

# CSE421 Lab Project Summer 2021

## Topic 4: Dream World Group No:27

### Members:

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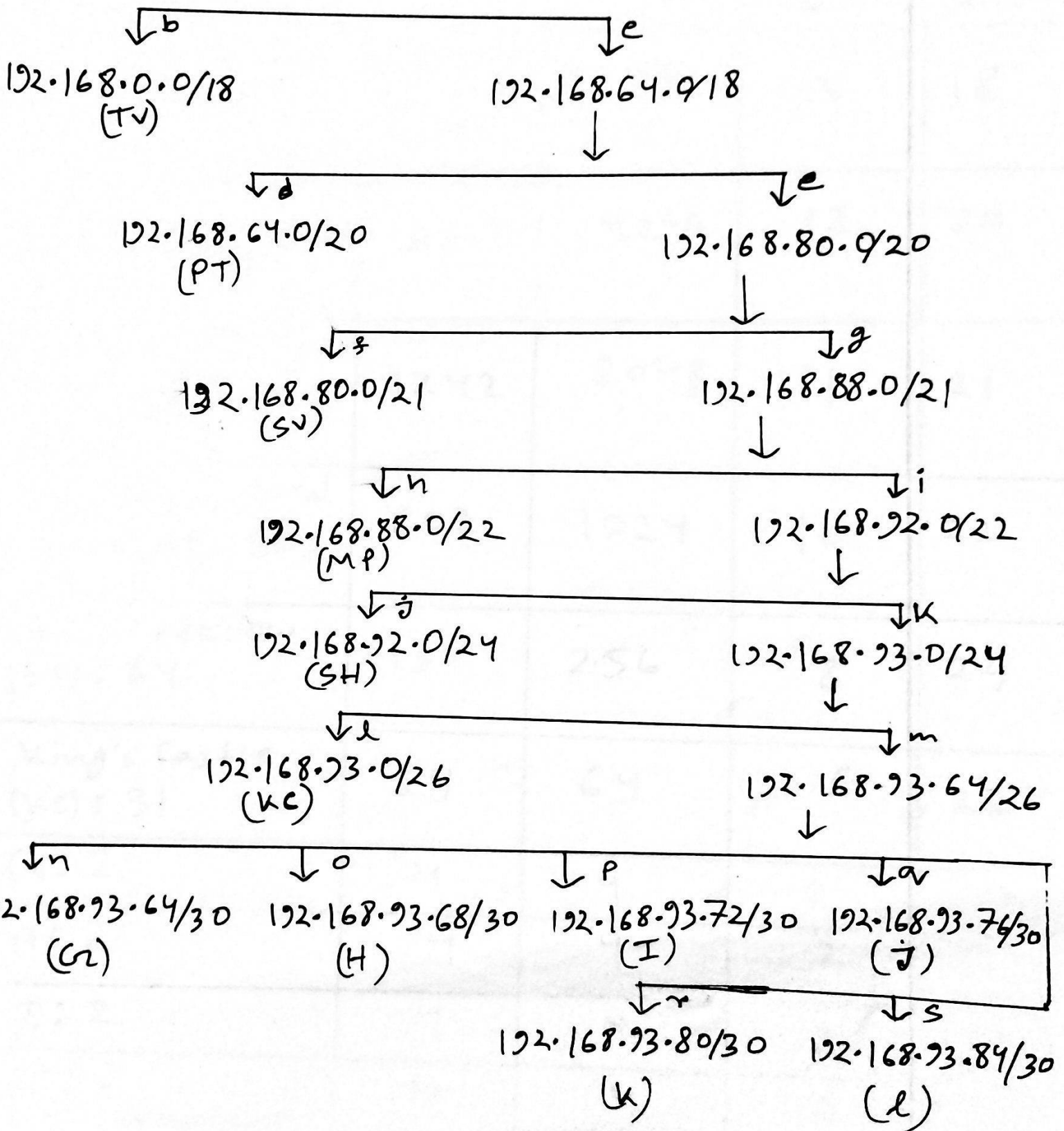
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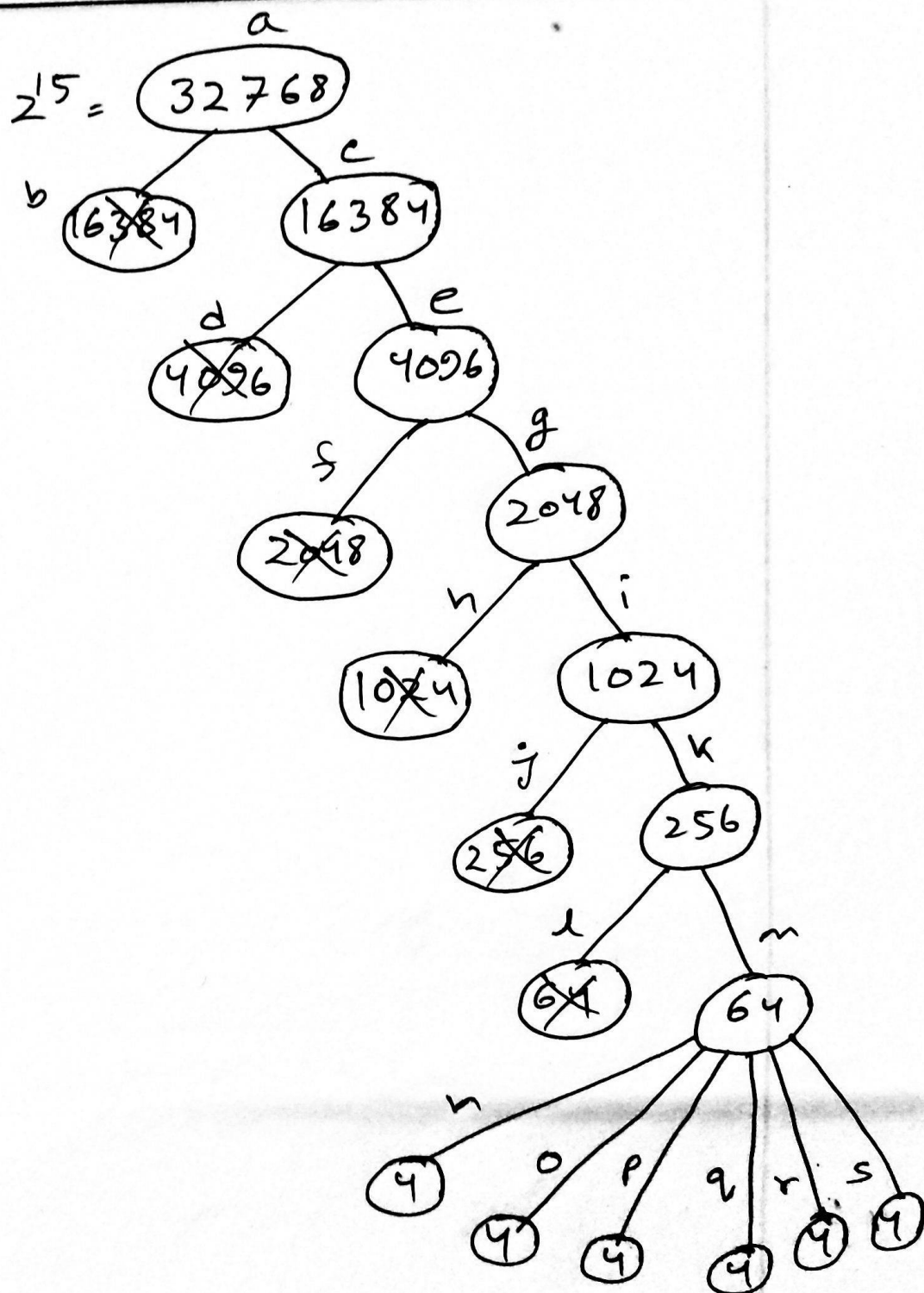
Network address = 192.168.0.0/17  
 S/M = 255.255.128.0/17

Host Bits = 32-17  
 = 15

Population	IP	Grave	Host Bits	Network Bits
Troll Village (TV): 6000	$(6000 \times 2) + 2$ = 12002	16384	14	18
Pirate Territory (PT): 1256	2514	4096	12	20
Squaw Valley (SV): 620	1242	2048	11	21
Manibar Pastoral Farm (MP): 300	602	1024	10	22
Sparkle's Hollow (SH): 64	130	256	8	24
King's Castle (KC): 31	64	64	6	26
G: 2	4	4	2	30
H: 2	4	4	2	30
I: 2	4	4	2	30
J: 2	4	4	2	30
K: 2	4	4	2	30
L: 2	4	4	2	30

(a)  
192.168.0.0/17





**List of Assumptions:**

•The requirement is to use the 3rd and 4th octet of the network address of the student ID who submitted the group information. Thus our network address should have been 192.168.6.0/17. However, when we are using /17 as subnet, we see it's network address is actually 192.168.0.0. Thus we use the network address as 192.168.0.0/17 not 192.168.6.0/17.

**Static:****Sparkles' Hollow Static Route through Port to Troll Village.**

Ip route 192.168.0.0 255.255.192.0 Se0/1/1(SH to TV)

**Troll Village Route through Port to Sparkles' Hollow**

Ip route 192.168.92.0 255.255.255.0 Se0/1/0(TV to SH)

**Sparkles' Hollow Static Route through Next Hop King's Castle ip**

route 192.168.93.72 255.255.255.252 192.168.93.70(SH to WAN-I) ip  
route 192.168.64.0 255.255.240.0 192.168.93.70(SH to PT) ip route  
192.168.93.64 255.255.255.252 192.168.93.70(SH to WAN-G)  
Ip route 192.168.93.0 255.255.255.192 192.168.93.70(SH to KC)  
Ip route 192.168.64.0 255.255.240.0 192.168.93.73 (TV to PT)  
Ip route 192.168.93.0 255.255.255.192 192.168.93.73(TV to KC)  
Ip route 192.168.93.64 255.255.255.252 192.168.93.73(TV to wan-G)  
Ip route 192.168.93.0 255.255.255.192 192.168.93.65(PT to KC)

**King's Castle Static Route through Next Hop Sparkles' Hollow**

Ip route 192.168.64.0 255.255.240.0 192.168.93.66(Kc to pt)  
Ip route 192.168.0.0 255.255.192.0 192.168.93.66(kc to tv)  
Ip route 192.168.92.0 255.255.255.0 192.168.93.66(Kc to SH)  
Ip route 192.168.93.72 255.255.255.252 192.168.93.66(kc to Wan-I)  
Ip route 192.168.93.68 255.255.255.252 192.168.93.66(Kc to wan-H)  
Ip route 192.168.0.0 255.255.192.0 192.168.93.74(pt to tv)  
Ip route 192.168.93.68 255.255.255.252 192.168.93.74(pt to wan-H)  
Ip route 192.168.92.0 255.255.255.0 192.168.93.74(pt to SH)

**Sh to mp**

Ip route 192.168.88.0 255.255.252.0 Se0/1/0

**Mp to sh**

Ip route 192.168.92.0 255.255.255.0 Se0/1/1

**Between Mp-TV (Float)**

Ip route 192.168.0.0 255.255.192.0 192.168.93.81 150 (MP to TV)  
Ip route 192.168.88.0 255.255.252.0 192.168.93.82 150 (TV to MP)

**DHCP Configuration:****MANIBOR Pastoral farm DHCP Configuration**

R\_SH(dhcp-config)#ip dhcp excluded-address 192.168.92.1 192.168.92.11  
R\_SH(config)#ip dhcp pool MP\_LAN  
R\_SH(dhcp-config)#network 192.168.88.0 255.255.252.0  
R\_SH(dhcp-config)#default-router 192.168.92.1  
R\_SH(dhcp-config)#dns-server 192.168.92.9

```
R_SH(dhcp-config)#exit Set helper  
address on MP router:  
R_MP(config)#interface fa0/0  
R_MP(config-if)#ip helper-address 192.168.93.86
```

### Dynamic:

#### SH

```
R_SH(config-router)#router rip  
R_SH(config-router)#version 2  
R_SH(config-router)#no auto-summary //Do not summarize the ips, otherwise it creates problem like  
overlapping  
R_SH(config-router)#network 192.168.92.0 //own network of the router side  
R_SH(config-router)#network 192.168.93.68(WAN H) //connected networks and WANs of router  
R_SH(config-router)#network 192.168.93.86(WAN L)  
R_SH(config-router)#network 192.0.0.0(ISP)  
R_SH(config-router)#passive-interface fa0/0 //hello packet er por j reply pabe,no need to send packets  
to this interface,this is the routers own interface  
R_SH(config-router)#end  
R_SH#copy run start //to save configuration
```

#### TV

```
R_TV(config-router)#router rip  
R_TV(config-router)#version 2  
R_TV(config-router)#no auto-summary  
R_TV(config-router)#network 192.168.0.0  
R_TV(config-router)#network 192.168.93.68  
R_TV(config-router)#network 192.168.93.76  
R_TV(config-router)#network 192.168.93.72  
R_TV(config-router)#passive-interface fa0/0  
R_TV(config-router)#end  
R_TV#copy run start
```

#### MP

```
R_MP(config-router)#router rip R_MP(config-router)#version 2  
R_MP(config-router)#no auto-summary  
R_MP(config-router)#network 192.168.88.0  
R_MP(config-router)#network 192.168.93.84  
R_MP(config-router)#passive-interface fa0/0  
R_MP(config-router)#end  
R_MP#copy run start
```

#### PT

```
R_PT(config)#router rip  
R_PT(config-router)#version 2  
R_PT(config-router)#no auto-summary  
R_PT(config-router)#network 192.168.64.0  
R_PT(config-router)#network 192.168.93.68  
R_PT(config-router)#network 192.168.93.72
```

```
R_PT(config-router)#passive-interface fa0/0
R_PT(config-router)#end
```

### KC

```
R_KC(config)#router rip
R_KC(config-router)#version 2
R_KC(config-router)#no auto-summary
R_KC(config-router)#network 192.168.93.0
R_KC(config-router)#network 192.168.93.64
R_KC(config-router)#passive-interface fa0/0
R_KC(config-router)#end
```

### IP ADDRESS TABLE:

Host	DEVICE	INTERFACE	IP ADDRESS	SUBNET MASK	DEFAULT GATEWAY	DNS SERVER
TV	R_TV(W)	Se0/1/0	192.168.93.70	255.255.255.252	N/A	N/A
	R_TV(W)	Se0/1/1	192.168.93.74	255.255.255.252	N/A	N/A
	R_TV(W)	Se0/0/0	192.168.93.77	255.255.255.252	N/A	N/A
	R_TV(W+F)	Se0/0/1	192.168.93.81	255.255.255.252	N/A	N/A
	R_TV	Fa0/0	192.168.0.1	255.255.192.0	N/A	N/A
	PC1_TV	Fa0	192.168.0.3	255.255.192.0	192.168.0.1	192.168.0.9
	PC2_TV	Fa0	192.168.0.5	255.255.192.0	192.168.0.1	192.168.0.9
PT	R_PT(W)	Se0/1/0	192.168.93.66	255.255.255.252	N/A	N/A
	R_PT(W)	Se0/1/1	192.168.93.73	255.255.255.252	N/A	N/A
	R_PT	Fa0/0	192.168.64.1	255.255.240.0	N/A	N/A
	PC1_PT	Fa0	192.168.64.3	255.255.240.0	192.168.64.1	192.168.0.9
	PC2_PT	Fa0	192.168.64.5	255.255.240.0	192.168.64.1	192.168.0.9
SV	R_SV(W)	Se0/0/1	192.168.93.78	255.255.255.252	N/A	N/A
	R_SV	Fa0/0	192.168.80.1	255.255.248.0	N/A	N/A
	PC1_SV	Fa0	192.168.80.3	255.255.248.0	192.168.80.1	192.168.0.9
	PC2_SV	Fa0	192.168.80.5	255.255.248.0	192.168.80.1	192.168.0.9
	R_MP(W)	Se0/1/1	192.168.93.85	255.255.255.252	N/A	N/A



MP	R_MP(W+F)	Se0/1/0	192.168.93.82	255.255.255.252	N/A	N/A
	R_MP	Fa0/0	192.168.88.1	255.255.252.0	192.168.88.1	192.168.0.9
	PC1_MP	Fa0	DHCP assigned	255.255.252.0	192.168.88.1	192.168.0.9
	PC2_MP	Fa0	DHCP assigned	255.255.252.0	N/A	N/A
SH	R_SH(W)	Se0/1/0	192.168.93.86	255.255.255.252	N/A	N/A
	R_SH(W)	Se0/1/1	192.168.93.69	255.255.255.252	N/A	N/A
	R_SH(I)	Se0/0/0	192.0.0.2	255.255.255.252	N/A	N/A
	R_SH	Fa0/0	192.168.92.1	255.255.255.0	N/A	N/A

### IP ADDRESS TABLE:

	PC1_SH	Fa0	192.168.92.3	255.255.255.0	192.168.92.1	192.168.0.9
	PC2_SH	Fa0	192.168.92.5	255.255.255.0	192.168.92.1	192.168.0.9
	DNS-Server	Fa0	192.168.92.9	255.255.255.0	192.168.92.1	192.168.0.9
	Web-Server	Fa0	192.168.92.11	255.255.255.0	192.168.92.1	192.168.0.9
	DHCP-Server	Fa0	192.168.92.7	255.255.255.0	192.168.92.1	192.168.0.9
KC	R_KC(W)	Se0/1/0	192.168.93.65	255.255.255.252	N/A	N/A
	R_KC	Fa0/0	192.168.93.1	255.255.255.192	N/A	N/A
	PC1_KC	Fa0	192.168.93.3	255.255.255.192	192.168.93.65	192.168.0.9
	PC2_KC	Fa0	192.168.93.5	255.255.255.192	192.168.93.65	192.168.0.9
	ISP	Se0/1/0	192.0.0.1	255.255.0.0	192.168.92.1	N/A