EX.NO 4. Simulation of DNS using UDP sockets.

Aim : Write java program Simulation of DNS using UDP Sockets

Algorithm

1.Start the program.

2.Get the frame size from the user

3.To create the frame based on the user request.

4.To send frames to server from the client side.

5.If your frames reach the server it will send ACK signal to client otherwise it will send NACK signal to client.

6.Stop the program

Program

UDP DNS Server

```
import java.io.*;
import java.net.*;
public class dnsserver
{
        private static int indexOf(String[] array, String str)
        {
                str = str.trim();
                for (int i=0; i < array.length; i++)
                {
                        if (array[i].equals(str)) return i;
                }
                return -1;
        }

        public static void main(String arg[])throws IOException
        {

                String[] hosts = {"zoho.com", "gmail.com","google.com", "facebook.com"};
```

```
String[] ip = {"172.28.251.59", "172.217.11.5","172.217.11.14",
"31.13.71.36"}; System.out.println("Press Ctrl + C to Quit");

while (true)
{
DatagramSocket serversocket=new DatagramSocket(1362);
byte[] senddata = new byte[1021];
byte[] receivedata = new byte[1021];
DatagramPacket recvpack = new DatagramPacket(receivedata,
receivedata.length);
serversocket.receive(recvpack);
String sen = new String(recvpack.getData());
InetAddress ipaddress = recvpack.getAddress();
int port = recvpack.getPort();
String capsent;
System.out.println("Request for host " + sen);
if(indexOf (hosts, sen) != -1)
capsent = ip[indexOf (hosts, sen)];
else
capsent = "Host Not Found"; senddata = capsent.getBytes();
DatagramPacket pack = new DatagramPacket (senddata,
senddata.length,ipaddress,port);
serversocket.send(pack);
serversocket.close();
}
}
}
```

//UDP DNS Client –

```
import java.io.*;
import java.net.*;
public class dnsclient
{
```

```
	public static void main(String args[])throws IOException
	{
		BufferedReader br = new BufferedReader(new
InputStreamReader(System.in));
		DatagramSocket clientsocket = new DatagramSocket();
		InetAddress ipaddress;
		if (args.length == 0)
			ipaddress = InetAddress.getLocalHost();
		else
			ipaddress = InetAddress.getByName(args[0]);
		byte[] senddata = new byte[1024];
		byte[] receivedata = new byte[1024];
		int portaddr = 1362;
		System.out.print("Enter the hostname : ");
		String sentence = br.readLine();
		senddata = sentence.getBytes();
		DatagramPacket pack = new DatagramPacket(senddata,senddata.length,
ipaddress,portaddr);
		clientsocket.send(pack);
		DatagramPacket recvpack =new
DatagramPacket(receivedata,receivedata.length);
		clientsocket.receive(recvpack);
		String modified = new String(recvpack.getData());
		System.out.println("IP Address: " + modified);
		clientsocket.close();
	}
}
```

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T Server

```
E:\nwlab>java dnsserver
Press Ctrl + C to Quit
Request for host google.com
Request for host flipkart.com
```

Client

E:\nwlab>java dnsclient

Enter the hostname : google.com

IP Address: 172.217.11.14

E:\nwlab>java dnsclient

Enter the hostname : flipkart.com

IP Address: Host Not Found

E:\nwlab>

Viva Questions:

1. What is DNS?
2. What is the port number of DNS?
3. What is the main purpose of DNS server?
4. What is forward lookup?
5. What is reverse lookup?
6. What are the different types of DNS Server?
7. What are the different types of Resource Records in bind?
8. What are the different types of Resource Records in bind?
9. What is the main use of port number in DNS?
10. Mention some real time applications of DNS

Result:

Thus the DNS application program was executed.