

Assumptions

1. Assume all devices are CISCO.
2. Configure each router, add at least 1 virtual PC to each office.

Stages

1. First of all, I created a diagram from the draw.io site based on the given tasks and added the ip addresses that I thought to assign to this diagram (APPENDIX-A).
2. Then I drew the diagram in the GNS3 program (APPENDIX-B).
3. After creating the diagram over GNS3, I assigned ip to routers and PCs. You can see the codes on how I made these ip assignments in the picture below.

```
Factory-F3-Router#conf term
Enter configuration commands, one per line. End with CNTL/Z.
Factory-F3-Router(config)#interface Ethernet0/0
Factory-F3-Router(config-if)#ip add 192.168.4.1 255.255.255.0
Factory-F3-Router(config-if)#no shutdown
Factory-F3-Router(config-if)#end
Factory-F3-Router#writ
*Mar 1 01:07:57.723: %SYS-5-CONFIG_I: Configured from console by console
Factory-F3-Router#write memory
Building configuration...
[OK]
Factory-F3-Router#
```

4. I finished the IP assignment process and checked it on all routers and PCs.
5. After this process, I created the ip routes so that all the PCs could communicate with each other. You can see the code sample for this operation below.

```
Branch-Office-Router#conf term
Enter configuration commands, one per line. End with CNTL/Z.
Branch-Office-Router(config)#ip route 40.0.0.0 255.0.0.0 50.0.0.1
Branch-Office-Router(config)#ip route 60.0.0.0 255.0.0.0 50.0.0.1
Branch-Office-Router(config)#ip route 70.0.0.0 255.0.0.0 50.0.0.1
Branch-Office-Router(config)#ip route 192.168.5.0 255.255.255.0 70.0.0.2
Branch-Office-Router(config)#ip route 192.168.6.0 255.255.255.0 70.0.0.2
Branch-Office-Router(config)#ip route 192.168.7.0 255.255.255.0 60.0.0.2
Branch-Office-Router(config)#ip route 192.168.8.0 255.255.255.0 60.0.0.2
Branch-Office-Router(config)#ip route 10.0.0.0 255.0.0.0 40.0.0.1
Branch-Office-Router(config)#ip route 20.0.0.0 255.0.0.0 40.0.0.1
Branch-Office-Router(config)#ip route 30.0.0.0 255.0.0.0 40.0.0.1
Branch-Office-Router(config)#ip route 192.168.4.0 255.255.255.0 10.0.0.2
Branch-Office-Router(config)#ip route 192.168.3.0 255.255.255.0 20.0.0.2
Branch-Office-Router(config)#ip route 192.168.2.0 255.255.255.0 30.0.0.2
Branch-Office-Router(config)#end
Branch-Office-Router#
*Mar 1 01:01:06.883: %SYS-5-CONFIG_I: Configured from console by console
Branch-Office-Router#write memory
Building configuration...
[OK]
Branch-Office-Router#
```

6. After all the routes were defined, ping was done to control the communication between all the PCs. You can see the details of this process below.

PINGS

192.168.1.2 Branch-Office-PC is pinging:

```
Branch-Office-PC
VPCS> ping 192.168.2.2
84 bytes from 192.168.2.2 icmp_seq=1 ttl=60 time=122.382 ms
84 bytes from 192.168.2.2 icmp_seq=2 ttl=60 time=123.084 ms
84 bytes from 192.168.2.2 icmp_seq=3 ttl=60 time=122.846 ms
84 bytes from 192.168.2.2 icmp_seq=4 ttl=60 time=121.964 ms
84 bytes from 192.168.2.2 icmp_seq=5 ttl=60 time=122.541 ms

VPCS> ping 192.168.3.2
84 bytes from 192.168.3.2 icmp_seq=1 ttl=60 time=122.965 ms
84 bytes from 192.168.3.2 icmp_seq=2 ttl=60 time=123.413 ms
84 bytes from 192.168.3.2 icmp_seq=3 ttl=60 time=123.416 ms
84 bytes from 192.168.3.2 icmp_seq=4 ttl=60 time=123.573 ms
84 bytes from 192.168.3.2 icmp_seq=5 ttl=60 time=122.063 ms

VPCS> ping 192.168.4.2
84 bytes from 192.168.4.2 icmp_seq=1 ttl=60 time=122.572 ms
84 bytes from 192.168.4.2 icmp_seq=2 ttl=60 time=123.221 ms
84 bytes from 192.168.4.2 icmp_seq=3 ttl=60 time=123.466 ms
84 bytes from 192.168.4.2 icmp_seq=4 ttl=60 time=125.494 ms
84 bytes from 192.168.4.2 icmp_seq=5 ttl=60 time=122.750 ms
```

```
Branch-Office-PC
VPCS> ping 192.168.5.2
84 bytes from 192.168.5.2 icmp_seq=1 ttl=61 time=92.982 ms
84 bytes from 192.168.5.2 icmp_seq=2 ttl=61 time=92.399 ms
84 bytes from 192.168.5.2 icmp_seq=3 ttl=61 time=91.897 ms
84 bytes from 192.168.5.2 icmp_seq=4 ttl=61 time=92.066 ms
84 bytes from 192.168.5.2 icmp_seq=5 ttl=61 time=92.326 ms

VPCS> ping 192.168.6.2
84 bytes from 192.168.6.2 icmp_seq=1 ttl=61 time=92.638 ms
84 bytes from 192.168.6.2 icmp_seq=2 ttl=61 time=91.188 ms
84 bytes from 192.168.6.2 icmp_seq=3 ttl=61 time=93.510 ms
84 bytes from 192.168.6.2 icmp_seq=4 ttl=61 time=92.592 ms
84 bytes from 192.168.6.2 icmp_seq=5 ttl=61 time=93.795 ms

VPCS> ping 192.168.7.2
84 bytes from 192.168.7.2 icmp_seq=1 ttl=61 time=92.320 ms
84 bytes from 192.168.7.2 icmp_seq=2 ttl=61 time=91.586 ms
84 bytes from 192.168.7.2 icmp_seq=3 ttl=61 time=91.396 ms
84 bytes from 192.168.7.2 icmp_seq=4 ttl=61 time=92.868 ms
84 bytes from 192.168.7.2 icmp_seq=5 ttl=61 time=92.714 ms

VPCS> ping 192.168.8.2
84 bytes from 192.168.8.2 icmp_seq=1 ttl=61 time=93.189 ms
84 bytes from 192.168.8.2 icmp_seq=2 ttl=61 time=91.755 ms
84 bytes from 192.168.8.2 icmp_seq=3 ttl=61 time=94.517 ms
84 bytes from 192.168.8.2 icmp_seq=4 ttl=61 time=92.336 ms
84 bytes from 192.168.8.2 icmp_seq=5 ttl=61 time=91.806 ms
```

192.168.2.2 Factory-F1-PC is pinging:

```
Factory-F1-PC
VPCS> ping 192.168.1.2
84 bytes from 192.168.1.2 icmp_seq=1 ttl=60 time=121.700 ms
84 bytes from 192.168.1.2 icmp_seq=2 ttl=60 time=123.489 ms
84 bytes from 192.168.1.2 icmp_seq=3 ttl=60 time=122.928 ms
84 bytes from 192.168.1.2 icmp_seq=4 ttl=60 time=122.269 ms
84 bytes from 192.168.1.2 icmp_seq=5 ttl=60 time=122.406 ms

VPCS> ping 192.168.3.2
84 bytes from 192.168.3.2 icmp_seq=1 ttl=61 time=92.219 ms
84 bytes from 192.168.3.2 icmp_seq=2 ttl=61 time=92.047 ms
84 bytes from 192.168.3.2 icmp_seq=3 ttl=61 time=91.281 ms
84 bytes from 192.168.3.2 icmp_seq=4 ttl=61 time=92.943 ms
84 bytes from 192.168.3.2 icmp_seq=5 ttl=61 time=94.260 ms

VPCS> ping 192.168.4.2
84 bytes from 192.168.4.2 icmp_seq=1 ttl=61 time=92.596 ms
84 bytes from 192.168.4.2 icmp_seq=2 ttl=61 time=92.348 ms
84 bytes from 192.168.4.2 icmp_seq=3 ttl=61 time=92.757 ms
84 bytes from 192.168.4.2 icmp_seq=4 ttl=61 time=93.882 ms
84 bytes from 192.168.4.2 icmp_seq=5 ttl=61 time=92.993 ms
```

```
Factory-F1-PC
VPCS> ping 192.168.5.2
84 bytes from 192.168.5.2 icmp_seq=1 ttl=60 time=122.023 ms
84 bytes from 192.168.5.2 icmp_seq=2 ttl=60 time=123.402 ms
84 bytes from 192.168.5.2 icmp_seq=3 ttl=60 time=122.418 ms
84 bytes from 192.168.5.2 icmp_seq=4 ttl=60 time=123.548 ms
84 bytes from 192.168.5.2 icmp_seq=5 ttl=60 time=124.935 ms

VPCS> ping 192.168.6.2
84 bytes from 192.168.6.2 icmp_seq=1 ttl=60 time=125.598 ms
84 bytes from 192.168.6.2 icmp_seq=2 ttl=60 time=124.311 ms
84 bytes from 192.168.6.2 icmp_seq=3 ttl=60 time=122.136 ms
84 bytes from 192.168.6.2 icmp_seq=4 ttl=60 time=124.115 ms
84 bytes from 192.168.6.2 icmp_seq=5 ttl=60 time=123.231 ms

VPCS> ping 192.168.7.2
84 bytes from 192.168.7.2 icmp_seq=1 ttl=60 time=120.964 ms
84 bytes from 192.168.7.2 icmp_seq=2 ttl=60 time=124.499 ms
84 bytes from 192.168.7.2 icmp_seq=3 ttl=60 time=123.118 ms
84 bytes from 192.168.7.2 icmp_seq=4 ttl=60 time=123.127 ms
84 bytes from 192.168.7.2 icmp_seq=5 ttl=60 time=123.838 ms

VPCS> ping 192.168.8.2
84 bytes from 192.168.8.2 icmp_seq=1 ttl=60 time=123.972 ms
84 bytes from 192.168.8.2 icmp_seq=2 ttl=60 time=122.967 ms
84 bytes from 192.168.8.2 icmp_seq=3 ttl=60 time=124.641 ms
84 bytes from 192.168.8.2 icmp_seq=4 ttl=60 time=123.773 ms
84 bytes from 192.168.8.2 icmp_seq=5 ttl=60 time=122.849 ms
```

192.168.3.2 Factory-F2-PC is pinging:

```
Factory-F2-PC
VPCS> ping 192.168.1.2
84 bytes from 192.168.1.2 icmp_seq=1 ttl=60 time=122.769 ms
84 bytes from 192.168.1.2 icmp_seq=2 ttl=60 time=121.303 ms
84 bytes from 192.168.1.2 icmp_seq=3 ttl=60 time=122.005 ms
84 bytes from 192.168.1.2 icmp_seq=4 ttl=60 time=123.914 ms
84 bytes from 192.168.1.2 icmp_seq=5 ttl=60 time=122.200 ms

VPCS> ping 192.168.2.2
84 bytes from 192.168.2.2 icmp_seq=1 ttl=61 time=92.228 ms
84 bytes from 192.168.2.2 icmp_seq=2 ttl=61 time=91.632 ms
84 bytes from 192.168.2.2 icmp_seq=3 ttl=61 time=93.394 ms
84 bytes from 192.168.2.2 icmp_seq=4 ttl=61 time=92.543 ms
84 bytes from 192.168.2.2 icmp_seq=5 ttl=61 time=92.746 ms

VPCS> ping 192.168.4.2
84 bytes from 192.168.4.2 icmp_seq=1 ttl=61 time=92.724 ms
84 bytes from 192.168.4.2 icmp_seq=2 ttl=61 time=92.652 ms
84 bytes from 192.168.4.2 icmp_seq=3 ttl=61 time=92.601 ms
84 bytes from 192.168.4.2 icmp_seq=4 ttl=61 time=76.375 ms
84 bytes from 192.168.4.2 icmp_seq=5 ttl=61 time=91.201 ms
```

```
Factory-F2-PC
VPCS> ping 192.168.5.2
84 bytes from 192.168.5.2 icmp_seq=1 ttl=60 time=120.740 ms
84 bytes from 192.168.5.2 icmp_seq=2 ttl=60 time=119.671 ms
84 bytes from 192.168.5.2 icmp_seq=3 ttl=60 time=119.825 ms
84 bytes from 192.168.5.2 icmp_seq=4 ttl=60 time=119.699 ms
84 bytes from 192.168.5.2 icmp_seq=5 ttl=60 time=120.523 ms

VPCS> ping 192.168.6.2
84 bytes from 192.168.6.2 icmp_seq=1 ttl=60 time=119.478 ms
84 bytes from 192.168.6.2 icmp_seq=2 ttl=60 time=118.258 ms
84 bytes from 192.168.6.2 icmp_seq=3 ttl=60 time=120.673 ms
84 bytes from 192.168.6.2 icmp_seq=4 ttl=60 time=119.418 ms
84 bytes from 192.168.6.2 icmp_seq=5 ttl=60 time=120.321 ms

VPCS> ping 192.168.7.2
84 bytes from 192.168.7.2 icmp_seq=1 ttl=60 time=117.961 ms
84 bytes from 192.168.7.2 icmp_seq=2 ttl=60 time=121.008 ms
84 bytes from 192.168.7.2 icmp_seq=3 ttl=60 time=104.127 ms
84 bytes from 192.168.7.2 icmp_seq=4 ttl=60 time=119.841 ms
84 bytes from 192.168.7.2 icmp_seq=5 ttl=60 time=120.434 ms

VPCS> ping 192.168.8.2
84 bytes from 192.168.8.2 icmp_seq=1 ttl=60 time=120.969 ms
84 bytes from 192.168.8.2 icmp_seq=2 ttl=60 time=119.816 ms
84 bytes from 192.168.8.2 icmp_seq=3 ttl=60 time=121.007 ms
84 bytes from 192.168.8.2 icmp_seq=4 ttl=60 time=119.577 ms
84 bytes from 192.168.8.2 icmp_seq=5 ttl=60 time=119.755 ms
```

192.168.4.2 Factory-F3-PC is pinging:

```
Factory-F3-PC
VPCS> ping 192.168.1.2
84 bytes from 192.168.1.2 icmp_seq=1 ttl=60 time=120.005 ms
84 bytes from 192.168.1.2 icmp_seq=2 ttl=60 time=119.606 ms
84 bytes from 192.168.1.2 icmp_seq=3 ttl=60 time=120.011 ms
84 bytes from 192.168.1.2 icmp_seq=4 ttl=60 time=121.113 ms
84 bytes from 192.168.1.2 icmp_seq=5 ttl=60 time=119.505 ms

VPCS> ping 192.168.2.2
84 bytes from 192.168.2.2 icmp_seq=1 ttl=61 time=90.220 ms
84 bytes from 192.168.2.2 icmp_seq=2 ttl=61 time=89.544 ms
84 bytes from 192.168.2.2 icmp_seq=3 ttl=61 time=90.716 ms
84 bytes from 192.168.2.2 icmp_seq=4 ttl=61 time=90.029 ms
84 bytes from 192.168.2.2 icmp_seq=5 ttl=61 time=91.265 ms

VPCS> ping 192.168.3.2
84 bytes from 192.168.3.2 icmp_seq=1 ttl=61 time=90.461 ms
84 bytes from 192.168.3.2 icmp_seq=2 ttl=61 time=89.846 ms
84 bytes from 192.168.3.2 icmp_seq=3 ttl=61 time=89.791 ms
84 bytes from 192.168.3.2 icmp_seq=4 ttl=61 time=89.705 ms
84 bytes from 192.168.3.2 icmp_seq=5 ttl=61 time=89.864 ms
```

```
Factory-F3-PC
VPCS> ping 192.168.5.2
84 bytes from 192.168.5.2 icmp_seq=1 ttl=60 time=119.707 ms
84 bytes from 192.168.5.2 icmp_seq=2 ttl=60 time=119.638 ms
84 bytes from 192.168.5.2 icmp_seq=3 ttl=60 time=120.419 ms
84 bytes from 192.168.5.2 icmp_seq=4 ttl=60 time=120.110 ms
84 bytes from 192.168.5.2 icmp_seq=5 ttl=60 time=119.919 ms

VPCS> ping 192.168.6.2
84 bytes from 192.168.6.2 icmp_seq=1 ttl=60 time=119.839 ms
84 bytes from 192.168.6.2 icmp_seq=2 ttl=60 time=119.423 ms
84 bytes from 192.168.6.2 icmp_seq=3 ttl=60 time=120.140 ms
84 bytes from 192.168.6.2 icmp_seq=4 ttl=60 time=120.753 ms
84 bytes from 192.168.6.2 icmp_seq=5 ttl=60 time=119.636 ms

VPCS> ping 192.168.7.2
84 bytes from 192.168.7.2 icmp_seq=1 ttl=60 time=119.744 ms
84 bytes from 192.168.7.2 icmp_seq=2 ttl=60 time=119.845 ms
84 bytes from 192.168.7.2 icmp_seq=3 ttl=60 time=119.874 ms
84 bytes from 192.168.7.2 icmp_seq=4 ttl=60 time=119.579 ms
84 bytes from 192.168.7.2 icmp_seq=5 ttl=60 time=119.533 ms

VPCS> ping 192.168.8.2
84 bytes from 192.168.8.2 icmp_seq=1 ttl=60 time=120.132 ms
84 bytes from 192.168.8.2 icmp_seq=2 ttl=60 time=120.047 ms
84 bytes from 192.168.8.2 icmp_seq=3 ttl=60 time=119.842 ms
84 bytes from 192.168.8.2 icmp_seq=4 ttl=60 time=120.035 ms
84 bytes from 192.168.8.2 icmp_seq=5 ttl=60 time=119.646 ms
```

192.168.5.2 Office-F1-O1-PC is pinging:

```
Office-F1-O1-PC
VPCS> ping 192.168.1.2
84 bytes from 192.168.1.2 icmp_seq=1 ttl=61 time=92.068 ms
84 bytes from 192.168.1.2 icmp_seq=2 ttl=61 time=93.293 ms
84 bytes from 192.168.1.2 icmp_seq=3 ttl=61 time=91.558 ms
84 bytes from 192.168.1.2 icmp_seq=4 ttl=61 time=92.388 ms
84 bytes from 192.168.1.2 icmp_seq=5 ttl=61 time=93.627 ms

VPCS> ping 192.168.2.2
84 bytes from 192.168.2.2 icmp_seq=1 ttl=60 time=124.815 ms
84 bytes from 192.168.2.2 icmp_seq=2 ttl=60 time=125.463 ms
84 bytes from 192.168.2.2 icmp_seq=3 ttl=60 time=125.141 ms
84 bytes from 192.168.2.2 icmp_seq=4 ttl=60 time=125.113 ms
84 bytes from 192.168.2.2 icmp_seq=5 ttl=60 time=122.194 ms

VPCS> ping 192.168.3.2
84 bytes from 192.168.3.2 icmp_seq=1 ttl=60 time=123.276 ms
84 bytes from 192.168.3.2 icmp_seq=2 ttl=60 time=123.688 ms
84 bytes from 192.168.3.2 icmp_seq=3 ttl=60 time=121.496 ms
84 bytes from 192.168.3.2 icmp_seq=4 ttl=60 time=122.960 ms
84 bytes from 192.168.3.2 icmp_seq=5 ttl=60 time=122.686 ms

VPCS> ping 192.168.4.2
84 bytes from 192.168.4.2 icmp_seq=1 ttl=60 time=120.480 ms
84 bytes from 192.168.4.2 icmp_seq=2 ttl=60 time=123.954 ms
84 bytes from 192.168.4.2 icmp_seq=3 ttl=60 time=123.175 ms
84 bytes from 192.168.4.2 icmp_seq=4 ttl=60 time=125.078 ms
84 bytes from 192.168.4.2 icmp_seq=5 ttl=60 time=122.004 ms
```

```
Office-F1-O1-PC
VPCS> ping 192.168.6.2
84 bytes from 192.168.6.2 icmp_seq=1 ttl=63 time=31.021 ms
84 bytes from 192.168.6.2 icmp_seq=2 ttl=63 time=31.284 ms
84 bytes from 192.168.6.2 icmp_seq=3 ttl=63 time=31.224 ms
84 bytes from 192.168.6.2 icmp_seq=4 ttl=63 time=30.492 ms
84 bytes from 192.168.6.2 icmp_seq=5 ttl=63 time=30.709 ms

VPCS> ping 192.168.7.2
84 bytes from 192.168.7.2 icmp_seq=1 ttl=61 time=93.692 ms
84 bytes from 192.168.7.2 icmp_seq=2 ttl=61 time=92.557 ms
84 bytes from 192.168.7.2 icmp_seq=3 ttl=61 time=92.504 ms
84 bytes from 192.168.7.2 icmp_seq=4 ttl=61 time=91.797 ms
84 bytes from 192.168.7.2 icmp_seq=5 ttl=61 time=92.796 ms

VPCS> ping 192.168.8.2
84 bytes from 192.168.8.2 icmp_seq=1 ttl=61 time=92.498 ms
84 bytes from 192.168.8.2 icmp_seq=2 ttl=61 time=93.707 ms
84 bytes from 192.168.8.2 icmp_seq=3 ttl=61 time=94.534 ms
84 bytes from 192.168.8.2 icmp_seq=4 ttl=61 time=93.175 ms
84 bytes from 192.168.8.2 icmp_seq=5 ttl=61 time=93.206 ms
```

192.168.6.2 Office-F1-O2-PC is pinging:

```
Office-F1-O2-PC
VPCS> ping 192.168.1.2
84 bytes from 192.168.1.2 icmp_seq=1 ttl=61 time=93.189 ms
84 bytes from 192.168.1.2 icmp_seq=2 ttl=61 time=92.101 ms
84 bytes from 192.168.1.2 icmp_seq=3 ttl=61 time=93.937 ms
84 bytes from 192.168.1.2 icmp_seq=4 ttl=61 time=93.127 ms
84 bytes from 192.168.1.2 icmp_seq=5 ttl=61 time=92.926 ms

VPCS> ping 192.168.2.2
84 bytes from 192.168.2.2 icmp_seq=1 ttl=60 time=122.837 ms
84 bytes from 192.168.2.2 icmp_seq=2 ttl=60 time=124.847 ms
84 bytes from 192.168.2.2 icmp_seq=3 ttl=60 time=123.531 ms
84 bytes from 192.168.2.2 icmp_seq=4 ttl=60 time=120.712 ms
84 bytes from 192.168.2.2 icmp_seq=5 ttl=60 time=124.550 ms

VPCS> ping 192.168.3.2
84 bytes from 192.168.3.2 icmp_seq=1 ttl=60 time=122.570 ms
84 bytes from 192.168.3.2 icmp_seq=2 ttl=60 time=123.070 ms
84 bytes from 192.168.3.2 icmp_seq=3 ttl=60 time=124.154 ms
84 bytes from 192.168.3.2 icmp_seq=4 ttl=60 time=124.333 ms
84 bytes from 192.168.3.2 icmp_seq=5 ttl=60 time=124.874 ms

VPCS> ping 192.168.4.2
84 bytes from 192.168.4.2 icmp_seq=1 ttl=60 time=123.336 ms
84 bytes from 192.168.4.2 icmp_seq=2 ttl=60 time=106.767 ms
84 bytes from 192.168.4.2 icmp_seq=3 ttl=60 time=122.276 ms
84 bytes from 192.168.4.2 icmp_seq=4 ttl=60 time=123.182 ms
84 bytes from 192.168.4.2 icmp_seq=5 ttl=60 time=123.058 ms
```

```
Office-F1-O2-PC
VPCS> ping 192.168.5.2
84 bytes from 192.168.5.2 icmp_seq=1 ttl=63 time=32.896 ms
84 bytes from 192.168.5.2 icmp_seq=2 ttl=63 time=31.692 ms
84 bytes from 192.168.5.2 icmp_seq=3 ttl=63 time=31.641 ms
84 bytes from 192.168.5.2 icmp_seq=4 ttl=63 time=29.698 ms
84 bytes from 192.168.5.2 icmp_seq=5 ttl=63 time=31.474 ms

VPCS> ping 192.168.7.2
84 bytes from 192.168.7.2 icmp_seq=1 ttl=61 time=91.767 ms
84 bytes from 192.168.7.2 icmp_seq=2 ttl=61 time=95.261 ms
84 bytes from 192.168.7.2 icmp_seq=3 ttl=61 time=93.508 ms
84 bytes from 192.168.7.2 icmp_seq=4 ttl=61 time=90.320 ms
84 bytes from 192.168.7.2 icmp_seq=5 ttl=61 time=94.331 ms

VPCS> ping 192.168.8.2
84 bytes from 192.168.8.2 icmp_seq=1 ttl=61 time=92.324 ms
84 bytes from 192.168.8.2 icmp_seq=2 ttl=61 time=92.310 ms
84 bytes from 192.168.8.2 icmp_seq=3 ttl=61 time=91.992 ms
84 bytes from 192.168.8.2 icmp_seq=4 ttl=61 time=92.500 ms
84 bytes from 192.168.8.2 icmp_seq=5 ttl=61 time=91.004 ms
```


192.168.7.2 Office-F2-O1-PC is pinging:

```
Office-F2-O1-PC
VPCS> ping 192.168.1.2
84 bytes from 192.168.1.2 icmp_seq=1 ttl=61 time=92.447 ms
84 bytes from 192.168.1.2 icmp_seq=2 ttl=61 time=93.183 ms
84 bytes from 192.168.1.2 icmp_seq=3 ttl=61 time=92.386 ms
84 bytes from 192.168.1.2 icmp_seq=4 ttl=61 time=92.603 ms
84 bytes from 192.168.1.2 icmp_seq=5 ttl=61 time=93.606 ms

VPCS> ping 192.168.2.2
84 bytes from 192.168.2.2 icmp_seq=1 ttl=60 time=123.391 ms
84 bytes from 192.168.2.2 icmp_seq=2 ttl=60 time=122.807 ms
84 bytes from 192.168.2.2 icmp_seq=3 ttl=60 time=124.324 ms
84 bytes from 192.168.2.2 icmp_seq=4 ttl=60 time=123.930 ms
84 bytes from 192.168.2.2 icmp_seq=5 ttl=60 time=122.318 ms

VPCS> ping 192.168.3.2
84 bytes from 192.168.3.2 icmp_seq=1 ttl=60 time=123.383 ms
84 bytes from 192.168.3.2 icmp_seq=2 ttl=60 time=122.906 ms
84 bytes from 192.168.3.2 icmp_seq=3 ttl=60 time=121.858 ms
84 bytes from 192.168.3.2 icmp_seq=4 ttl=60 time=123.945 ms
84 bytes from 192.168.3.2 icmp_seq=5 ttl=60 time=122.078 ms

VPCS> ping 192.168.4.2
84 bytes from 192.168.4.2 icmp_seq=1 ttl=60 time=123.642 ms
84 bytes from 192.168.4.2 icmp_seq=2 ttl=60 time=123.285 ms
84 bytes from 192.168.4.2 icmp_seq=3 ttl=60 time=121.926 ms
84 bytes from 192.168.4.2 icmp_seq=4 ttl=60 time=123.479 ms
84 bytes from 192.168.4.2 icmp_seq=5 ttl=60 time=120.949 ms
```

```
Office-F2-O1-PC
VPCS> ping 192.168.5.2
84 bytes from 192.168.5.2 icmp_seq=1 ttl=61 time=91.622 ms
84 bytes from 192.168.5.2 icmp_seq=2 ttl=61 time=93.285 ms
84 bytes from 192.168.5.2 icmp_seq=3 ttl=61 time=91.068 ms
84 bytes from 192.168.5.2 icmp_seq=4 ttl=61 time=93.309 ms
84 bytes from 192.168.5.2 icmp_seq=5 ttl=61 time=91.832 ms

VPCS> ping 192.168.6.2
84 bytes from 192.168.6.2 icmp_seq=1 ttl=61 time=93.297 ms
84 bytes from 192.168.6.2 icmp_seq=2 ttl=61 time=93.472 ms
84 bytes from 192.168.6.2 icmp_seq=3 ttl=61 time=92.060 ms
84 bytes from 192.168.6.2 icmp_seq=4 ttl=61 time=93.968 ms
84 bytes from 192.168.6.2 icmp_seq=5 ttl=61 time=91.047 ms

VPCS> ping 192.168.8.2
84 bytes from 192.168.8.2 icmp_seq=1 ttl=63 time=32.782 ms
84 bytes from 192.168.8.2 icmp_seq=2 ttl=63 time=31.439 ms
84 bytes from 192.168.8.2 icmp_seq=3 ttl=63 time=31.259 ms
84 bytes from 192.168.8.2 icmp_seq=4 ttl=63 time=30.352 ms
84 bytes from 192.168.8.2 icmp_seq=5 ttl=63 time=31.222 ms
```

192.168.8.2 Office-F2-O2-PC is pinging:

```
Office-F2-O2-PC
VPCS> ping 192.168.1.2
84 bytes from 192.168.1.2 icmp_seq=1 ttl=61 time=92.109 ms
84 bytes from 192.168.1.2 icmp_seq=2 ttl=61 time=93.353 ms
84 bytes from 192.168.1.2 icmp_seq=3 ttl=61 time=92.044 ms
84 bytes from 192.168.1.2 icmp_seq=4 ttl=61 time=94.226 ms
84 bytes from 192.168.1.2 icmp_seq=5 ttl=61 time=91.289 ms

VPCS> ping 192.168.2.2
84 bytes from 192.168.2.2 icmp_seq=1 ttl=60 time=122.792 ms
84 bytes from 192.168.2.2 icmp_seq=2 ttl=60 time=123.048 ms
84 bytes from 192.168.2.2 icmp_seq=3 ttl=60 time=124.266 ms
84 bytes from 192.168.2.2 icmp_seq=4 ttl=60 time=121.174 ms
84 bytes from 192.168.2.2 icmp_seq=5 ttl=60 time=124.347 ms

VPCS> ping 192.168.3.2
84 bytes from 192.168.3.2 icmp_seq=1 ttl=60 time=122.251 ms
84 bytes from 192.168.3.2 icmp_seq=2 ttl=60 time=123.726 ms
84 bytes from 192.168.3.2 icmp_seq=3 ttl=60 time=122.185 ms
84 bytes from 192.168.3.2 icmp_seq=4 ttl=60 time=124.045 ms
84 bytes from 192.168.3.2 icmp_seq=5 ttl=60 time=123.307 ms

VPCS> ping 192.168.4.2
84 bytes from 192.168.4.2 icmp_seq=1 ttl=60 time=122.667 ms
84 bytes from 192.168.4.2 icmp_seq=2 ttl=60 time=123.093 ms
84 bytes from 192.168.4.2 icmp_seq=3 ttl=60 time=123.716 ms
84 bytes from 192.168.4.2 icmp_seq=4 ttl=60 time=124.868 ms
84 bytes from 192.168.4.2 icmp_seq=5 ttl=60 time=122.479 ms
```

```
Office-F2-O2-PC
VPCS> ping 192.168.5.2
84 bytes from 192.168.5.2 icmp_seq=1 ttl=61 time=94.680 ms
84 bytes from 192.168.5.2 icmp_seq=2 ttl=61 time=93.608 ms
84 bytes from 192.168.5.2 icmp_seq=3 ttl=61 time=92.663 ms
84 bytes from 192.168.5.2 icmp_seq=4 ttl=61 time=93.288 ms
84 bytes from 192.168.5.2 icmp_seq=5 ttl=61 time=92.414 ms

VPCS> ping 192.168.6.2
84 bytes from 192.168.6.2 icmp_seq=1 ttl=61 time=92.128 ms
84 bytes from 192.168.6.2 icmp_seq=2 ttl=61 time=92.416 ms
84 bytes from 192.168.6.2 icmp_seq=3 ttl=61 time=92.557 ms
84 bytes from 192.168.6.2 icmp_seq=4 ttl=61 time=92.303 ms
84 bytes from 192.168.6.2 icmp_seq=5 ttl=61 time=91.713 ms

VPCS> ping 192.168.7.2
84 bytes from 192.168.7.2 icmp_seq=1 ttl=63 time=30.474 ms
84 bytes from 192.168.7.2 icmp_seq=2 ttl=63 time=30.661 ms
84 bytes from 192.168.7.2 icmp_seq=3 ttl=63 time=31.573 ms
84 bytes from 192.168.7.2 icmp_seq=4 ttl=63 time=30.504 ms
84 bytes from 192.168.7.2 icmp_seq=5 ttl=63 time=31.571 ms
```

Project Tasks

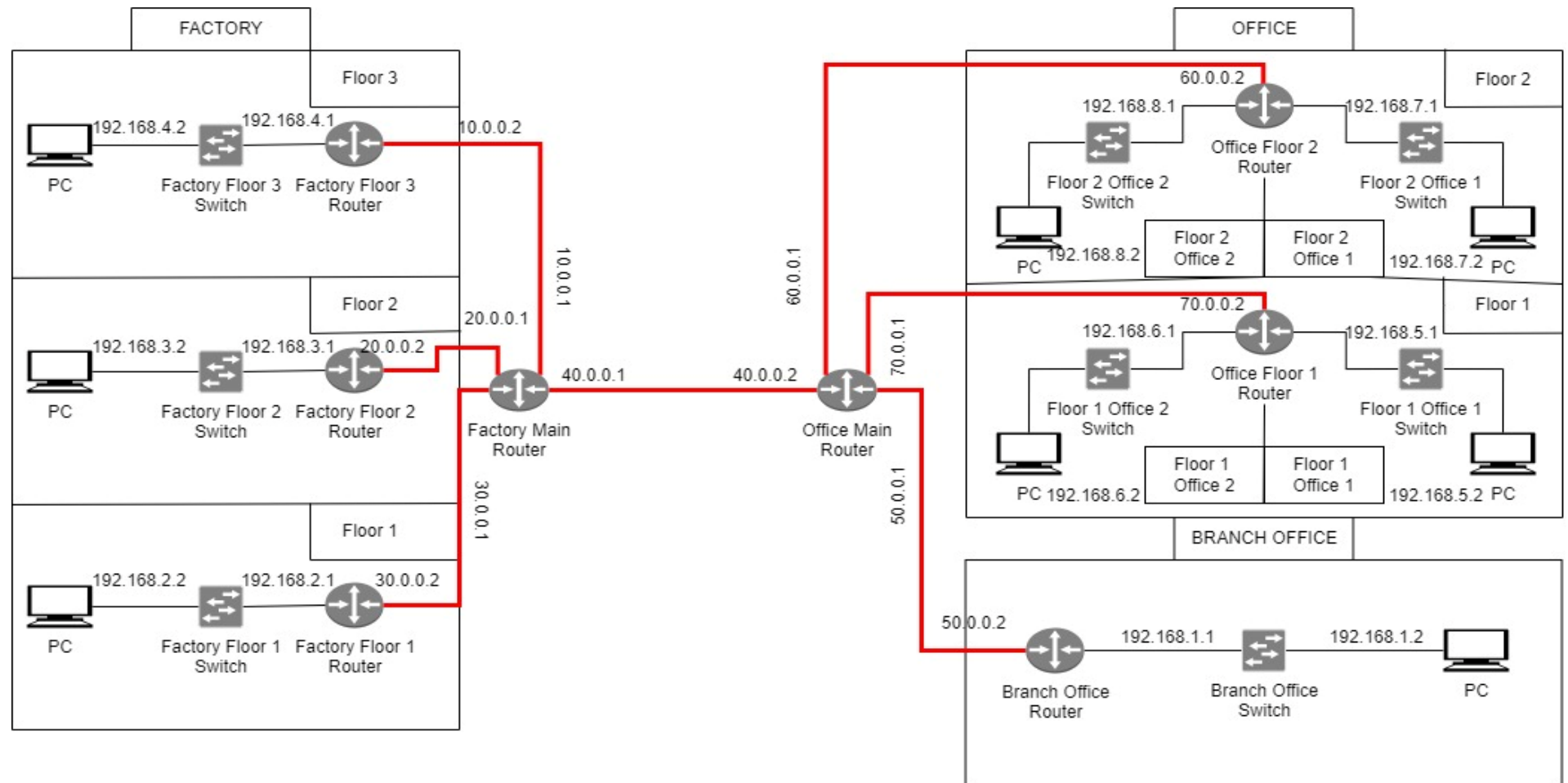
Design the network for a company... Assume that the following is true:

1. There are two buildings next to each other: A factory and an office building. There is also a remote branch office located in another town.
 - You can see the design in the Diagram section.
2. The main factory building has 3 floors; each floor needs at least 7 Ethernet ports to connect their devices. Use a router at each floor.
 - In the factory design, the main router was connected in series with the routers on each floor (Factory-F1-Router, Factory-F2-Router, Factory-F3-Router). Switch is connected to floor routers.

3. The office building has 2 floors. Each floor has 2 offices, and each office needs at least 2 Ethernet ports. Use a router at each floor.
 - In the office design, the main router was connected in series with the routers on each floor (Office-F1-Router, Office-F2-Router). Two switches is connected to floor routers for two offices at each floor.
4. The branch itself has a modem, a router, and needs 4 Ethernet ports for the personnel working there.
 - In the branch office design, the main router was connected in series with the main office router (Office-Main-Router) . Switch is connected to main branch office router (Branch-Office-Router).
5. The company also has a leased line from one of the offices, to the branch office, connected via a router, a leased line and a modem. (for our simulation, connect the branch to the office via two routers with serial ports, and have the two “talk” to each other via PPP or another protocol of your liking.. you can even ignore the modems, and assume that the two routers are connected directly to each other via that leased line).
 - All routers can communicate with each other. You can see the proof in the PINGS section.
 - All routers are connected to each other via serial ports.

APPENDIX-A

IP Addresses and Links (Diagram)



APPENDIX-B

IP Addresses and Links (GNS3)

