/7  
FL-C(config-if)#switchport mode access  
FL-C(config-if)#switchport access vlan 2  
FL-C(config-if)#exit  
FL-C(config)#int f0/10  
FL-C(config-if)#switchport mode access  
FL-C(config-if)#switchport access vlan 4  
FL-C(config-if)#exit  
FL-C(config)#int f0/15  
FL-C(config-if)#switchport mode access  
FL-C(config-if)#switchport access vlan 8  
FL-C(config-if)#exit  
FL-C(config)#int f0/24  
FL-C(config-if)#switchport mode access  
FL-C(config-if)#switchport access vlan 15  
FL-C(config-if)#exit  
FL-C(config)#int range f0/1-2  
FL-C(config-if-range)#channel-group 1 mode active  
Creating a port-channel interface Port-channel 1  
FL-C(config-if-range)#no sh  
FL-C(config-if-range)#exit  
FL-C(config)#int port-channel 1  
FL-C(config-if)#switchport mode trunk  
FL-C(config-if)#exit  
FL-C(config)#int range f0/5-6  
FL-C(config-if-range)#channel-group 3 mode passive  
FL-C(config-if-range)#  
Creating a port-channel interface Port-channel 3  
FL-C(config-if-range)#no sh  
FL-C(config-if)#exit  
FL-C(config)#spanning-tree mode rapid-pvst  
FL-C(config)#spanning-tree vlan 2 root secondary  
FL-C(config)#spanning-tree vlan 4 root secondary  
FL-C(config)#spanning-tree vlan 8 root primary  
FL-C(config)#spanning-tree vlan 15 root primary  
FL-C(config)#int range F0/7, F0/10, F0/15, F0/24  
FL-C(config-if-range)#spanning-tree portfast  
FL-C(config-if-range)#spanning-tree bpduguard enable  
FL-C(config-if-range)#no shut  
FL-C(config-if-range)#exit  
FL-C(config)#exit  
FL-C#  
  
In the version we were given, the first three left-most PCs (Dept1-A, Dept2-A, Dept3-A) are DHCP. All should work. NetAdmin-1 (the rightmost PC) is a static assignment. The same goes for Dept1-B, Dept2-B, Dept3-B (DHCP), and static once more for NetAdmin-2.   
  
  
Lab A-1 and Lab B-2 (the PCs off of "Building 1" (the small bubble of OSPF area 1) I did statically, I was unsure if it was considered the same VLAN as the aforementioned PCs were.