16-09-2020
LAB EXERCISES

DONE BY,
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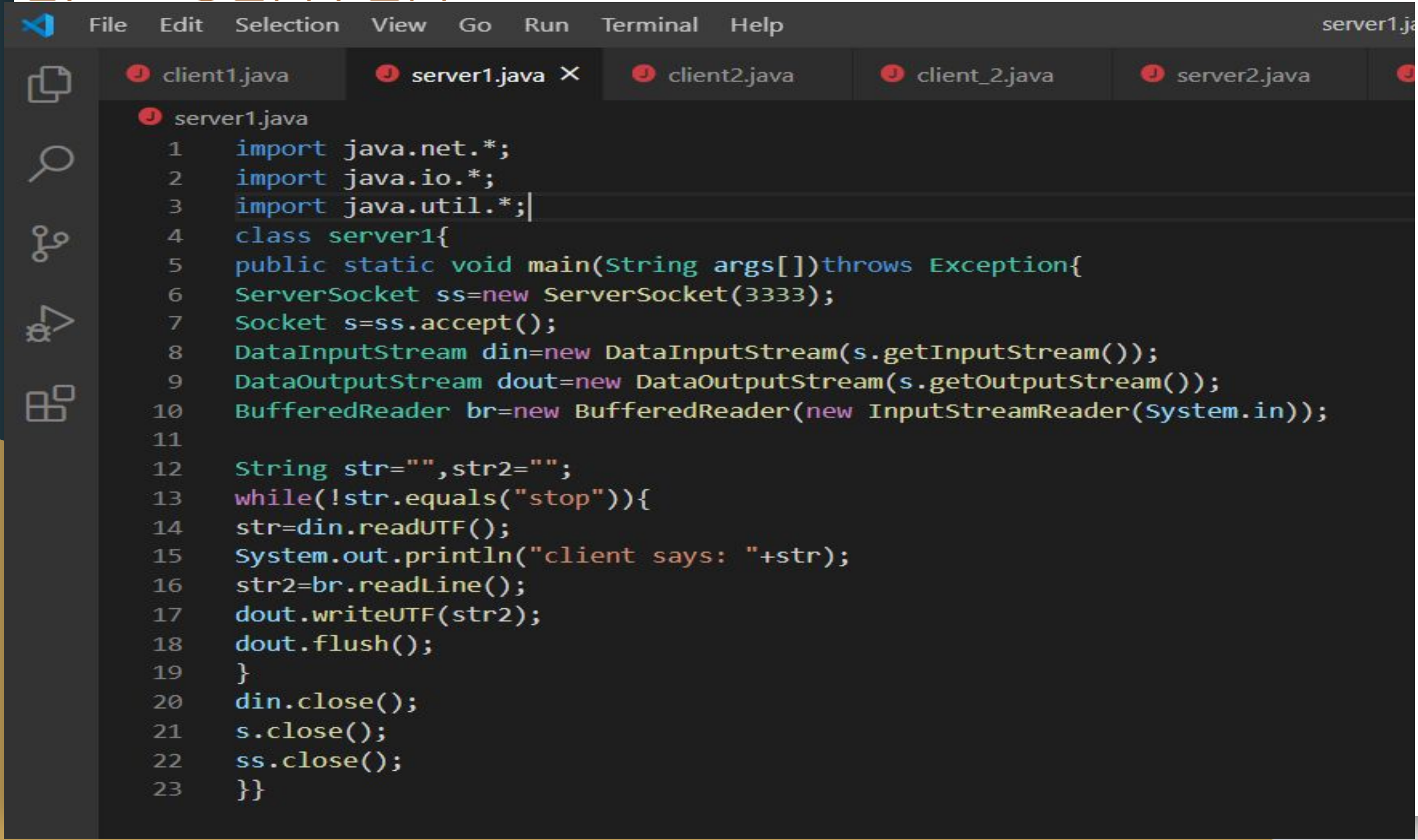
MCA(R)
2019202049

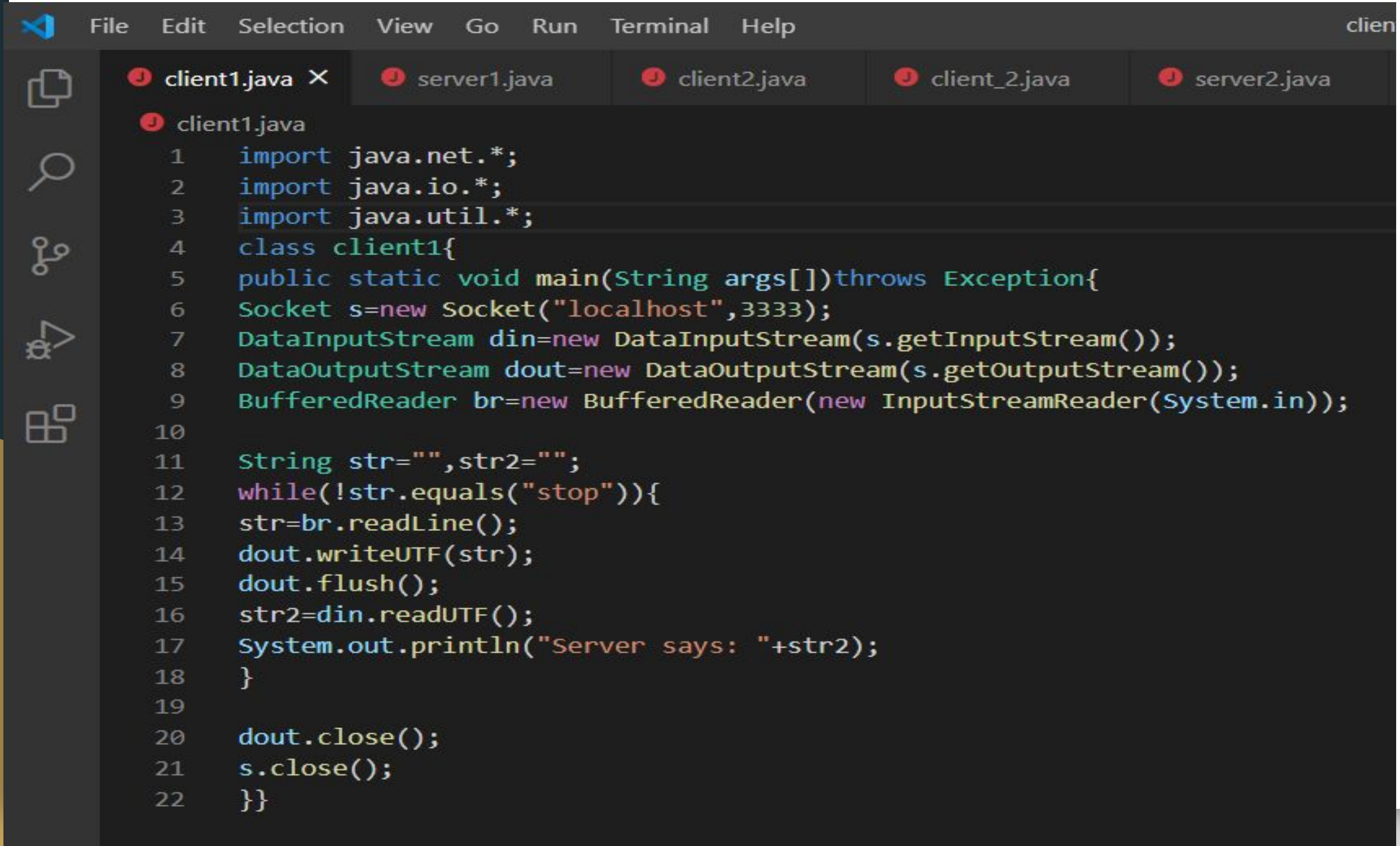
1: SERVER



```java
import java.net.*;
import java.io.*;
import java.util.*;
class server1{
public static void main(String args[])throws Exception{
ServerSocket ss=new ServerSocket(3333);
Socket s=ss.accept();
DataInputStream din=new DataInputStream(s.getInputStream());
DataOutputStream dout=new DataOutputStream(s.getOutputStream());
BufferedReader br=new BufferedReader(new InputStreamReader(System.in));

String str="",str2="";
while(!str.equals("stop")){
str=din.readUTF();
System.out.println("client says: "+str);
str2=br.readLine();
dout.writeUTF(str2);
dout.flush();
}
din.close();
s.close();
ss.close();
}}
```

CLIENT

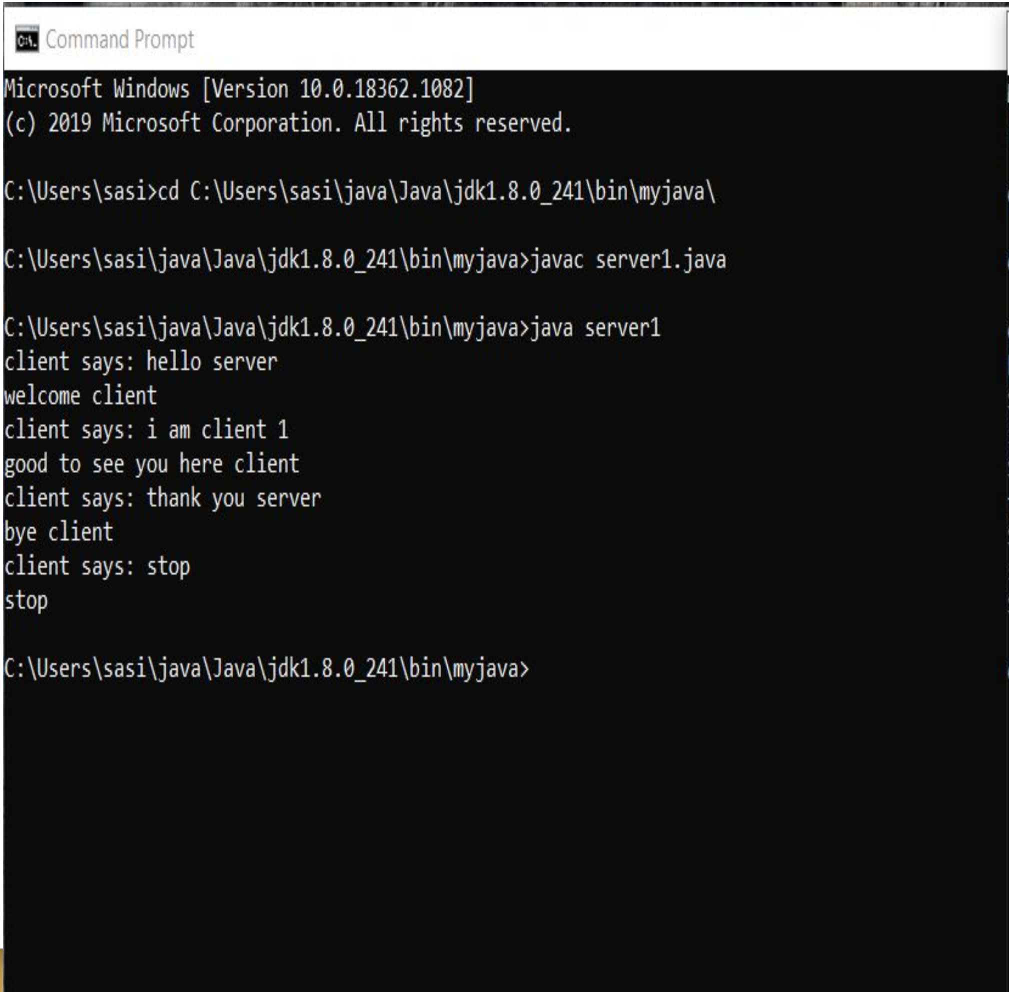


```java
import java.net.*;
import java.io.*;
import java.util.*;
class client1{
public static void main(String args[])throws Exception{
Socket s=new Socket("localhost",3333);
DataInputStream din=new DataInputStream(s.getInputStream());
DataOutputStream dout=new DataOutputStream(s.getOutputStream());
BufferedReader br=new BufferedReader(new InputStreamReader(System.in));

String str="",str2="";
while(!str.equals("stop")){
str=br.readLine();
dout.writeUTF(str);
dout.flush();
str2=din.readUTF();
System.out.println("Server says: "+str2);
}

dout.close();
s.close();
}}
```

OUTPUT



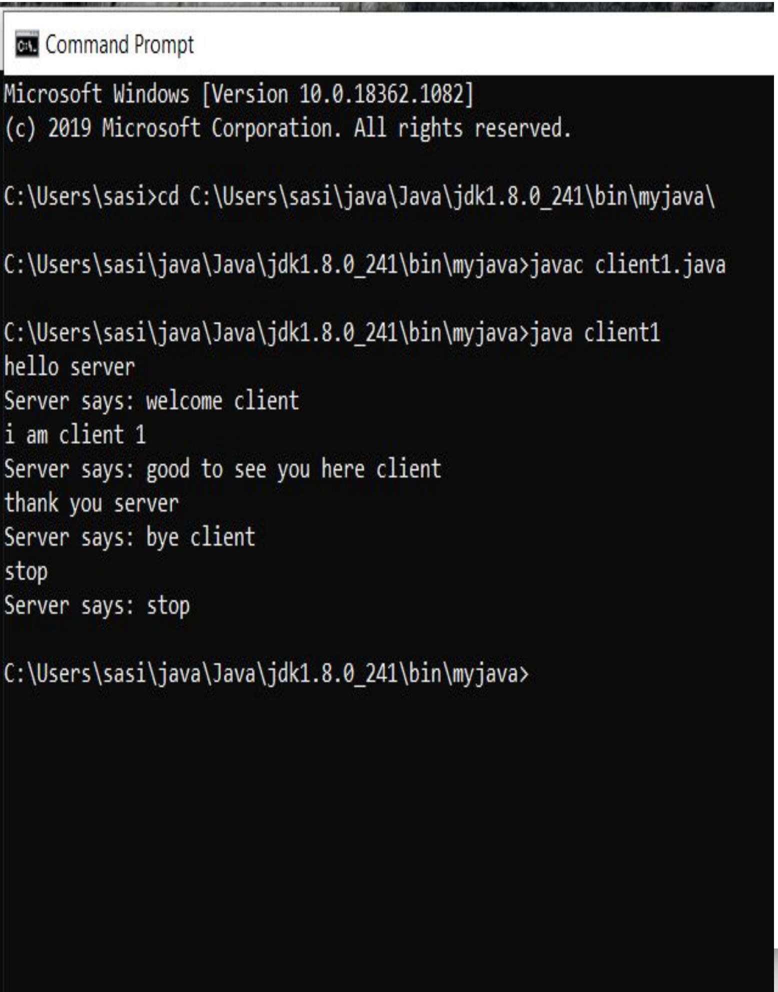
```
Microsoft Windows [Version 10.0.18362.1082]
(c) 2019 Microsoft Corporation. All rights reserved.

C:\Users\sasi>cd C:\Users\sasi\java\Java\jdk1.8.0_241\bin\myjava\

C:\Users\sasi\java\Java\jdk1.8.0_241\bin\myjava>javac server1.java

C:\Users\sasi\java\Java\jdk1.8.0_241\bin\myjava>java server1
client says: hello server
welcome client
client says: i am client 1
good to see you here client
client says: thank you server
bye client
client says: stop
stop

C:\Users\sasi\java\Java\jdk1.8.0_241\bin\myjava>
```



```
Microsoft Windows [Version 10.0.18362.1082]
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C:\Users\sasi>cd C:\Users\sasi\java\Java\jdk1.8.0_241\bin\myjava\

C:\Users\sasi\java\Java\jdk1.8.0_241\bin\myjava>javac client1.java

C:\Users\sasi\java\Java\jdk1.8.0_241\bin\myjava>java client1
hello server
Server says: welcome client
i am client 1
Server says: good to see you here client
thank you server
Server says: bye client
stop
Server says: stop

C:\Users\sasi\java\Java\jdk1.8.0_241\bin\myjava>
```
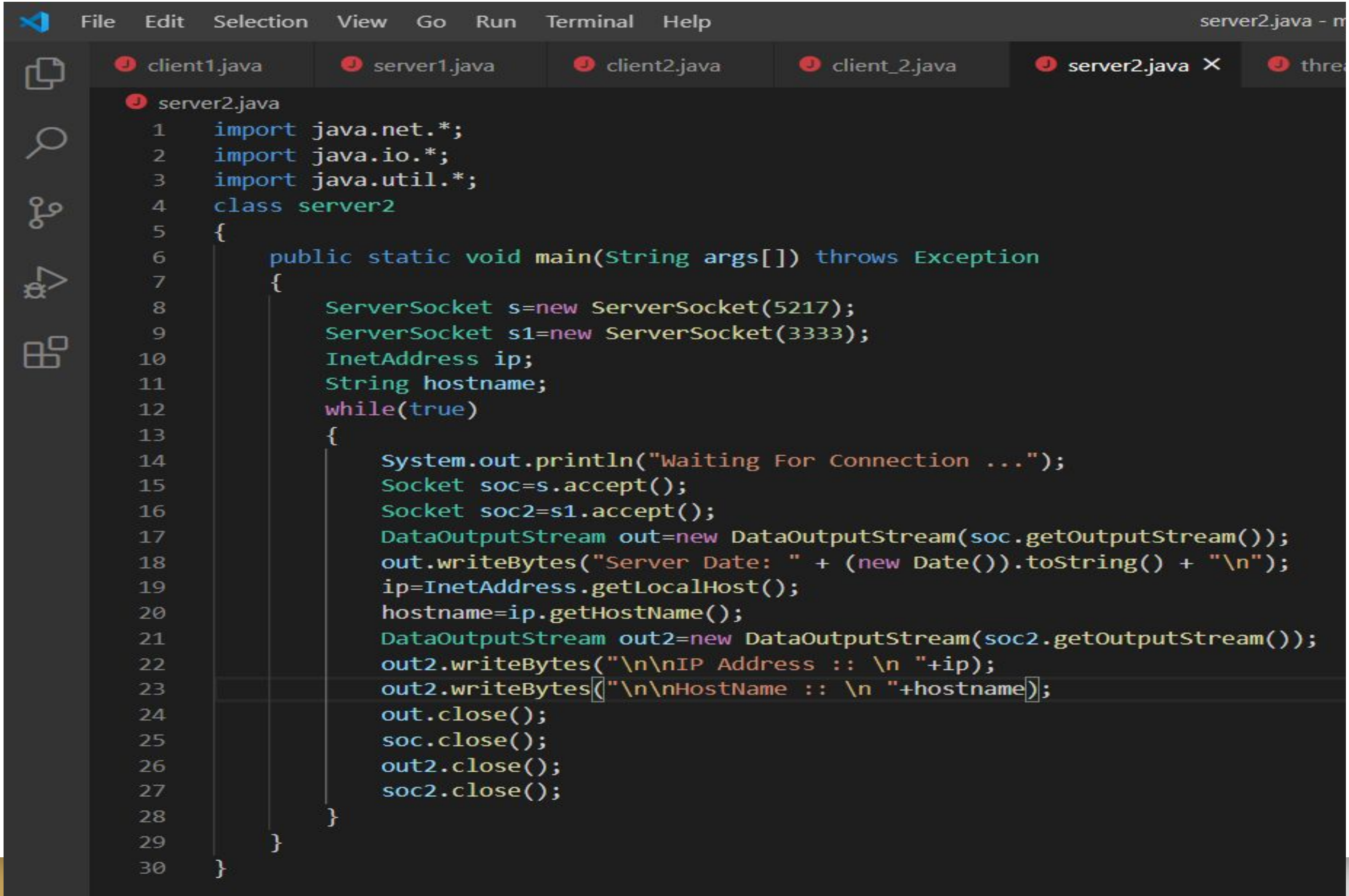
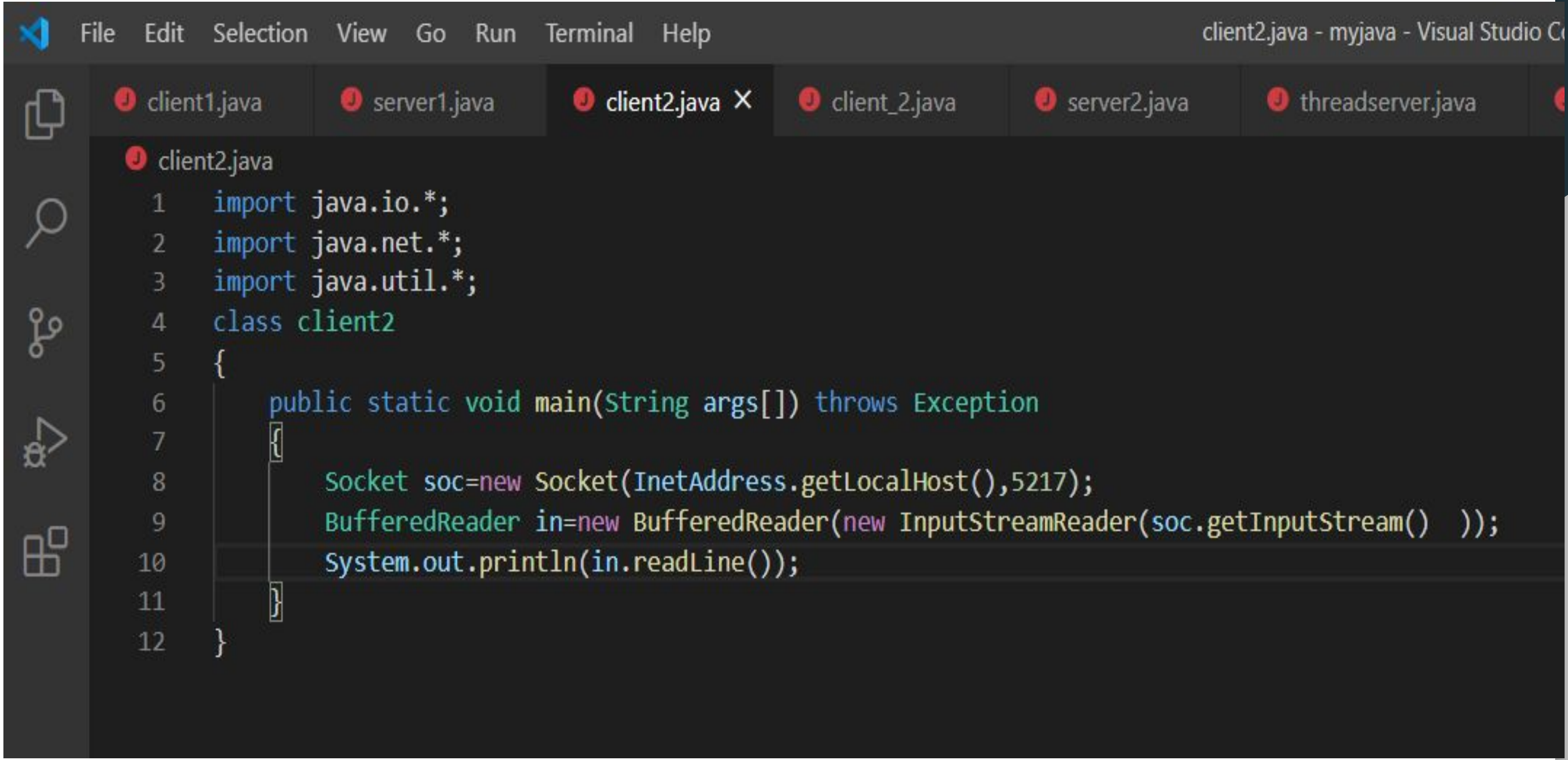

2: SERVER



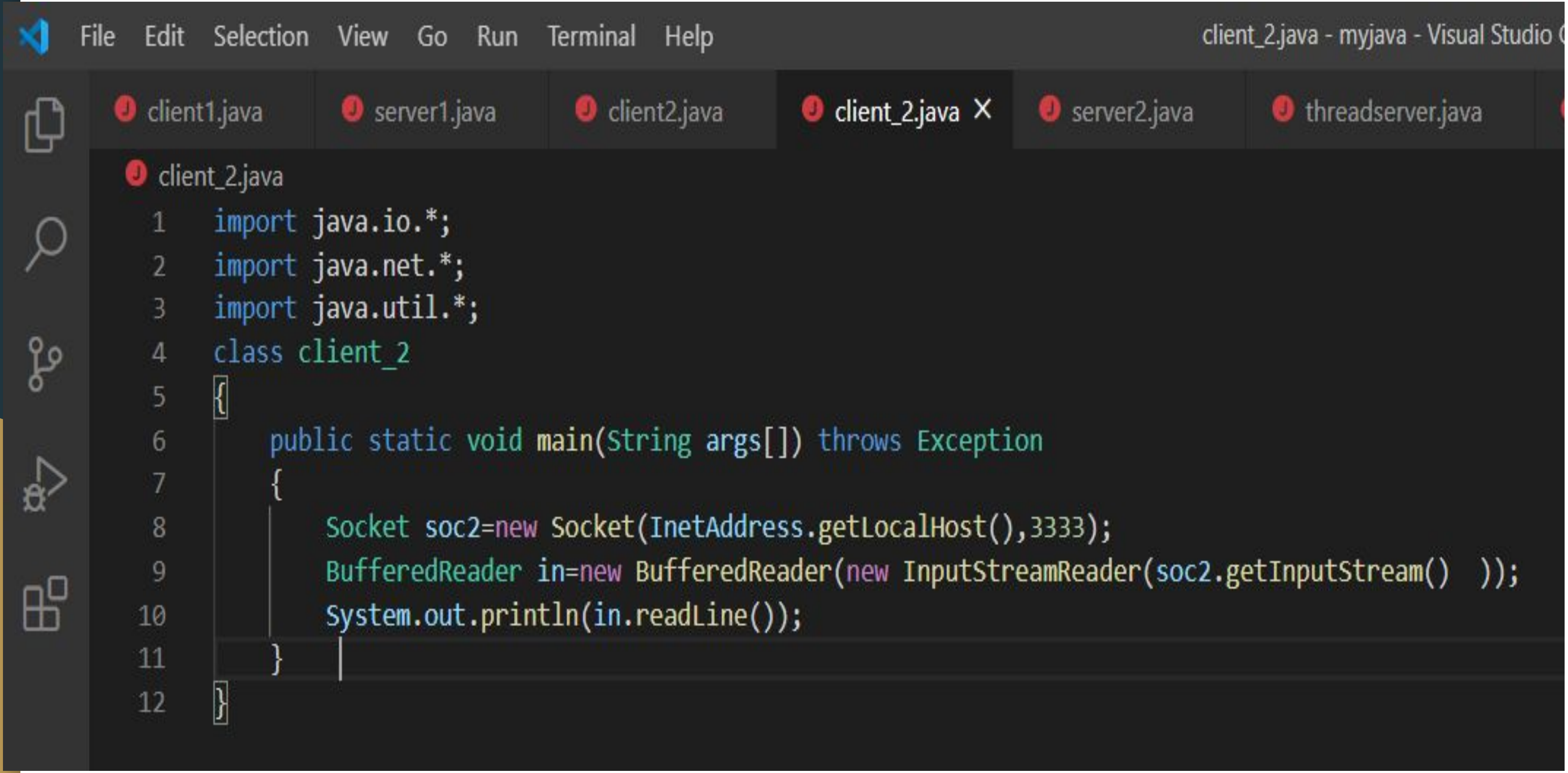
```java
import java.net.*;
import java.io.*;
import java.util.*;
class server2
{
    public static void main(String args[]) throws Exception
    {
        ServerSocket s=new ServerSocket(5217);
        ServerSocket s1=new ServerSocket(3333);
        InetAddress ip;
        String hostname;
        while(true)
        {
            System.out.println("Waiting For Connection ...");
            Socket soc=s.accept();
            Socket soc2=s1.accept();
            DataOutputStream out=new DataOutputStream(soc.getOutputStream());
            out.writeBytes("Server Date: " + (new Date()).toString() + "\n");
            ip=InetAddress.getLocalHost();
            hostname=ip.getHostName();
            DataOutputStream out2=new DataOutputStream(soc2.getOutputStream());
            out2.writeBytes("\n\nIP Address :: \n "+ip);
            out2.writeBytes("\n\nHostName :: \n "+hostname);
            out.close();
            soc.close();
            out2.close();
            soc2.close();
        }
    }
}
```

CLIENT 1

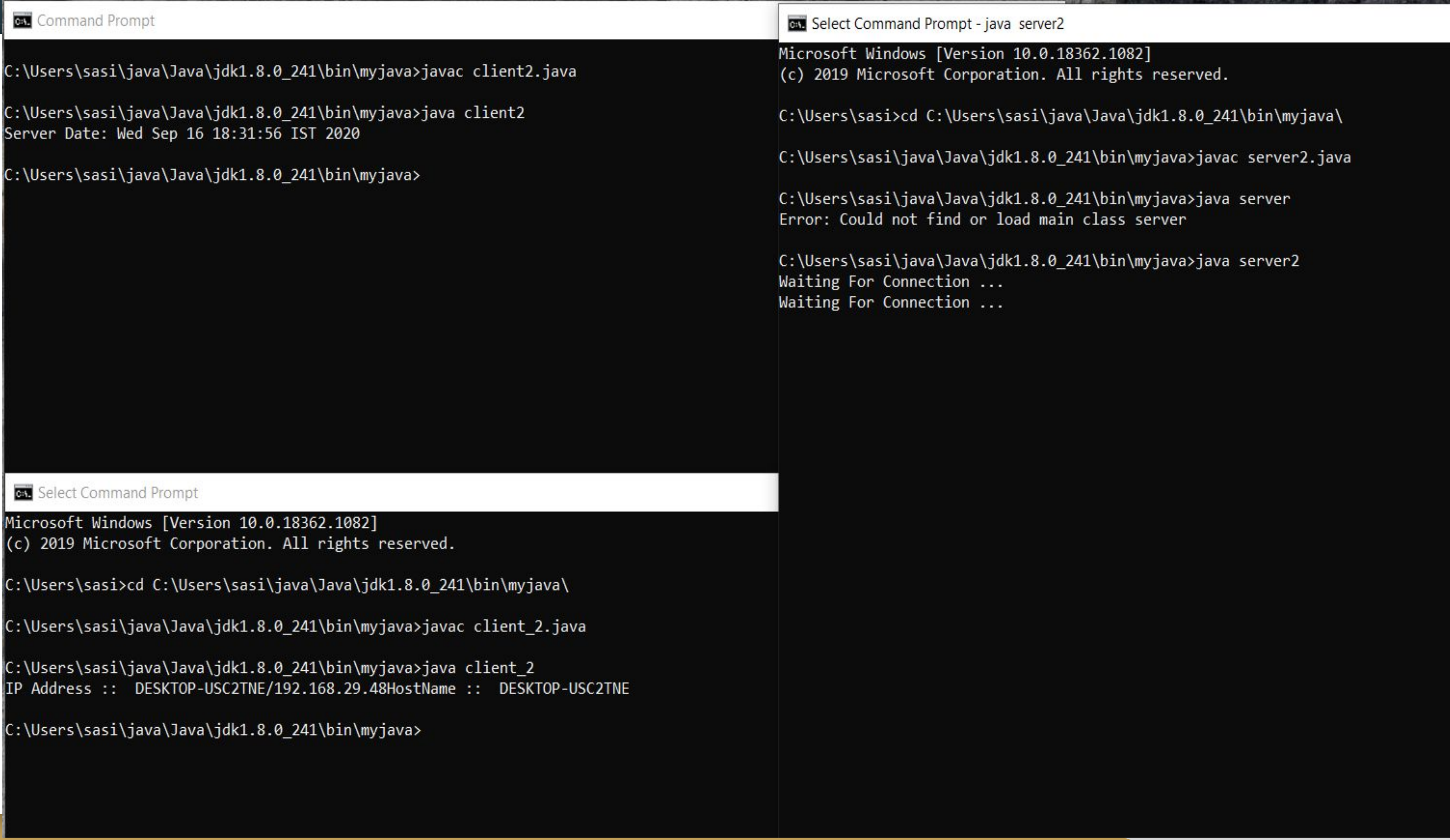


```java
import java.io.*;
import java.net.*;
import java.util.*;
class client2
{
    public static void main(String args[]) throws Exception
    {
        Socket soc=new Socket(InetAddress.getLocalHost(),5217);
        BufferedReader in=new BufferedReader(new InputStreamReader(soc.getInputStream()  ));
        System.out.println(in.readLine());
    }
}
```

CLIENT 2



```java
import java.io.*;
import java.net.*;
import java.util.*;
class client_2
{
    public static void main(String args[]) throws Exception
    {
        Socket soc2=new Socket(InetAddress.getLocalHost(),3333);
        BufferedReader in=new BufferedReader(new InputStreamReader(soc2.getInputStream()  ));
        System.out.println(in.readLine());
    }
}
```



```
C:\Users\sasi\java\Java\jdk1.8.0_241\bin\myjava>javac client2.java

C:\Users\sasi\java\Java\jdk1.8.0_241\bin\myjava>java client2
Server Date: Wed Sep 16 18:31:56 IST 2020

C:\Users\sasi\java\Java\jdk1.8.0_241\bin\myjava>
```

```
Microsoft Windows [Version 10.0.18362.1082]
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C:\Users\sasi>cd C:\Users\sasi\java\Java\jdk1.8.0_241\bin\myjava\

C:\Users\sasi\java\Java\jdk1.8.0_241\bin\myjava>javac client_2.java

C:\Users\sasi\java\Java\jdk1.8.0_241\bin\myjava>java client_2
IP Address ::  DESKTOP-USC2TNE/192.168.29.48HostName ::  DESKTOP-USC2TNE

C:\Users\sasi\java\Java\jdk1.8.0_241\bin\myjava>
```

```
Microsoft Windows [Version 10.0.18362.1082]
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C:\Users\sasi>cd C:\Users\sasi\java\Java\jdk1.8.0_241\bin\myjava\

C:\Users\sasi\java\Java\jdk1.8.0_241\bin\myjava>javac server2.java

C:\Users\sasi\java\Java\jdk1.8.0_241\bin\myjava>java server
Error: Could not find or load main class server

C:\Users\sasi\java\Java\jdk1.8.0_241\bin\myjava>java server2
Waiting For Connection ...
Waiting For Connection ...
```
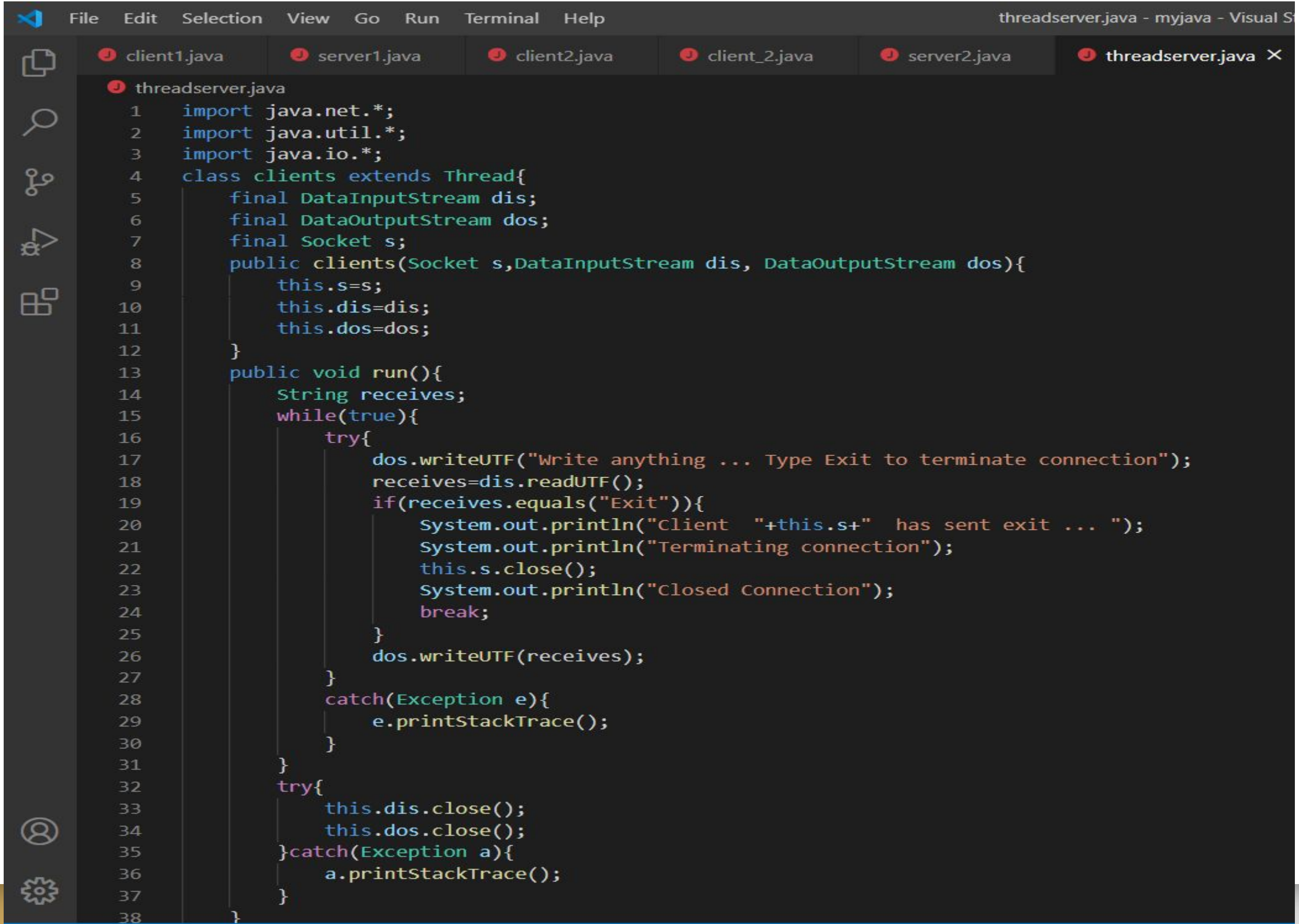
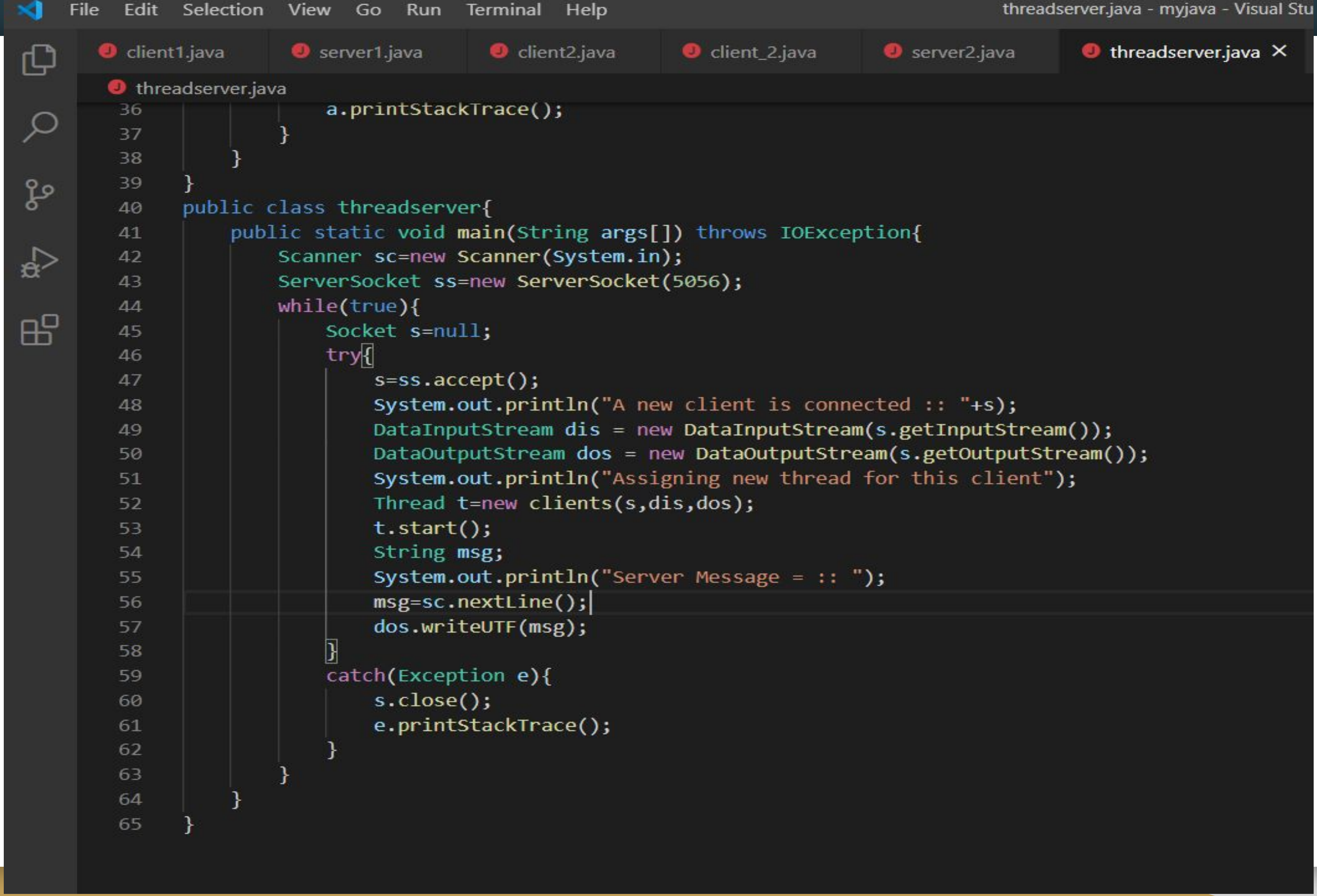

3: SERVER

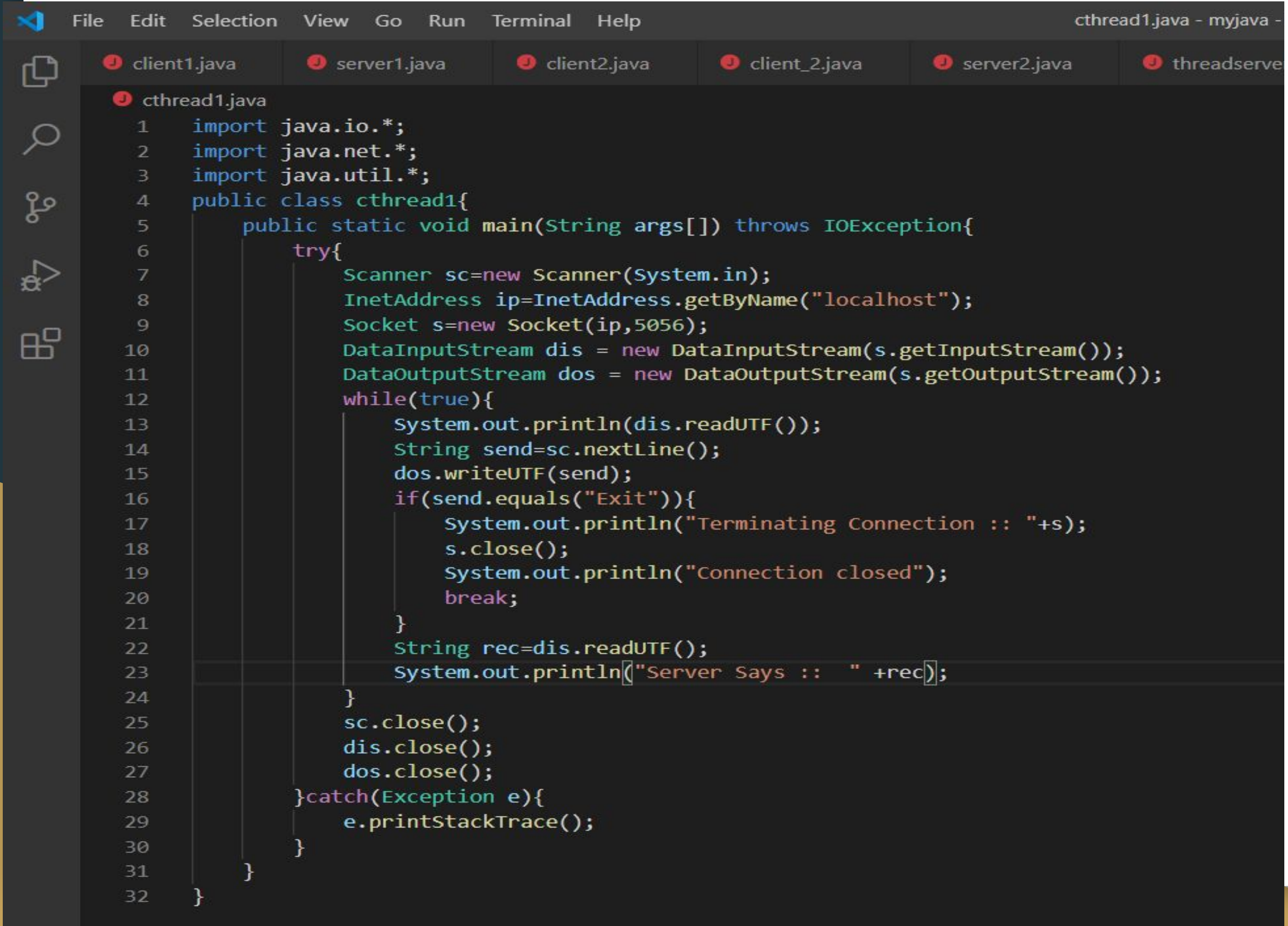


```java
import java.net.*;
import java.util.*;
import java.io.*;
class clients extends Thread{
    final DataInputStream dis;
    final DataOutputStream dos;
    final Socket s;
    public clients(Socket s,DataInputStream dis, DataOutputStream dos){
        this.s=s;
        this.dis=dis;
        this.dos=dos;
    }
    public void run(){
        String receives;
        while(true){
            try{
                dos.writeUTF("Write anything ... Type Exit to terminate connection");
                receives=dis.readUTF();
                if(receives.equals("Exit")){
                    System.out.println("Client  "+this.s+"  has sent exit ... ");
                    System.out.println("Terminating connection");
                    this.s.close();
                    System.out.println("Closed Connection");
                    break;
                }
                dos.writeUTF(receives);
            }
            catch(Exception e){
                e.printStackTrace();
            }
        }
        try{
            this.dis.close();
            this.dos.close();
        }catch(Exception a){
            a.printStackTrace();
        }
    }
```



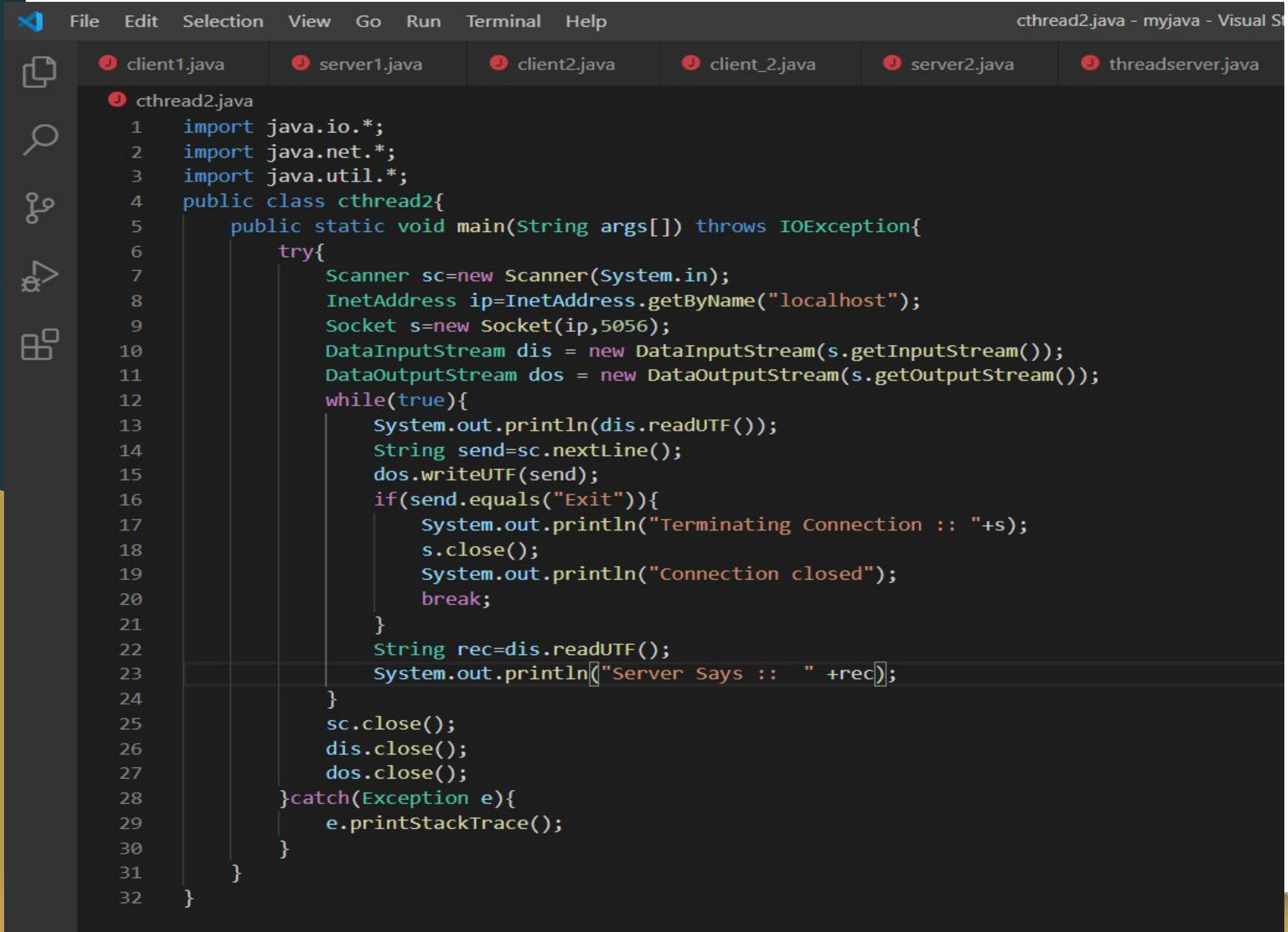
```java
            a.printStackTrace();
        }
    }
}
public class threadserver{
    public static void main(String args[]) throws IOException{
        Scanner sc=new Scanner(System.in);
        ServerSocket ss=new ServerSocket(5056);
        while(true){
            Socket s=null;
            try{
                s=ss.accept();
                System.out.println("A new client is connected :: "+s);
                DataInputStream dis = new DataInputStream(s.getInputStream());
                DataOutputStream dos = new DataOutputStream(s.getOutputStream());
                System.out.println("Assigning new thread for this client");
                Thread t=new clients(s,dis,dos);
                t.start();
                String msg;
                System.out.println("Server Message = :: ");
                msg=sc.nextLine();
                dos.writeUTF(msg);
            }
            catch(Exception e){
                s.close();
                e.printStackTrace();
            }
        }
    }
}
```

CLIENT 1



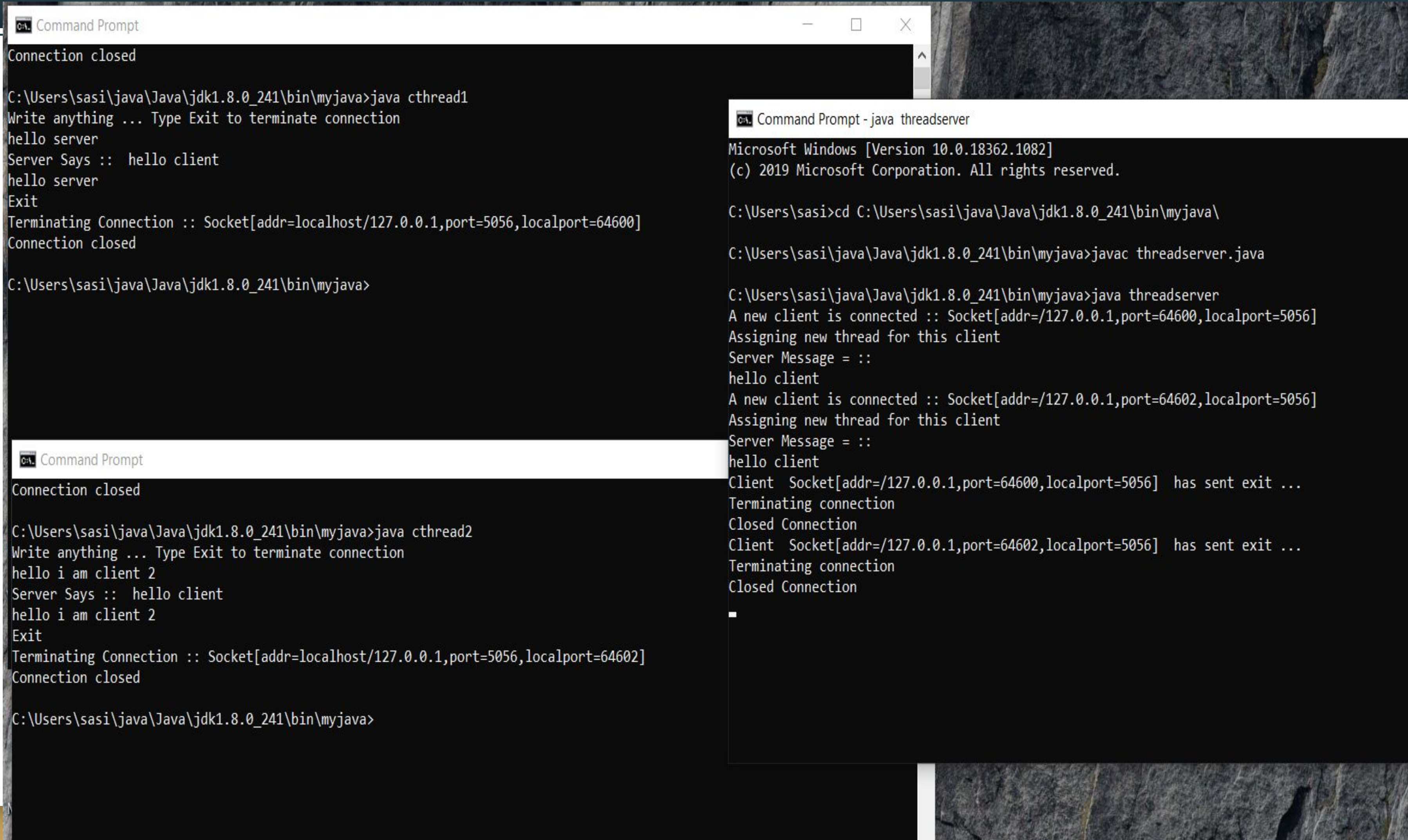
```java
import java.io.*;
import java.net.*;
import java.util.*;
public class cthread1{
    public static void main(String args[]) throws IOException{
        try{
            Scanner sc=new Scanner(System.in);
            InetAddress ip=InetAddress.getByName("localhost");
            Socket s=new Socket(ip,5056);
            DataInputStream dis = new DataInputStream(s.getInputStream());
            DataOutputStream dos = new DataOutputStream(s.getOutputStream());
            while(true){
                System.out.println(dis.readUTF());
                String send=sc.nextLine();
                dos.writeUTF(send);
                if(send.equals("Exit")){
                    System.out.println("Terminating Connection :: "+s);
                    s.close();
                    System.out.println("Connection closed");
                    break;
                }
                String rec=dis.readUTF();
                System.out.println("Server Says ::  " +rec);
            }
            sc.close();
            dis.close();
            dos.close();
        }catch(Exception e){
            e.printStackTrace();
        }
    }
}
```

CLIENT 2



```java
import java.io.*;
import java.net.*;
import java.util.*;
public class cthread2{
    public static void main(String args[]) throws IOException{
        try{
            Scanner sc=new Scanner(System.in);
            InetAddress ip=InetAddress.getByName("localhost");
            Socket s=new Socket(ip,5056);
            DataInputStream dis = new DataInputStream(s.getInputStream());
            DataOutputStream dos = new DataOutputStream(s.getOutputStream());
            while(true){
                System.out.println(dis.readUTF());
                String send=sc.nextLine();
                dos.writeUTF(send);
                if(send.equals("Exit")){
                    System.out.println("Terminating Connection :: "+s);
                    s.close();
                    System.out.println("Connection closed");
                    break;
                }
                String rec=dis.readUTF();
                System.out.println("Server Says ::  " +rec);
            }
            sc.close();
            dis.close();
            dos.close();
        }catch(Exception e){
            e.printStackTrace();
        }
    }
}
```

OUTPU



```
Connection closed

C:\Users\sasi\java\Java\jdk1.8.0_241\bin\myjava>java cthread1
Write anything ... Type Exit to terminate connection
hello server
Server Says ::  hello client
hello server
Exit
Terminating Connection :: Socket[addr=localhost/127.0.0.1,port=5056,localport=64600]
Connection closed

C:\Users\sasi\java\Java\jdk1.8.0_241\bin\myjava>
```

```
Microsoft Windows [Version 10.0.18362.1082]
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C:\Users\sasi>cd C:\Users\sasi\java\Java\jdk1.8.0_241\bin\myjava\

C:\Users\sasi\java\Java\jdk1.8.0_241\bin\myjava>javac threadserver.java

C:\Users\sasi\java\Java\jdk1.8.0_241\bin\myjava>java threadserver
A new client is connected :: Socket[addr=/127.0.0.1,port=64600,localport=5056]
Assigning new thread for this client
Server Message = ::
hello client
A new client is connected :: Socket[addr=/127.0.0.1,port=64602,localport=5056]
Assigning new thread for this client
Server Message = ::
hello client
Client  Socket[addr=/127.0.0.1,port=64600,localport=5056]  has sent exit ...
Terminating connection
Closed Connection
Client  Socket[addr=/127.0.0.1,port=64602,localport=5056]  has sent exit ...
Terminating connection
Closed Connection
```
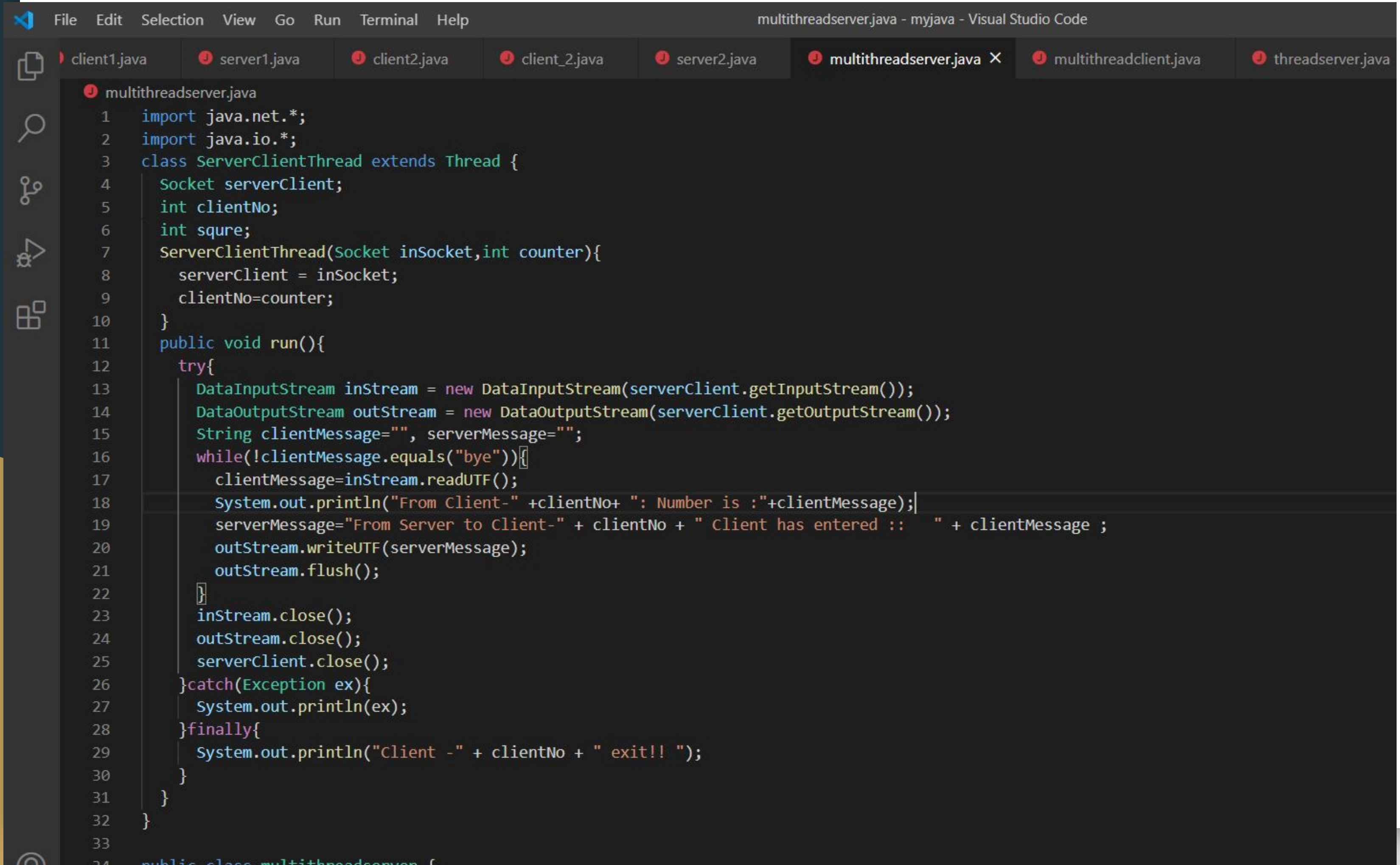
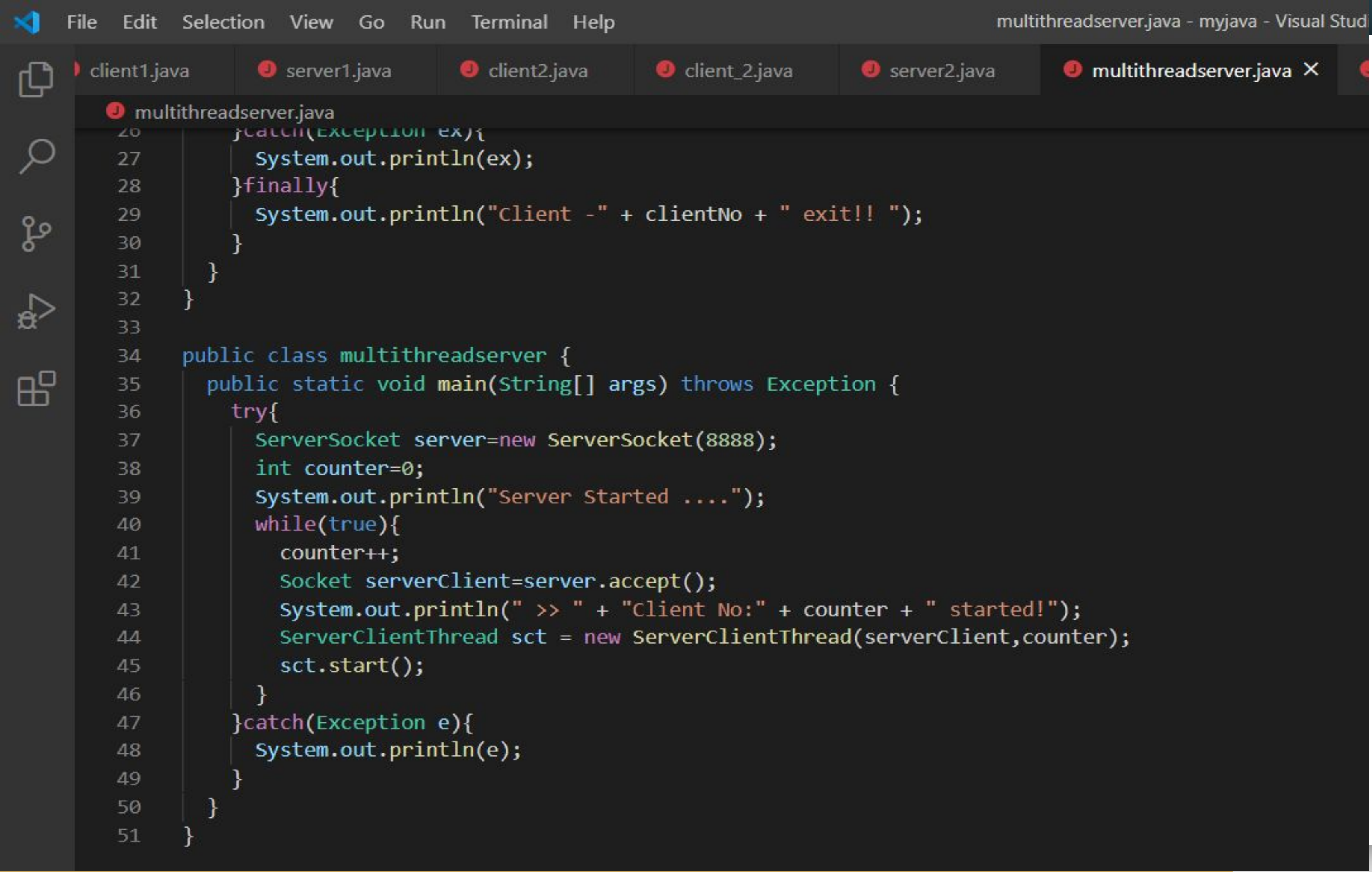

```
Connection closed

C:\Users\sasi\java\Java\jdk1.8.0_241\bin\myjava>java cthread2
Write anything ... Type Exit to terminate connection
hello i am client 2
Server Says ::  hello client
hello i am client 2
Exit
Terminating Connection :: Socket[addr=localhost/127.0.0.1,port=5056,localport=64602]
Connection closed

C:\Users\sasi\java\Java\jdk1.8.0_241\bin\myjava>
```

4: SERVER

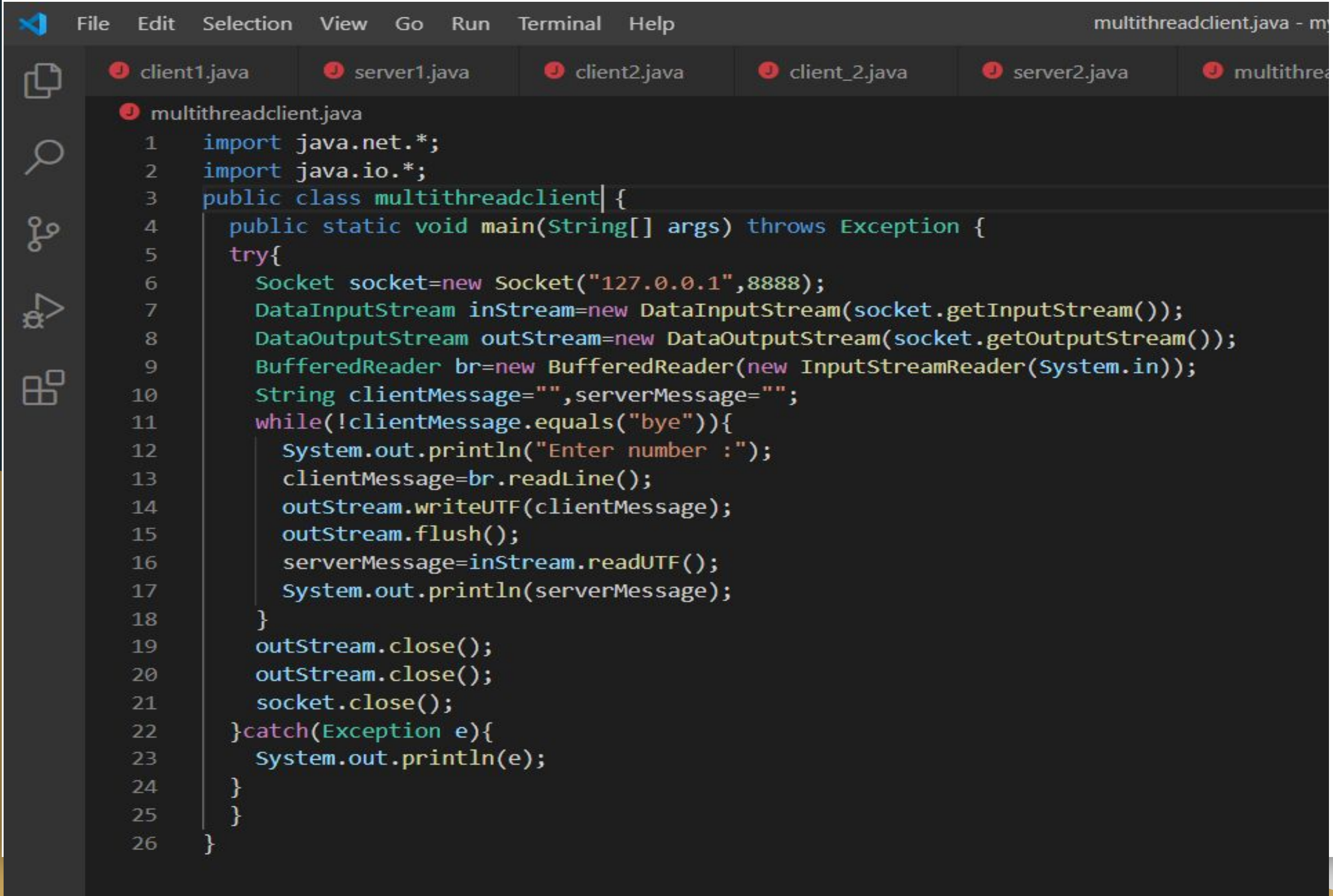


```java
import java.net.*;
import java.io.*;
class ServerClientThread extends Thread {
  Socket serverClient;
  int clientNo;
  int squre;
  ServerClientThread(Socket inSocket,int counter){
    serverClient = inSocket;
    clientNo=counter;
  }
  public void run(){
    try{
      DataInputStream inStream = new DataInputStream(serverClient.getInputStream());
      DataOutputStream outStream = new DataOutputStream(serverClient.getOutputStream());
      String clientMessage="", serverMessage="";
      while(!clientMessage.equals("bye")){
        clientMessage=inStream.readUTF();
        System.out.println("From Client-" +clientNo+ ": Number is :"+clientMessage);
        serverMessage="From Server to Client-" + clientNo + " Client has entered ::    " + clientMessage ;
        outStream.writeUTF(serverMessage);
        outStream.flush();
      }
      inStream.close();
      outStream.close();
      serverClient.close();
    }catch(Exception ex){
      System.out.println(ex);
    }finally{
      System.out.println("Client -" + clientNo + " exit!! ");
    }
  }
}

public class multithreadserver {
```



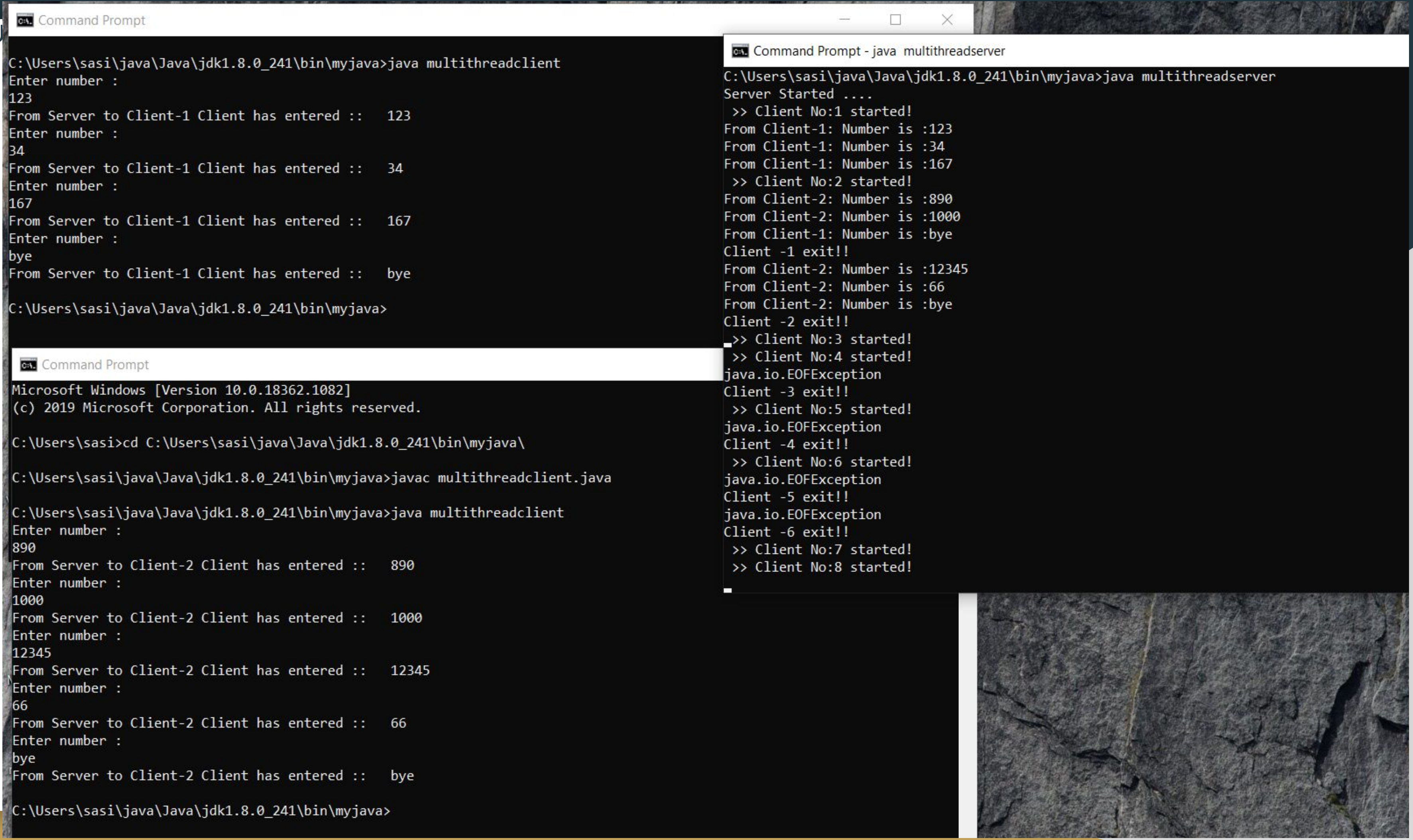
```java
    }catch(Exception ex){
      System.out.println(ex);
    }finally{
      System.out.println("Client -" + clientNo + " exit!! ");
    }
  }
}

public class multithreadserver {
  public static void main(String[] args) throws Exception {
    try{
      ServerSocket server=new ServerSocket(8888);
      int counter=0;
      System.out.println("Server Started ....");
      while(true){
        counter++;
        Socket serverClient=server.accept();
        System.out.println(" >> " + "Client No:" + counter + " started!");
        ServerClientThread sct = new ServerClientThread(serverClient,counter);
        sct.start();
      }
    }catch(Exception e){
      System.out.println(e);
    }
  }
}
```

CLIENT



```java
import java.net.*;
import java.io.*;
public class multithreadclient {
  public static void main(String[] args) throws Exception {
  try{
    Socket socket=new Socket("127.0.0.1",8888);
    DataInputStream inStream=new DataInputStream(socket.getInputStream());
    DataOutputStream outStream=new DataOutputStream(socket.getOutputStream());
    BufferedReader br=new BufferedReader(new InputStreamReader(System.in));
    String clientMessage="",serverMessage="";
    while(!clientMessage.equals("bye")){
      System.out.println("Enter number :");
      clientMessage=br.readLine();
      outStream.writeUTF(clientMessage);
      outStream.flush();
      serverMessage=inStream.readUTF();
      System.out.println(serverMessage);
    }
    outStream.close();
    outStream.close();
    socket.close();
  }catch(Exception e){
    System.out.println(e);
  }
  }
}
```

OUTPU



```
C:\Users\sasi\java\Java\jdk1.8.0_241\bin\myjava>java multithreadclient
Enter number :
123
From Server to Client-1 Client has entered ::   123
Enter number :
34
From Server to Client-1 Client has entered ::   34
Enter number :
167
From Server to Client-1 Client has entered ::   167
Enter number :
bye
From Server to Client-1 Client has entered ::   bye

C:\Users\sasi\java\Java\jdk1.8.0_241\bin\myjava>
```

```
Microsoft Windows [Version 10.0.18362.1082]
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C:\Users\sasi>cd C:\Users\sasi\java\Java\jdk1.8.0_241\bin\myjava\

C:\Users\sasi\java\Java\jdk1.8.0_241\bin\myjava>javac multithreadclient.java

C:\Users\sasi\java\Java\jdk1.8.0_241\bin\myjava>java multithreadclient
Enter number :
890
From Server to Client-2 Client has entered ::   890
Enter number :
1000
From Server to Client-2 Client has entered ::   1000
Enter number :
12345
From Server to Client-2 Client has entered ::   12345
Enter number :
66
From Server to Client-2 Client has entered ::   66
Enter number :
bye
From Server to Client-2 Client has entered ::   bye

C:\Users\sasi\java\Java\jdk1.8.0_241\bin\myjava>
```
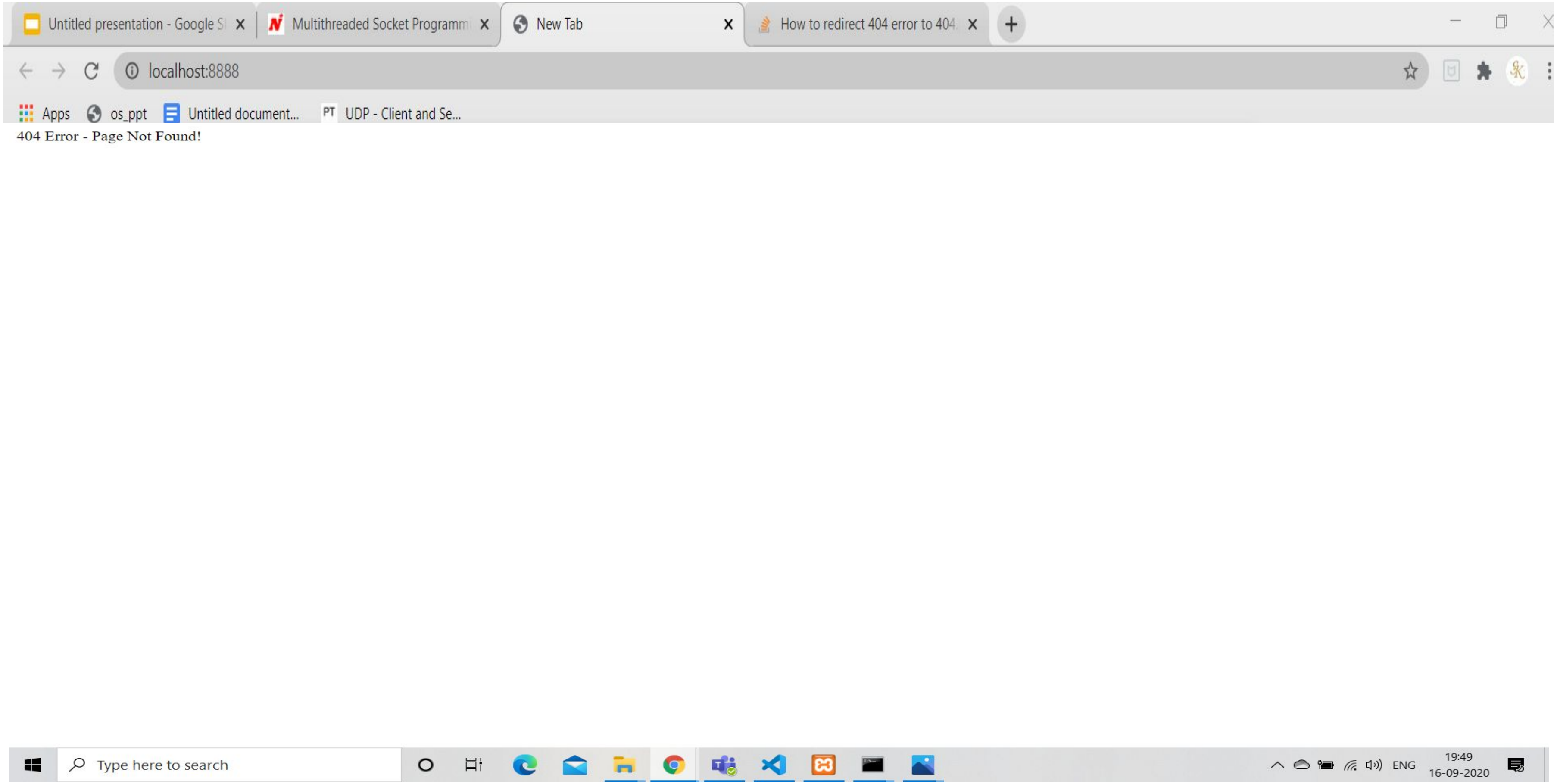

```
C:\Users\sasi\java\Java\jdk1.8.0_241\bin\myjava>java multithreadserver
Server Started ....
 >> Client No:1 started!
From Client-1: Number is :123
From Client-1: Number is :34
From Client-1: Number is :167
 >> Client No:2 started!
From Client-2: Number is :890
From Client-2: Number is :1000
From Client-1: Number is :bye
Client -1 exit!!
From Client-2: Number is :12345
From Client-2: Number is :66
From Client-2: Number is :bye
Client -2 exit!!
 >> Client No:3 started!
 >> Client No:4 started!
java.io.EOFException
Client -3 exit!!
 >> Client No:5 started!
java.io.EOFException
Client -4 exit!!
 >> Client No:6 started!
java.io.EOFException
Client -5 exit!!
java.io.EOFException
Client -6 exit!!
 >> Client No:7 started!
 >> Client No:8 started!
```

LOCALHOST ERROR



```
404 Error - Page Not Found!
```