The objective of this lab to create 3 departments, each department should have separate VLANS. Host devices in the network required to obtain IPv4 address automatically.   
Finally the communication should be happen between departments.  
The IP is 192.168.1.0   
Base network = 192.168.1.0  
Number of subnets required is 3.  
2^n = Number of subnets or greater than that.  
In this case n=2 , i.e. n is the number of borrowed bits  
2^2= 4   
Subnet mask for class C network id 255.255.255.0  
In binary 11111111 . 11111111. 11111111. 00000000  
  
We know that n=2, so 2 bits need to borrow from host  
11111111 . 11111111. 11111111. 11000000  
  
Now subnet mask will be 255.255.255.192   
In the 4th octet it 192 therefore block size is 64  
  
1st subnet :  
Network id: 192.168.1.0  
Broadcast id: 192.168.1.63  
Valid Host Ranges: 192.168.1.1 to 192.168.1.64

2nd subnet :  
Network id: 192.168.1.64  
Broadcast id: 192.168.1.127  
Valid Host Ranges: 192.168.1.65 to 192.168.1.126  
  
3rd subnet :  
Network id: 192.168.1.128  
Broadcast id: 192.168.1.191  
Valid Host Ranges: 192.168.1.129 to 192.168.1.190  
  
Creating and configuring VLANs for each department.  
Enter into configuration mode in the switch   
Switch(config)**# interface range fastEthernet0/2-4  
 #switchport mode access   
 #switchport access vlan 10**Similarly configured vlan 20 and 30 on respective fastEthernet port for Finance and Customer departments.

Configuring the port connected to router as trunk, so that it allow every VLAN traffic pass through it.  
**Switch(config)# interface fastEthernet 0/1  
 #switchport mode trunk**

Configuring inter-vlan routingon the router.  
From a single physical interface creating 3 sub interfaces i.e each for a vlan. Creating on Gig0/0 interface.  
  
Creating sub interface for vlan 10 i.e. Admin department   
Entering into configuring mode in the router   
**Router(config)# interface gigabitEthernet 0/0  
 #encapsulation dot1Q 10  
 #ip address 192.168.1.1 255.255.255.192**   
Here ip address is taken from valid host range of 1st subnet   
  
Similarly for 2nd and 3rd subnet

All the devices in the department should obtain IPv4 address automatically. For that configured DHCP on the router. In cisco devices by default it is enabled.  
  
Creating DHCP pool for Admin department

Configured Wireless Access point with SSID and WPA2-PSR password on each department.  
  
Entering into configuring mode in the router   
**Router(config)#ip dhcp pool Admin  
 #network 192.168.1.0 255.255.255.192  
 #default-router 192.168.1.1  
 #dns-server 192.168.1.1  
 #domain-name admin.com**

Similarly create dhcp pool for Finance and Customer departments.  
All the devices in each department are assigned with ip address and communication established successfully.