Project : Office Network

XYZ company is a fast-growing company in Eastern Australia with more than 2 million customers globally. The company deals with selling and buying of food items, which are basically operated from the headquarters. The company is intending to open a branch near the local village Bonalbo. Thus, the company requires young IT graduates to design the network for the branch. The network is intended to operate separately from the HQ network.

Being a small network, the company has the following requirements during implementation;

a) One router and one switch to be used (all CISCO products).
b) 3 departments (Admin/IT, Finance/HR and Customer service/Reception)
c) Each department is required to be in different VLANS.
d) Each department is required to have wireless network for the users.
e) Host devices in the network are required to obtain IPv4 address automatically.
f) Devices in all the departments are required to communicate with each other.

Assume the ISP gave out a base network of 192.168.1.0, you as the young network engineer who has been hired, design and implement a network considering the above requirements.

VLANS and SUBNETS

Basic Network : 192.168.1.0

no of subnets : 3

11111111.11111111.11111111.11000000

Newly added Network bits : 2
mask : 24 + 2 = 26
Total number of Subnets : 2^2 = 4

Host bits : 6
Total Number of Hosts per Subnet :2^6 = 64
Total Valid Hosts per Subnet : 62

Subnet Mask : 255.255.255.192

1st Subnet

Network ID	:	192.168.1.0/26	255.255.255.192
First IP	:	192.168.1.1	
Last IP	:	192.168.1.62	
Broadcast IP	:	192.168.1.63	

2nd Subnet

Network ID	:	192.168.1.64/26	255.255.255.192
First IP	:	192.168.1.65	
Last IP	:	192.168.1.126	
Broadcast IP	:	192.168.1.127	

3rd Subnet

Network ID	:	192.168.1.128/26	255.255.255.192
First IP	:	192.168.1.129	
Last IP	:	192.168.1.254	
Broadcast IP	:	192.168.1.255	