PROJECT 2

TEJU & TOSIN Tech company is a fast-growing company in Lagos with more than 1 million customers globally.

The company deals with provided security for other companies. The company is intended open a branch in Abuja. the company requires young IT graduate to design the network for the branch. The network is intended to operate separately from the network.

Being a small network the company has the following requirement during implementation.

1. One router and one switch to be used.
2. Four department [ Admin/ IT, Finace/HR, PublicAffairs/Marketing and Customer/Reception].
3. Each department is required to be in different VLANS.
4. Each department is required to have wireless network for the user
5. Host devices in the network are required to obtain IPV4 address automatically.
6. Device in all the departments are required to communicate with each other.

Assume the ISP gave out a base network Is 192.168.1.0.

SUBNETTING

Network base= 192.168.1.0

Number of subnets= 4

Formular for subnetting= 2^n=4 [number of subnets]

N=2 [number of borrowed bits]

192.168.1.0= 255.255.255.0

11111111.11111111.11111111.11000000

New subnet mask= 192.168.1.192

SUBNET MASK BLOCK SIZE

128 128

192 64

224 32

240 16

248 8

252 4

254 2

255 1

BLOCK SIZE= 64

1st subnet

subnet mask= 192.168.1.192

network id= 192.168.1.0

broadcat id= 192.168.1.63

host range= 192.169.1.1-192.168.1.62

2nd subnet

subnet mask= 192.168.1.192

network id= 192.168.1.64

broadcast id= 192.168.1.127

host range= 192.168.1.65-192.168.1.126

3rd subnet

subnet mask= 192.168.1.192

network id= 192.168.1.128

broadcast id= 192.168.1.191

host range= 192.168.1.129-192.168.1.190

4th subnet

Subnet mask= 255.255.255.192

Network id= 192.168.1.192

Broadcast id=192.168.1.254

host range= 192.168.1.193-192.168.1.253