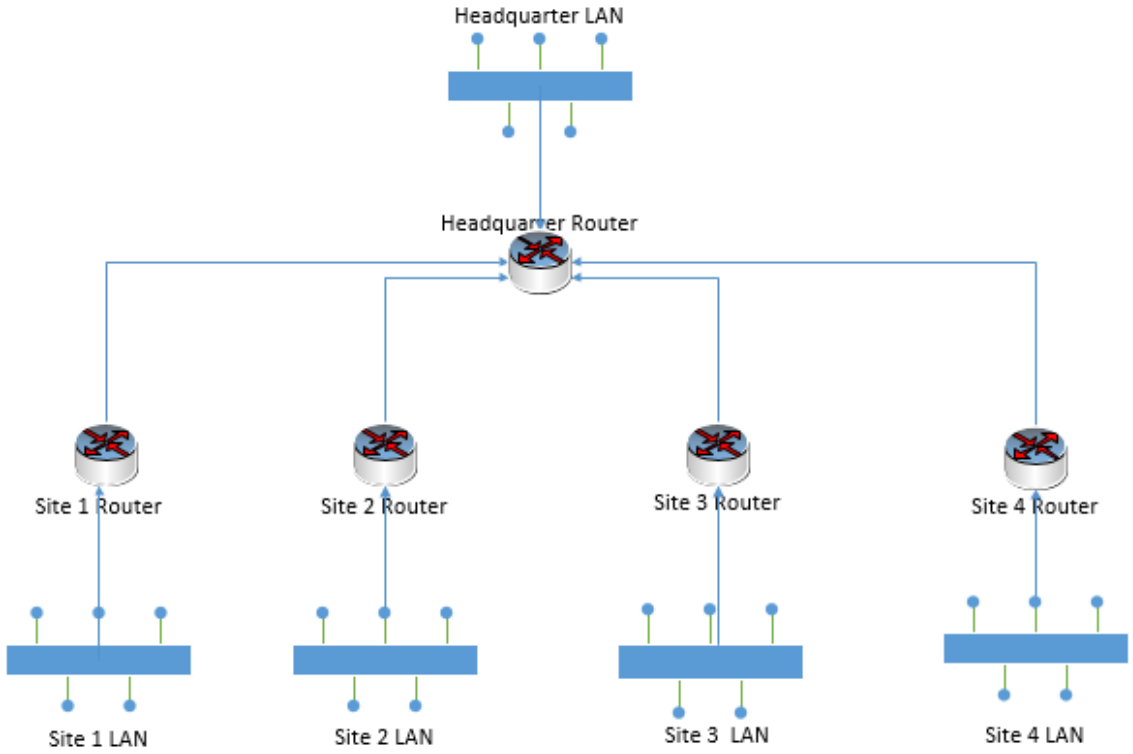
Assignment 2

Name : Gandhi Pritesh

1) Topology created in Microsoft Visio :

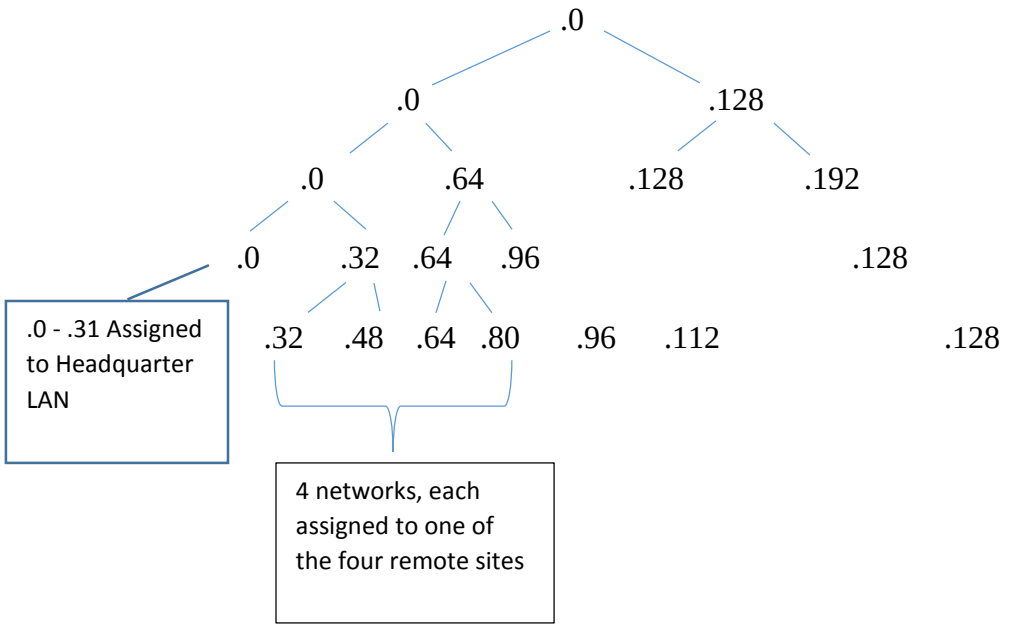


2) Brief Description of what topic or technology you are concentrating on within this journal.

=>

- The main topic in this assignment is VLSM (Variable Length Subnet Mask).
- As we know while assigning IP address, lot of IP gets wasted because of unnecessary extra IP addresses given to a network as they are calculated on the basis of the maximum IP address required in the network. This wastage of IP address cannot be stopped , however, it can be reduced using VLSM.
- In VLSM, the IP address are divided into the subnets so that the requirement will be fulfilled & the wastage of IP addresses could be minimized.
- As per the given question, Company VARIABLE is a manufacturer of robotic birds used for U.S. military reconnaissance missions. VARIABLE is a growing company and needs to utilize their IP Addresses in the most efficient way possible. They are using the RFC1918 network address of 192.168.37.0/24. VARIABLE has one headquarters site with 15 employees. They also have four other remote sites each with 10 employees.

- Here if we follow the traditional method then the network address 192.168.37.0/24 will be divided into 8 subnets, each will have 32 IP addresses as the maximum required usable host addresses are 15 at headquarter. Other 4 sites need only 10 host addresses each. In this case, the remaining IP addresses will be waste.
- On the other hand, if we go with VLSM method, then we can obtain 1 subnet of 32 IP addresses for the headquarter & 4 subnets of 16 IP addresses for 4 sites. This will save 16 IP addresses at each site. So Total = 16 x 4 = 64 IP addresses will be saved which is huge saving.
- Calculation of subnets using VLSM is done as follow:



Subnets	Needed Hosts	Network Address	Mask	Assignable Range	Broadcast
Headquarter	15	192.168.37.0	255.255.255.224	192.168.37.1 - 192.168.37.30	192.168.37.31
Site 1	10	192.168.37.32	255.255.255.240	192.168.37.33 - 192.168.37.46	192.168.37.47
Site 2	10	192.168.37.48	255.255.255.240	192.168.37.49 - 192.168.37.62	192.168.37.63
Site 3	10	192.168.37.64	255.255.255.240	192.168.37.65 - 192.168.37.78	192.168.37.79
Site 4	10	192.168.37.80	255.255.255.240	192.168.37.81 - 192.168.37.94	192.168.37.95