Ex: 10

SUBNETTING

Simulate the concept of subnetting using socket programming.

Server should perform the following:

1. Assume that Server acts a network router.
2. Input the network address and the number of subnet.
3. Identify the class of the IP address.
4. Based on the number of subnet and the class of network address find the subnet mask. (automatic computation)
5. Enter the IP address of destination and 16 bit data.
6. Based on the subnet mask, find the destination subnet.(automatic computation)
7. Transmit the Data only to the proper subnet in the given format

   Destination IP || Data

Client should do the following:

1. Assume that Client acts as a subnet router.
2. Display the subnet id(Subnet 1, Subnet 2, Subnet 3)
3. Enter the subnet address for each subnet separately.(manual calculation of subnet)
4. Only the proper subnet receives the data ie. Destination IP || Data from the server

Try this for different number subnets (5, 6, etc) and also for different class (A, B, C)

Sample Input and Output

Server

Enter the network address: 129.6.0.0

Enter the number of subnets: 3

Calculating subnet mask……..

The subnet mask is 255.255.192.0

Enter the destination IP address: 129.6.122.5

Enter 16 bit data: 1111000011110000

Calculating Subnet address

The subnet address is: 129.6.64.0

Transmitting Packet to 129.6.64.0

129.6.122.5 || 1111000011110000

Client 1

Subnet 1

Enter the subnet address : 129.6.0.0

Trying to connect with server……..

Connection established.

Client 2

Subnet 2

Enter the subnet address : 129.6.64.0

Trying to connect with server……..

Connection established.

Received data 129.6.122.5 || 1111000011110000

Client 3

Subnet 3

Enter the subnet address : 129.6.128.0

Trying to connect with server……..

Connection established.