**ARP PROTOCOL**

**SERVER SIDE:**

import java.io.\*; //import io package

import java.net.\*; //import net package

class arp\_server

{

public static void main(String[]args)throws Exception

{

System.out.println("\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*");

System.out.println("\nName:R.SRIDEVI");

System.out.println("\nRoll.No:20UIT021");

System.out.println("\nEx.Name:Simulation of ARP and RARP Protocols");

System.out.println("\nEx.No:11");

System.out.println("\nDate:25.08.22");

System.out.println("\n\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*");

//create the server and accept

ServerSocket server=new ServerSocket(3008);

Socket temp=server.accept();

//Store the IP address and MAC address

String ip[]={"167.180.0.80","134.23.0.80","156.89.0.12","121.76.0.84","155.54.0.76"};

String mac[]= {"23:12:56:90:78:12","34:90:68:23:15:11","56:12:99:55:43:77","66:87:34:11:10:88","64:99:32:56:92:15"};

//Read the IP Address

String ipAddress;

DataInputStream receive = new DataInputStream(temp.getInputStream());

DataOutputStream send=new DataOutputStream(temp.getOutputStream());

ipAddress=receive.readUTF();

System.out.println("The IP address: "+ipAddress);

// Map the IP address and MAC address

int flag=0;

int i;

for(i=0;i<5;i++)

{

if(ipAddress.equals(ip[i]))

{

send.writeUTF(mac[i]);

System.out.println("The MAC Address:"+mac[i]);

flag=1;

break;

}

}

if(flag==0)

{

send.writeUTF("does not match");

}

}

}

**CLIENT SIDE:**

import java.io.\*; //import io package

import java.net.\*; //import net package

class arp\_client

{

public static void main(String[]args)throws Exception

{

System.out.println("\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*");

System.out.println("\nName:R.SRIDEVI");

System.out.println("\nRoll.No:20UIT021");

System.out.println("\nEx.Name:Simulation of ARP and RARP Protocols");

System.out.println("\nEx.No:11");

System.out.println("\nDate:25.08.22");

System.out.println("\n\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*");

// create socket

Socket client=new Socket("localhost",3008);

DataInputStream input = new DataInputStream(System.in);

DataOutputStream send = new DataOutputStream(client.getOutputStream());

DataInputStream receive= new DataInputStream(client.getInputStream());

//get IP address

String data;

System.out.println("Enter the IP address:");

data=input.readLine();

//send Ip address to Server

send.writeUTF(data);

//Server returns the MAC address

String receivedMsg=receive.readUTF();

System.out.println("Received MAC address is"+receivedMsg);

client.close();

}

}

**OUTPUT:**

[itstudent@a4it118 ~]$ javac arp\_client.java

Note: arp\_client.java uses or overrides a deprecated API.

Note: Recompile with -Xlint:deprecation for details.

[itstudent@a4it118 ~]$ java arp\_client

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

Name:R.SRIDEVI

Roll.No:20UIT021

Ex.Name:Simulation of ARP and RARP Protocols

Ex.No:11

Date:25.08.22

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

Enter the IP address:

167.180.0.80

Received MAC address is23:12:56:90:78:12

[itstudent@a4it118 ~]$

[itstudent@a4it118 ~]$ javac arp\_server.java

[itstudent@a4it118 ~]$ java arp\_server

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

Name:R.SRIDEVI

Roll.No:20UIT021

Ex.Name:Simulation of ARP and RARP Protocols

Ex.No:11

Date:25.08.22

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

IP address received from the client is 167.180.0.80

The MAC address send to the client is23:12:56:90:78:12

[itstudent@a4it118 ~]$

**RARP PROTOCOL**

**SERVER SIDE:**

import java.net.\*; //import net package

import java.io.\*; //import io package

class rarpserver //class definition

{

public static void main(String args[]) throws Exception //main method

{

System.out.println("\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*");

System.out.println("IT1581 - Computer Networks Laboratory");

System.out.println("Roll Number : 20UIT021");

System.out.println("Name : R.SRIDEVI");

System.out.println("Ex. No. : 11");

System.out.println("Ex. Name : Simulation of ARP and RARP protocols");

System.out.println("Date : 25.08.2022");

System.out.println("\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*");

System.out.println("\t \t SERVER SIDE");

//Create serversocket

ServerSocket server = new ServerSocket(3192);

Socket temp = server.accept();

String ip[] ={"192.168.0.152","182.167.0.153","134.20.0.172","192.0.678.123","192.167.0.143"};

String mac[] ={"21:25:74:67:89:01","22:29:02:03:09:05","36:87:12:56:65:88","54:23:45:76:98:09","90:48:93:22:

34:56"};

DataOutputStream send = new DataOutputStream(temp.getOutputStream());

DataInputStream receive = new DataInputStream(temp.getInputStream());

//Read the MAC address sent by the client

String MACAddress = receive.readUTF();

int i,flag=0;

for(i=0;i<5;i++)

{

if(MACAddress.equals(mac[i]))

{

//Map the MAC address with IP address

send.writeUTF(ip[i]);

//Return the IP Address to client

System.out.println("IP Address Send to the Client is: :"+ip[i]);

//Set flag value

flag=1;

//break statement

break;

}

}

if(flag == 0)

{

send.writeUTF("Not Matching...!");

}

//Close the socket

temp.close();

}

}

**CLIENT SIDE:**

import java.net.\*; //import net package

import java.io.\*; //import io package

class rarpclient //class definition

{

public static void main(String args[]) throws Exception //main method

{

System.out.println("\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*");

System.out.println("IT1581 - Computer Networks Laboratory");

System.out.println("Roll Number : 20UIT021");

System.out.println("Name : R.SRIDEVI");

System.out.println("Ex. No. : 11");

System.out.println("Ex. Name : Simulation of ARP and RARP protocols");

System.out.println("Date : 25.08.2022");

System.out.println("\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*");

System.out.println("\t \t CLIENT SIDE");

//use datagram sockets UDP function to establish the connection

Socket client = new Socket("localhost",3192);

DataInputStream input = new DataInputStream(System.in);

DataOutputStream send = new DataOutputStream(client.getOutputStream());

DataInputStream receive = new DataInputStream(client.getInputStream());

//Declare the necessary variables

String data;

//Get the MAC address to be converted to IP address

System.out.println("Enter the MAC Address: ");

data = input.readLine();

//Send the MAC address to the server

send.writeUTF(data);

String receivedMsg = receive.readUTF();

//Server returns the IP address to the client

System.out.println("The Received IP Address is : "+receivedMsg);

//Close the socket

client.close();

}

}

**OUTPUT:**

[itstudent@a4it119 ~]$ javac rarpserver.java

[itstudent@a4it119 ~]$ java rarpserver \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

IT1581 - Computer Networks Laboratory

Roll Number : 20UIT021

Name : R.SRIDEVI

Ex. No. : 11

Ex. Name : Simulation of ARP and RARP protocols

Date : 25.08.2022

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SERVER SIDE IP

Address Send to the Client is: : 192.168.0.152

[itstudent@a4it119 ~]$

[itstudent@a4it119 ~]$ javac rarpclient.java

Note: rarpclient.java uses or overrides a deprecated API.

Note: Recompile with -Xlint:deprecation for details.

[itstudent@a4it119 ~]$ java rarpclient \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

IT1581 - Computer Networks Laboratory

Roll Number : 20UIT021

Name : R.SRIDEVI

Ex. No. : 11

Ex. Name : Simulation of ARPand RARP protocols

Date : 25.08.2022

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CLIENT SIDE

Enter the MAC Address: 21:25:74:67:89:01

The Received IP Address is : 192.168.0.152

[itstudent@a4it119 ~]$