**Practical 1.4**

**Aim:**

Write a java program using java.net library. Echo Client-Server. (UDP Protocol)

**PROGRAM CODE:**

**//UDP Client:**

import java.io.\*;

import java.net.\*;

class UDPClient {

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

{

System.out.println("E\_no=130050131524");

try {

String serverHostname = new String ("127.0.0.1");

if (args.length > 0)

serverHostname = args[0];

BufferedReader inFromUser =

new BufferedReader(new InputStreamReader(System.in));

DatagramSocket clientSocket = new DatagramSocket();

InetAddress IPAddress = InetAddress.getByName(serverHostname);

System.out.println ("Attemping to connect to " + IPAddress +

") via UDP port 10009");

byte[] sendData = new byte[256];

byte[] receiveData = new byte[256];

while(true)

{

System.out.print("Enter Message: ");

String sentence = inFromUser.readLine();

sendData = sentence.getBytes();

System.out.println ("Sending data to " + sendData.length + " bytes to server.");

DatagramPacket sendPacket =

new DatagramPacket(sendData, sendData.length, IPAddress,10009);

clientSocket.send(sendPacket);

DatagramPacket receivePacket = new DatagramPacket(receiveData, receiveData.length);

System.out.println ("Waiting for return packet");

clientSocket.setSoTimeout(10000);

try {

clientSocket.receive(receivePacket);

String modifiedSentence =

new String(receivePacket.getData());

InetAddress returnIPAddress = receivePacket.getAddress();

int port = receivePacket.getPort();

System.out.println ("From server at: " + returnIPAddress +

":" + port);

System.out.println("Message: " + modifiedSentence);

}

catch (SocketTimeoutException ste)

{

System.out.println ("Timeout Occurred: Packet assumed lost");

}

clientSocket.close();

}

}

catch (UnknownHostException ex) {

System.err.println(ex);

}

catch (IOException ex) {

System.err.println(ex);

}

}

}

**//UDP Server:**

import java.io.\*;

import java.net.\*;

class UDPServer {

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

{

System.out.println("E\_no=130050131524");

try

{

DatagramSocket serverSocket = new DatagramSocket(10009);

byte[] receiveData = new byte[1024];

byte[] sendData = new byte[1024];

while(true)

{

receiveData = new byte[1024];

DatagramPacket receivePacket = new DatagramPacket(receiveData, receiveData.length);

System.out.println ("Waiting for datagram packet");

serverSocket.receive(receivePacket);

String sentence = new String(receivePacket.getData());

InetAddress IPAddress = receivePacket.getAddress();

int port = receivePacket.getPort();

System.out.println ("From: " + IPAddress + ":" + port);

System.out.println ("Message: " + sentence);

String capitalizedSentence = sentence.toUpperCase();

sendData = capitalizedSentence.getBytes();

DatagramPacket sendPacket =

new DatagramPacket(sendData, sendData.length, IPAddress,

port);

serverSocket.send(sendPacket);

}

}

catch (SocketException ex) {

System.out.println("UDP Port 9876 is occupied.");

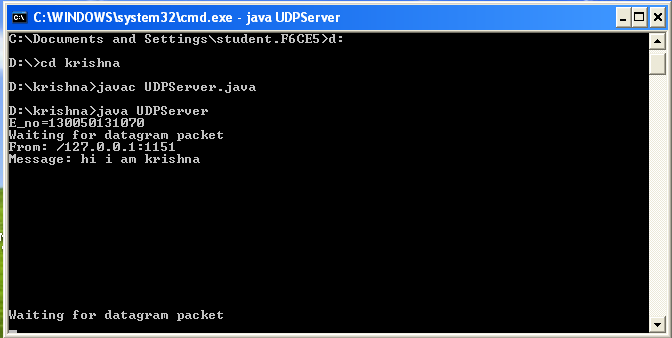
System.exit(1);

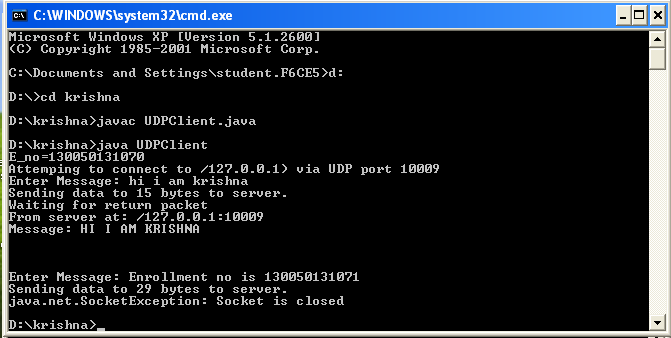
}

}

}

**Input Output:**

****

****