Lab4- Pear to Pear Two PC Network:-

Objective
1- Making a pear to pear two PC network.
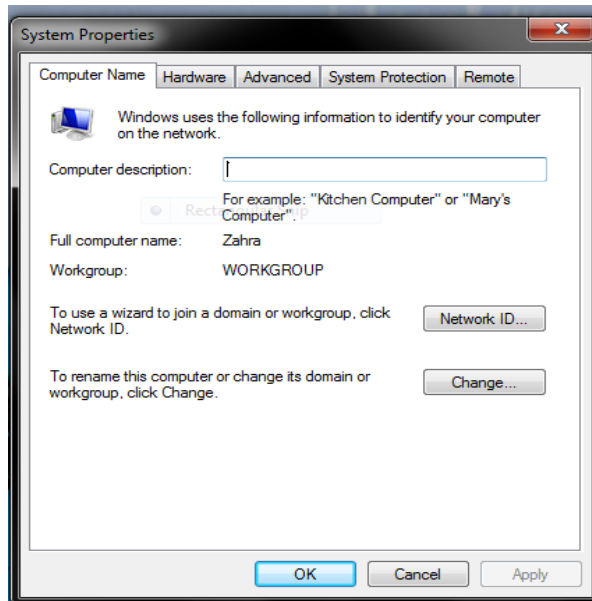2- Testing the link between these PCs using ping command.

Requirements
1- Two PCs with windows 7.
2- Two NICs (in this lab you will use Ethernet NICs)
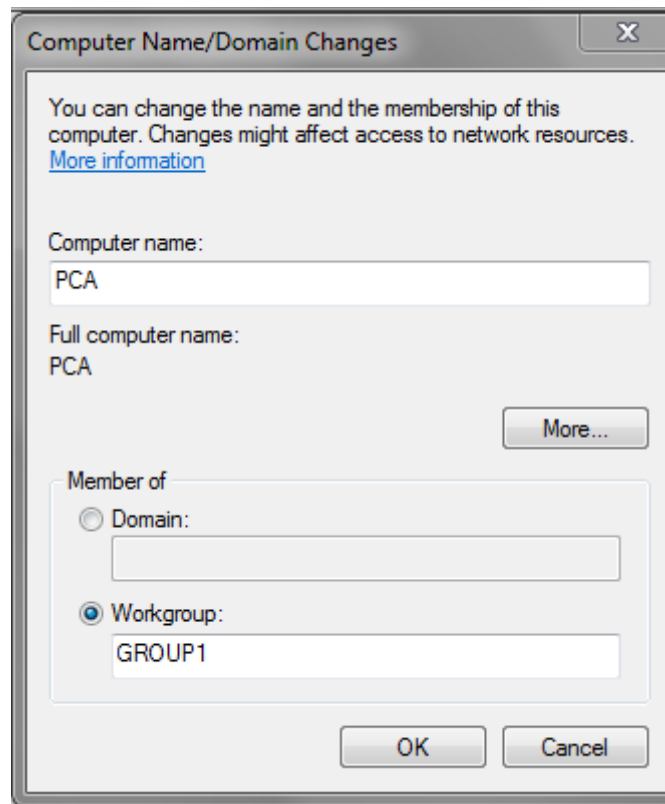3- Cross cat5e UTP cable

Background
In this lab you will made a simple LAN by connecting two PCs each of them has Windows 7 as the OS and an Ethernet NIC. So this is the simplest network to be made where the additional HW you need is only the NICs and the cross cable. In addition to the cables and NICs which covers the requirements of the 1st and the 2nd layers of the OSI reference model you also have to set the IP of NICs for the two PCs which lies in the 3rd layer of the OSI reference model. Each of the two PCs is an equal and functions as both a client and a server, thus the network we establish is pear to pear network.

Procedure:-
1- Install (if not installed) a NIC in each PC.
2- use (or made) a cross UTP cat5e cable with a proper length to connect the two PCs.
3- Name one PC as "PCA" and the other PC as "PCB" and use the same workgroup for the two PCs named "Group1" using the following procedure:-
   a. On the desktop right click on <u>My Computer</u> icon then chose <u>Properties</u> from the menu. Then choose <u>change settings</u>. And this window will appear.
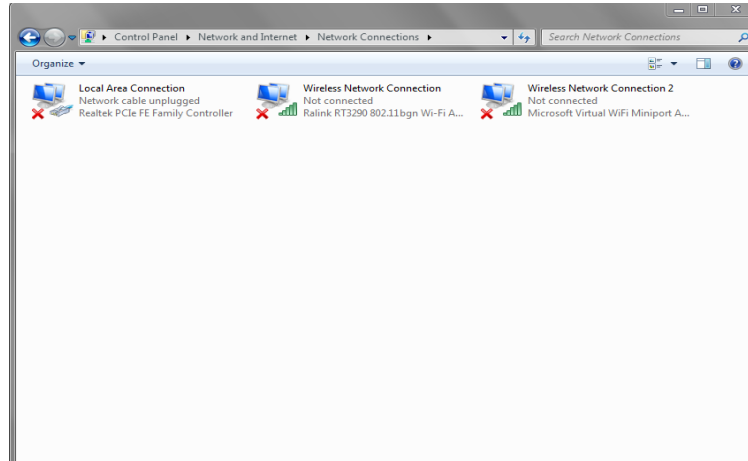
b. Change the computer name to (PCA on a PC and PCB on the other PC) and (the Workgroup to Group1 on both PCs).
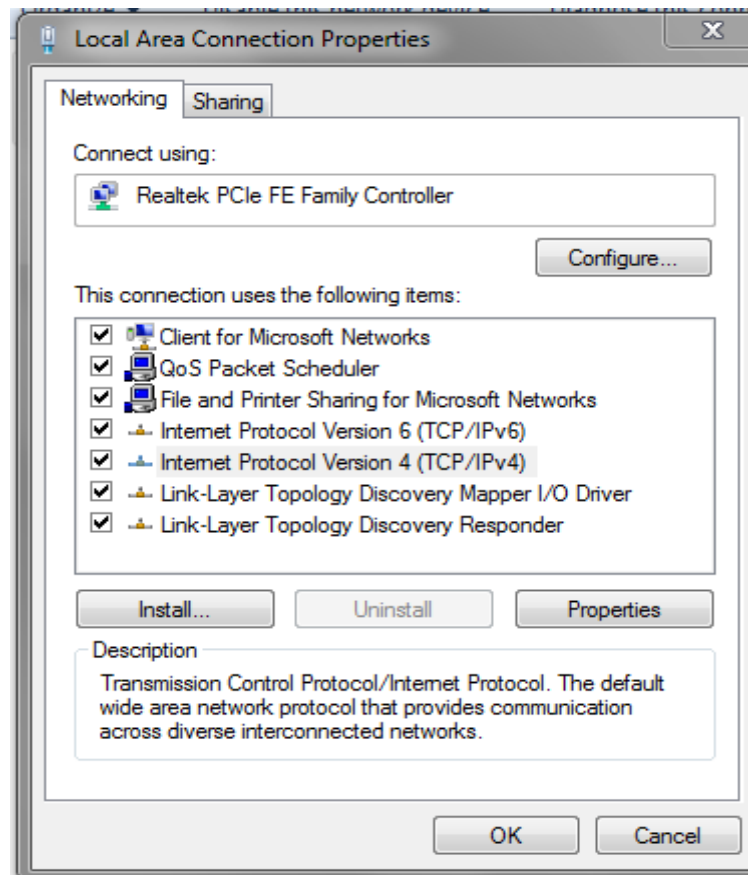

4-Now you have to set IP address, subnet mask of each NIC, follow the following steps.

a- On the desktop right click on <u>network and sharing center</u> then chose <u>change adapter settings</u> from the menu. this window will appear.
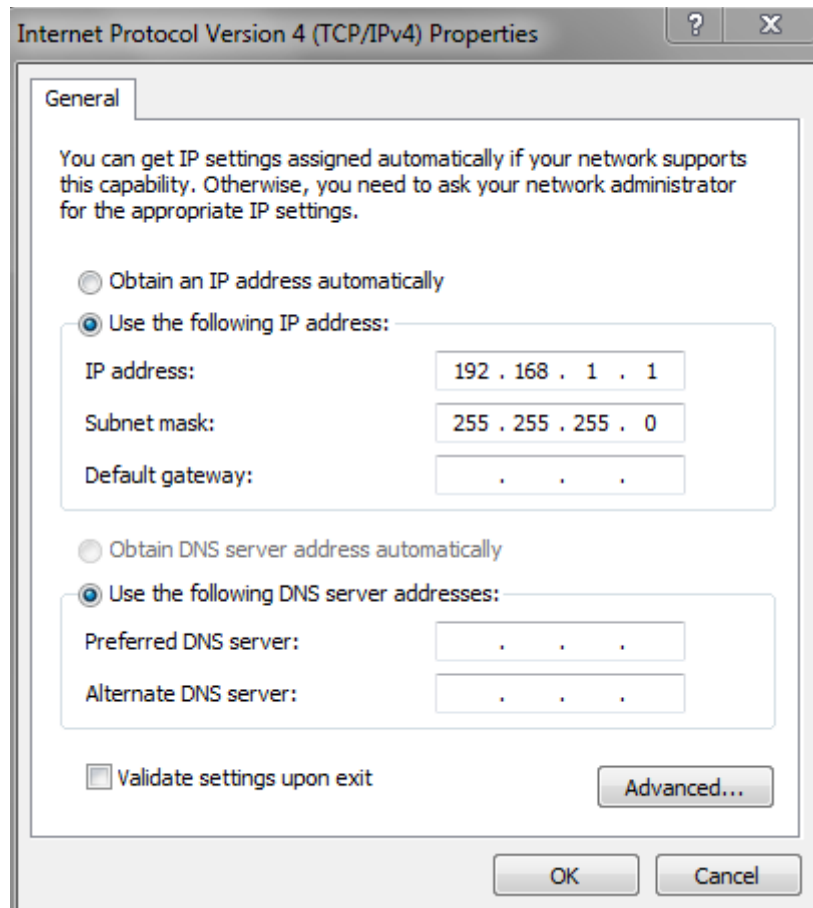

b- In the <u>Local Area Connection Properties</u> Window double click on the <u>Internet Protocol version4(TCP/IPv4)</u> .

c- c-then click properties.this window will appear. In the Internet Protocol (TCP/IP) Properties window select <u>" Use the following IP</u>

address" radio button then use the following **IP address** and **subnet mask.**

5-Test connectivity between the two PCs using ping DOS command as follows

  a-open the DOS command prompt from the start menu as follows
    Start > All programs > Accessories > Command prompt.

  b-in the Command Prompt screen appears type

  ping^[IP address of the destination]

  So   in PCA type: ping 192.168.1.2
  And in PCB type: ping 192.168.1.1

  The result you get in case of successful connection looks like the One shown in the figure below.

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Command Prompt                                          _ □ ×

Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

C:\Documents and Settings\Owner>ping 192.168.1.1

Pinging 192.168.1.1 with 32 bytes of data:

Reply from 192.168.1.1: bytes=32 time<1ms TTL=150
Reply from 192.168.1.1: bytes=32 time<1ms TTL=150
Reply from 192.168.1.1: bytes=32 time<1ms TTL=150
Reply from 192.168.1.1: bytes=32 time<1ms TTL=150

Ping statistics for 192.168.1.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\Documents and Settings\Owner>
```

Discussion:-

1- Suggest another method to reach Network Connections Window.
2- What is the largest number you can use in each section of the IP address? And why?
3- Why straight forward cable cannot be used directly to connect two PCs?