Q) Write two java programs one as a client and the other as a server and use UDP connection to communicate between them.

**Algorithm:**

|  |  |
| --- | --- |
| **Client:**  **Step 1:** A message is taken as input from the User  **Step 2:** Socket is created for connecting with the server using the IP Address and a Port  **Step 3:** The Socket object is used to get the Output Stream and along with the help of the Data Output Stream class.  **Step 4:** The input is converted in the byte format and sent to the Server.  **Step 11:** The inputs from the server is received using BufferedReader. | **Server:**  **Step 5:** The server creates the socket connecting with the Client in the same port.  **Step 6:** The socket is used to accept the data packet in the form of bytes.  **Step 7:** The data from the Client in converted from bytes to readable format  **Step 8:** Prints the received message.  **Step 9:** A text is appended with the received message and is converted to Output Stream with the help of the Data Output Stream Class.  **Step 10:**  The text is converted to byte format and sent back to the Client. |

**Code:**

*Server:*

import java.io.\*;

import java.net.\*;

class UdpServer

{

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

{

byte[] senddata=new byte[1024];

byte[] receivedata=new byte[1024];

System.out.println("Waiting for Connection...");

while(true)

{

DatagramSocket ds = new DatagramSocket(8080);

DatagramPacket dp = new DatagramPacket(receivedata,receivedata.length);

ds.receive(dp);

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

System.out.println("Received from Client : "+sentence);

InetAddress ipaddress = dp.getAddress();

int port=dp.getPort();

String caps = sentence.toUpperCase()+'\n';

DatagramPacket dp1 = new DatagramPacket(caps.getBytes(),caps.getBytes().length,ipaddress,port);

ds.send(dp1);

ds.close();

}

}

}

*Client:*

import java.io.\*;

import java.net.\*;

class UdpClient

{

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

{

InetAddress ipaddress = InetAddress.getByName("localhost");

byte[] senddata=new byte[1024];

byte[] receivedata=new byte[1024];

System.out.println("Enter a message :");

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

String sentence = br.readLine();

DatagramSocket ds = new DatagramSocket();

senddata = sentence.getBytes();

DatagramPacket dp = new DatagramPacket(senddata, senddata.length,ipaddress,8080);

ds.send(dp);

DatagramPacket dp1 = new DatagramPacket(receivedata,receivedata.length);

ds.receive(dp1);

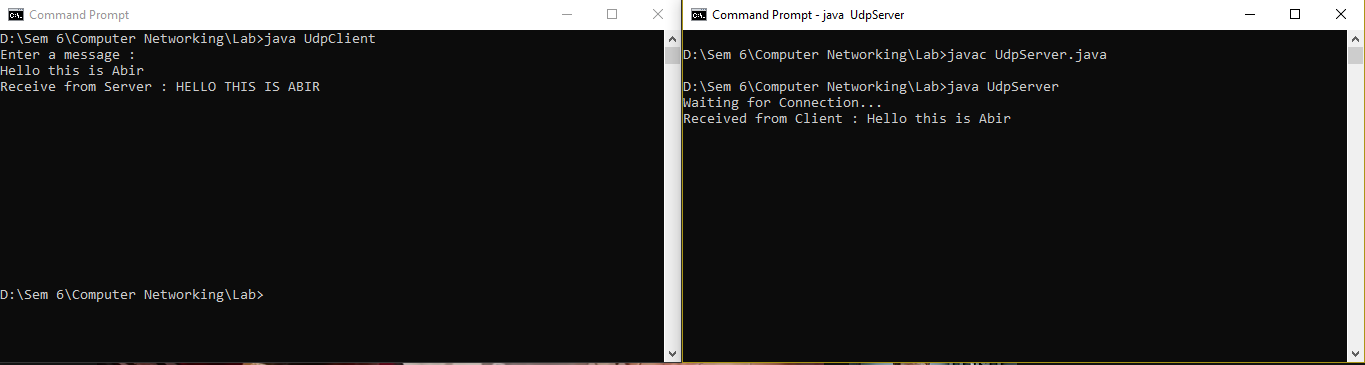
String msg=new String(dp1.getData());

System.out.println("Receive from Server : "+msg);

ds.close();

}

}

**Output:**