# Project #1 Case Study and Requirements

Design a network in Cisco Packet Tracer to connects ACCOUNTS and DELIVERY departments through the following:

* Each department should contain at least two PCs and 1 printer.
* Appropriate number of switches and routers should be used in the network.
* Using the given network 192.168.40.0, all inerfaces should be configured with correct IP addresses, subnet mask and gateways.
* All devices in the network should be connected using appropriate cables.
* Test communication between devices in both ACCOUNTS and DELIVERY departments.

## Technologies Implemented

* Creating a Simple Network using a Router and Access Layer Switch
* Connecting Networking devices with Correct cabling
* Connecting two Networks using a Router
* Subnetting and IP addressing
* Assigning IP Addresses to Router’s interfaces
* Static IP Address allocation to Host Devices
* Test and Verifying Network Communication

Network address = 192.168.40.0

Number of subnets = 2

2^n=Number of subnets 🡺 2^n=2

**N=1 (most important element in subnetting)**

**11111111 11111111 11111111 10000000**

**255.255.255.128🡺subnet mask**

First Subnet

Subnet Mask = 255.255.255.128

Network ID = 192.168.40.0

Range of Valid Host = 192.168.40.1 – 192.168.40.126

Broadcast ID = 192.168.40.127

Second Subnet

Subnet Mast = 255.255.255.128

Network ID = 192.168.40.128

Range of Valid Host = 192.168.40.129-192.168.40.254

Broadcast ID = 192.168.40.255