Project 2
Due Sunday 2/14/2016 by 11:59 PM
No delay is accepted
For each day late submission 2 points penalty is incurred.
Copy/paste your Java classes to this document and drop it into the
folder *Project 2* on the *blackboard.*
If you have any question please email me at mbadii@pace.edu

Do not delete anything from this file. Just copy/paste your java classes under the word: Answer.

Write two programs to chat. Each program is playing the role of a client and a server. Name one of them MyServer.java and the other MyClient.java. This is how these programs should work:

1. Run MyServer. The program is waiting for the client. After the client is connected the program send: *Hello !!*

2. Run MyClient. This program receives The word: **Hello !!**.

The following steps are repeated until the client enters: bye.

Step I) Enter a message on the client's console (Like: `How are you server?`) This message should appear on the server's console (like: `How are you server?`)

Step II) Enter a message on the server's console (like: `I am good. Do you have any question client?`). This message should appear on the client's console (like: `I am good. Do you have any question client?`)

These two steps should be repeated until the client enters: bye.

Sample dialog:

Server	Client
<ins>How are you server?</ins> Enter a line for the server: `I am good. Do you have any question client?` <ins>No server. I have to leave</ins> Enter a line for the server: `OK client`	***Hello !!*** Enter a line or bye to quit for the client: `How are you server?` ***I am good. Do you have any question client?*** Enter a line or bye to quit for the client: `No server. I have to leave` ***OK client*** Enter a line or bye to quit for the client: `bye`

In this sample dialog:

Green lines are what the user enters.

Underlined sentences are what the client sends to the server.

Boldfaced italic sentences are what the server sends.

Other lines are the prompts for the user to enter.

Copy both programs and paste them under the word: **Answer**

Answer:

MyClient.java

```java
import java.io.*;
import java.net.*;
import java.util.*;

public class MyClient {
    public static void main(String[] args) throws IOException, InterruptedException {
        Scanner keyboard = new Scanner(System.in);
        DatagramSocket serverSocket = null;
        InetAddress host = InetAddress.getByName("localhost");
        try {
            final int MAX_LEN = 100;
            serverSocket= new DatagramSocket(9876);
            String msg ="" ;
            while(!msg.trim().equalsIgnoreCase("bye")){
                byte[] buffer = new byte[MAX_LEN];
                DatagramPacket datagram = new DatagramPacket(buffer, buffer.length);
                serverSocket.receive(datagram);
                String message = new String(buffer);
                System.out.println("Message from server: " + message);
                System.out.print("Enter a message to send to server : ");
                msg = keyboard.nextLine();
                byte [] dataToSend = new byte[MAX_LEN];
                dataToSend = msg.getBytes();
                datagram.setData(dataToSend);
                datagram.setLength(dataToSend.length);
                serverSocket.send(datagram);
            }
            serverSocket.close();
        } catch (IOException e) {
            System.out.println("Error: " + e);
```

```java
                    System.exit(0);
            }


        }
}
```

MyServer.java

```java
import java.io.*;
import java.net.*;
import java.util.Scanner;

public class MyServer {
        static DatagramSocket clientSocket ;
        static DatagramPacket datagram;
        static byte [] buff ;

        public static void main(String[] args) throws IOException {
                Scanner keyboard = new Scanner(System.in);
                String msg = "";
                String receivedMessage="";
                try {
                        final int MAX_LEN = 100;
                        clientSocket = new DatagramSocket();
                        InetAddress host = InetAddress.getByName("localhost");
                        boolean flag = false;
                        while(!receivedMessage.trim().equalsIgnoreCase("bye"))
                        {
                                if(flag == false)
                                {
                                        msg = "hello";
                                        flag = true;
                                        sendPacket(msg,host);
                                }
                                else
                                {
                                        System.out.println("Enter message to send to
client:");

                                        msg = keyboard.nextLine();
                                        sendPacket(msg,host);
                                }
```

```java
                        byte [] incomingData = new byte[MAX_LEN];
                        DatagramPacket incomingPacket = new
DatagramPacket(incomingData, incomingData.length);
                        clientSocket.receive(incomingPacket);
                        receivedMessage= new String(incomingPacket.getData());
                        System.out.println("Message from
client:"+receivedMessage);
                }
                clientSocket.close();

        }
        catch (IOException e) {
                System.out.println("Error: " + e);
                System.exit(0);
        }

    }
    static void sendPacket(String msge,InetAddress ip)
    {
            buff = msge.getBytes();
            datagram=new DatagramPacket(buff,buff.length,ip,9876);
            try {
                    clientSocket.send(datagram);
            } catch (IOException e) {
                    e.printStackTrace();
            }
    }

}
```
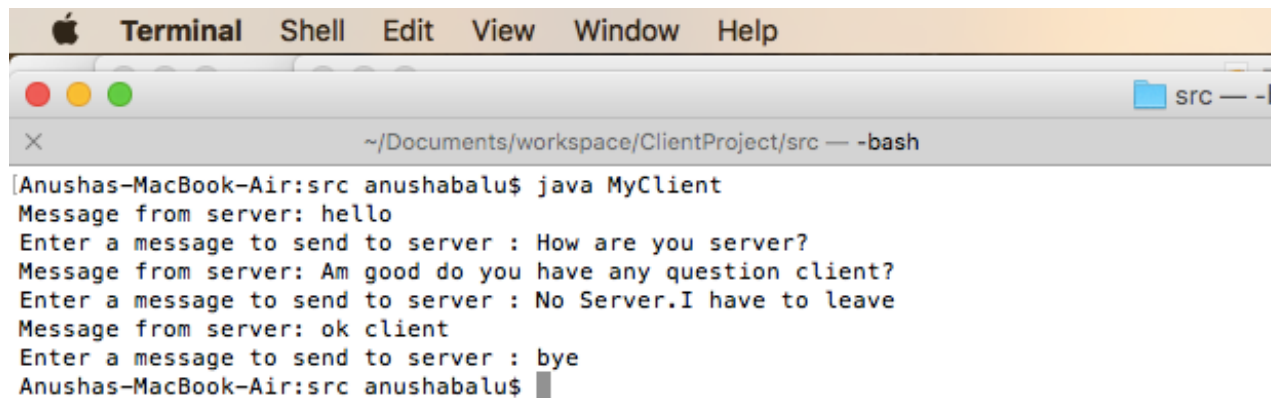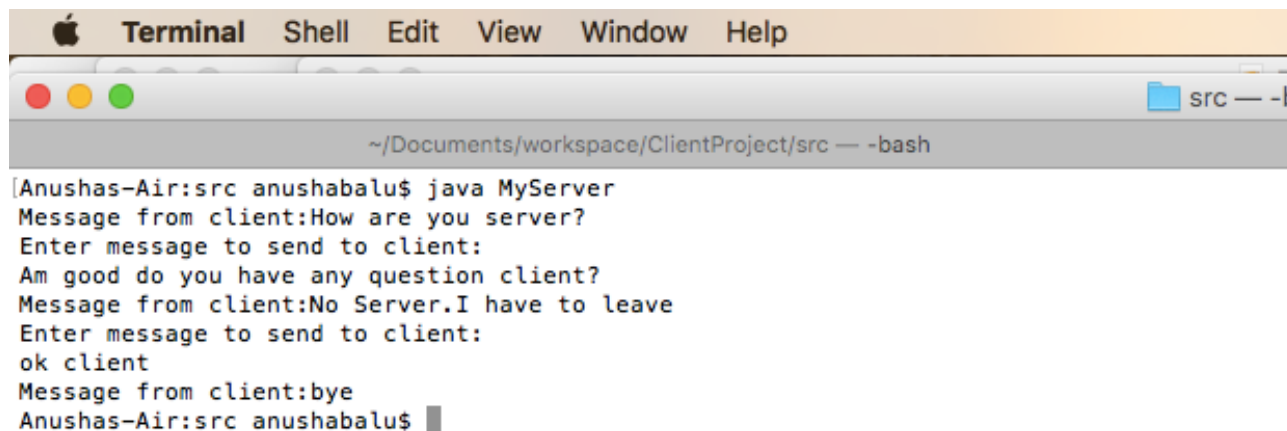
Output:
Please run MyClient.java first
Below is the screenshots of output

MyClient window

MyServer window