Record (cycle 1)          SK. JAVEED SUHAIL

                          BECSE-C4

## Experiment ①:- Finding the IP address

**Aim :-** A simple program to print the IP address of system

**Algorithm :-**

① Import .net and .io packages

② Create a class ipclient

③ Create instance of InetAddress as ia. Use. getlocalHost() method.

④ If there is no exception print IP address

**Program :-**

```
import java.net.*;
import java.io.*;
public class ipclient {
public static void main (String args[]){
try {
   InetAddress ia = InetAddress.getlocalHost();
   System.out.println("The client system address is: "+ia);
}
catch (IOException e){
   System.out.println("The exception is: "+e); }
}
}
```

**Result :-** The program has been executed and the output has been recorded successfully.

EXPLORER                                    ipclient.java ×

∨ NETWORKINGLAB                    ipclient.java > ...
      chatclient1.class
      chatclient1.java              You, an hour ago | 1 author (You)
      chatserver1.class        1    import java.net.*;          You, 13 hours ago • Added cycle 1 experiments
      chatserver1.java         2    import java.io.*;
      Cip.class          M          You, an hour ago | 1 author (You)
      Cip.java                 3    // 39110926-SHAIK JAVEED SUHAIL
      dateclient.cl... M       4    public class ipclient {
      dateclient.java               Run | Debug
      dateserver.c... M        5    public static void main(String args[]) {
      dateserver.java          6        try {
      ipclient.class           7            InetAddress ia = InetAddress.getLocalHost();
      ipclient.java            8            System.out.println("The client system address is: " + ia);
      README.md                9        } catch (IOException e) {
      Sip.class          M     10           System.out.println("The exception is: " + e);
      Sip.java                 11       }
      udpclient.cl... M
      udpclient.java     1
      udpserver.cl... M
      udpserver.java     1

OUTPUT    DEBUG CONSOLE    TERMINAL

Microsoft Windows [Version 10.0.19043.1110]
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C:\Users\user\Desktop\NetworkingLab>javac ipclient.java

C:\Users\user\Desktop\NetworkingLab>java ipclient
The client system address is: DESKTOP-MD6G5O7/10.29.0.3

C:\Users\user\Desktop\NetworkingLab>

> OUTLINE
> TIMELINE
> JAVA PROJECTS

main*    ⊗ 0 ⚠ 2         You, 13 hours ago   Ln 1, Col 1   Spaces: 4   UTF-8   CRLF   Java   Go Live   JavaSE-11   Prettier

Experiment ② :- Date and Time Server.

Aim :- Creation of Date and time server programming in java.

Algorithm :-

Serva

① Import packages ·io , ·net , ·util .

② Create a server socket & bind it to port·

③ Listen for a new connection, when it arrives accept it

④ Read IP address set by client·

⑤ Display the client data

⑥ Repeat steps ① - ⑤ until server is terminated

⑦ close stream & server socket

client

① Create a client socket & connect it to servers port number

② Retrieve the IP address using built in function.

③ Send its address to server

④ Display Date & Time sent by server
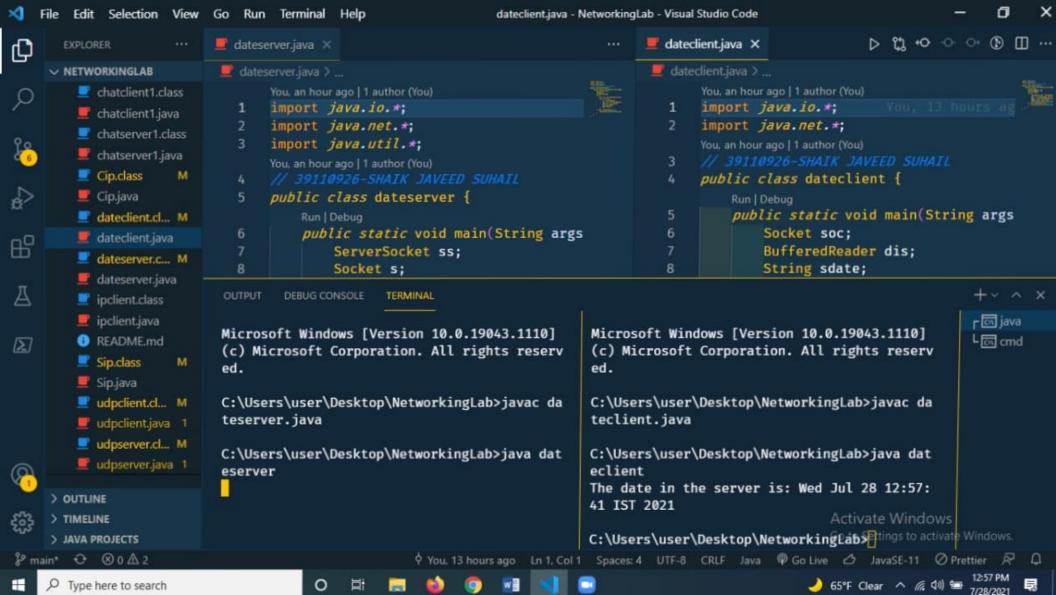
⑤ close client socket, input & output streams.

Program :-

Server

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

③

```java
import java.util.*;
public class dateserver {
public static void main(String args[]){
        ServerSocket ss;
        Socket s;
        PrintStream ps;
        try{
          ss= new ServerSocket (8020);
          while (true){
            s= ss.accept();
            Ps = new PrintStream (s.getOutputStream());
            Date d= new Date();
            Ps.println(d);
            Ps. close ();
            }
          }
          catch(IOException e){
            System.out.println("The exception is : "+e); }
          }
        }
```

## Client

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

public class dateclient {
    public static void main (String args[]){
        Socket soc;
```

```
BufferedReader dis;
String sdate;
try{
        InetAddress la = InetAddress.getLocalHost();
        Soc = new Socket(la, 8020);
        dis = new BufferedReader(new InputStreamReader(
                        Soc.getInputStream()));
        Sdate = dis.readline();
        System.out.printh("The date in server is :"+sdate);
}
Catch (IOException e) {
        System.out.printh("The exception is :"+ e);
}
}
}
```

Result :- The program has been executed & output has been recorded successfully.

EXPLORER                                     ● dateserver.java ✕                                  ● dateclient.java ✕

∨ NETWORKINGLAB                              ● dateserver.java > ...                              ● dateclient.java > ...

chatclient1.class                            You, an hour ago | 1 author (You)                   You, an hour ago | 1 author (You)
chatclient1.java                     1       import java.io.*;                            1      import java.io.*;              You, 13 hours ag
chatserver1.class                    2       import java.net.*;                           2      import java.net.*;
chatserver1.java                     3       import java.util.*;
Cip.class          M                                                                      You, an hour ago | 1 author (You)
                                             You, an hour ago | 1 author (You)             3      // 39110926-SHAIK JAVEED SUHAIL
Cip.java                             4       // 39110926-SHAIK JAVEED SUHAIL              4      public class dateclient {
dateclient.cl...   M                 5       public class dateserver {
dateclient.java                                                                                  Run | Debug
                                             Run | Debug                                  5          public static void main(String args
dateserver.c...    M                 6           public static void main(String args     6              Socket soc;
dateserver.java                      7               ServerSocket ss;                     7              BufferedReader dis;
ipclient.class                       8               Socket s;                            8              String sdate;
ipclient.java
ⓘ README.md                          OUTPUT    DEBUG CONSOLE    TERMINAL                                                          + ∨  ∧  ✕
Sip.class          M
Sip.java                             Microsoft Windows [Version 10.0.19043.1110]         Microsoft Windows [Version 10.0.19043.1110]    ⌐[cn] java
udpclient.cl...    M                 (c) Microsoft Corporation. All rights reserv        (c) Microsoft Corporation. All rights reserv    ∟[cn] cmd
udpclient.java     1                 ed.                                                 ed.
udpserver.cl...    M
udpserver.java     1                 C:\Users\user\Desktop\NetworkingLab>javac da        C:\Users\user\Desktop\NetworkingLab>javac da
                                     teserver.java                                       teclient.java

                                     C:\Users\user\Desktop\NetworkingLab>java dat        C:\Users\user\Desktop\NetworkingLab>java dat
                                     eserver                                             eclient
                                                                                         The date in the server is: Wed Jul 28 12:57:
                                     ▊                                                   41 IST 2021
∨ OUTLINE
∨ TIMELINE                                                                               Activate Windows
                                                                                         C:\Users\user\Desktop\NetworkingLab>▊ settings to activate Windows.
∨ JAVA PROJECTS

## Experiment ② :- Client Address at Server side.

**Aim :-** Design a program to print client address at server side.

**Algorithm :-**

### Server

① Import packages .net and .io packages

② Create a class Sip

③ Initialize the classes, server socket, wrt to objects.

④ Initialize the BufferedReader class to get the InputStream() method

⑤ Establish the connection with client system using client IP & server port 8020.

⑥ Read IP address from Socket

⑦ Print IP address at server.

### Client

① Import all required packages & create a Cip class

② Object instantiation for class Socket

③ Initialize class Print Stream for writing data into the socket through get output stream() method

④ Out IPAddress using class InetAddress with getLocalHost().

⑤ Establish a connection with server system using IP addrs port number.

⑥ Write the Ip address into socket.

⑥

# Program :-

```java
import java.io.*;
import java.net.*;
public class sip {
    public static void main (String args[]) {
        ServerSocket ss;
        Socket s;
        BufferedReader dis;
        String ip;
        try {
            ss = new ServerSocket(8020);
            while (true) {
                s = ss.accept();
                dis = new BufferedReader (new InputStreamReader(
                        s.getInputStream()));
                ip = dis.readLine();
                System.out.println ("Ip address of the client
                        System is " +ip);
            }
        }
        catch (IOException e) {
            System.out.println ("The exception is: "+e);
        }
    }
}
```

## Client

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

Public class Cip {

    public static void main (String args[]) {

        Socket soc;
        Print Stream ps;
        try {
            InetAddress ia = Inet Address. getLocalHost();
            soc = new socket (ia, 8020);
            Ps= new PrintStream (soc. get OutputStream());
            Ps.println (ia);
        }
        catch (IOException e) {
            System.out.println ("The Exception is : " +e);
        }
    }
}
```

Result :- The program has been created & output has been recorded ~~seef~~ successfully.

EXPLORER                          ...

∨ NETWORKINGLAB
   chatclient1.class
   chatclient1.java
   chatserver1.class
   chatserver1.java
   Cip.class          M
   Cip.java
   dateclient.cl...    M
   dateclient.java
   dateserver.c...    M
   dateserver.java
   ipclient.class
   ipclient.java
   README.md
   Sip.class          M
   Sip.java
   udpclient.cl...     M
   udpclient.java      1
   udpserver.cl...    M
   udpserver.java      1

> OUTLINE
> TIMELINE
> JAVA PROJECTS

**Sip.java** ✕

Sip.java > ...

```java
You, an hour ago | 1 author (You)
1   import java.io.*;
2   import java.net.*;
You, an hour ago | 1 author (You)
3   // 39110926-SHAIK JAVEED SUHAIL
4   public class Sip {
        Run | Debug
5       public static void main(String args
6           ServerSocket ss;
7           Socket s;
8           BufferedReader dis;
9           String ip;
```

**Cip.java** ✕

Cip.java > ...

```java
You, an hour ago | 1 author (You)
1   import java.io.*;          You, 13 hours ag
2   import java.net.*;
You, an hour ago | 1 author (You)
3   // 39110926-SHAIK JAVEED SUHAIL
4   public class Cip {
        Run | Debug
5       public static void main(String args
6           Socket soc;
7           PrintStream ps;
8           try {
9               InetAddress ia = InetAddres
```

OUTPUT     DEBUG CONSOLE     **TERMINAL**

```
Microsoft Windows [Version 10.0.19043.1110]
(c) Microsoft Corporation. All rights reserv
ed.

C:\Users\user\Desktop\NetworkingLab>javac Si
p.java

C:\Users\user\Desktop\NetworkingLab>java Sip

Ip address of the client system isDESKTOP-MD
6G507/10.29.0.3
```

```
Microsoft Windows [Version 10.0.19043.1110]
(c) Microsoft Corporation. All rights reserv
ed.

C:\Users\user\Desktop\NetworkingLab>javac Ci
p.java

C:\Users\user\Desktop\NetworkingLab>java Cip

C:\Users\user\Desktop\NetworkingLab>
```

⌐🖵 java
└🖵 cmd

main*   ⊗ 0 ⚠ 2          You, 13 hours ago   Ln 1, Col 1   Spaces: 4   UTF-8   CRLF   Java   Go Live   JavaSE-11   Prettier

65°F Clear          12:55 PM   7/28/2021

## Experiment ④ :- Creating a UDP ;

__Aim:-__ To perform a java program for UDP client & server

__Algorithm:-__

### Server

① Create a new Datagram Socket, packet

② Create a message to be sent

③ Convert message to byts

④ Create a packet

⑤ Send packet

⑥ Wait for acknowledgement from client

⑦ Print data from client

### client

① Create a new Datagram socket, packet

② get the packet

③ print the content in packet

④ Create a new packed

⑤ Send this to server

__Program:-__

### Server

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

public class udpserver {
        public static int client = 789;
        public static int server = 790;
```

⑨

```java
public static void main(String args[]) throws IOException {
    String s;
    InetAddress id = InetAddress.getLocalHost();
    BufferedReader dis = new BufferedReader(new InputStreamReader(
                                            System.in));
    DatagramSocket ds = new DatagramSocket(server);
    byte b[] = new byte[1024];
    System.out.println(" Server side --- Sending ---");
    System.out.println("\n"+id);
    while(true) {

        s = dis.readline();
        if (s.equals("end")) {
            b = s.getBytes();
            DatagramPacket dp = new DatagramPacket(b, s.length(), id,
                                                              client);
            ds.send(dp);
            break;
        } else {

            b = s.getBytes();
            DatagramPacket dp = new DatagramPacket(b, s.length(), id, client);
            ds.send(dp);
        }
    }
}
```

<center>Client</center>

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

```java
public class udpclient {
    public static int client = 789;
    public static void main(String args[]) throws IOException {
    DatagramSocket ds = new DatagramSocket (client);
    byte b[] = new byte [1024];
    System.out.println("client ... receiving. ... ");
    while (true) {
        DatagramPacket dp = new DatagramPacket (b, b.length);
        ds.receive (dp);
        String s = new String (dp.getData (),0, dp.getLength ());
        if (s.equals ("end")) {
            break; }
        else {
        System.out.println (s);
        }
    }
    }
}
```

Result :- The program has been executed & output has been

recorded successfully.

File   Edit   Selection   View   Go   Run   Terminal   Help

**udpserver.java** 1 ✕          **udpclient.java** 1 ✕

EXPLORER

NETWORKINGLAB
- chatclient1.class
- chatclient1.java
- chatserver1.class
- chatserver1.java
- Cip.class          M
- Cip.java
- dateclient.cl...   M
- dateclient.java
- dateserver.c...    M
- dateserver.java
- ipclient.class
- ipclient.java
- README.md
- Sip.class          M
- Sip.java
- udpclient.cl...    M
- udpclient.java     1
- udpserver.cl...    M
- udpserver.java     1

udpserver.java > ...

```java
You, an hour ago | 1 author (You)
1   import java.net.*;
2   import java.io.*;
You, an hour ago | 1 author (You)
3   // 39110926-SHAIK JAVEED SUHAIL
4   public class udpserver {
5       public static int client = 789;
6       public static int server = 790;
```

udpclient.java > ...

```java
You, an hour ago | 1 author (You)
1   import java.net.*;
2   import java.io.*;
You, an hour ago | 1 author (You)
3   // 39110926-SHAIK JAVEED SUHAIL
4   public class udpclient {
5       public static int client = 789;
6
```

OUTPUT   DEBUG CONSOLE   **TERMINAL**

```
Microsoft Windows [Version 10.0.19043.1110]
(c) Microsoft Corporation. All rights reserv
ed.

C:\Users\user\Desktop\NetworkingLab>javac ud
pserver.java

C:\Users\user\Desktop\NetworkingLab>java udp
server
Server Side.... Sending....

DESKTOP-MD6G507/10.29.0.3
Hello I am SHAIK JAVEED SUHAIL
My RegNo:39110926
My RollNo:19S115591
```

```
Microsoft Windows [Version 10.0.19043.1110]
(c) Microsoft Corporation. All rights reserv
ed.

C:\Users\user\Desktop\NetworkingLab>javac ud
pclient.java

C:\Users\user\Desktop\NetworkingLab>java udp
client
client....receiving....
Hello I am SHAIK JAVEED SUHAIL
My RegNo:39110926
My RollNo:19S115591
```

java
javac

> OUTLINE
> TIMELINE
> JAVA PROJECTS

main*   ⓧ 0 △ 2        You, 13 hours ago   Ln 1, Col 1   Spaces: 4   UTF-8   CRLF   Java   Go Live   JavaSE-11   Prettier

Type here to search

12:52 PM
7/28/2021

65°F Clear

# Experiment ⑤ :- Simple chat program

**Aim:-** A program to design a simple chat program.

**Algorithm :-**

### Server:

① Import required packages .io & .net.

② Create a class chatserver_1.

③ Initialize socket server as SS, Buffered Reader as cin.

④ Initialize client for client message, server for server message

⑤ Initialize Print Stream as cout & string as s.

⑥ End program if 'bye' is typed

### Client

① Import required packages .io & .net.

② Create a class chatserver1

③ Initialize server socket of ss with socket no 2000.

④ Initialize Print Stream as cout & string as s.

⑤ Initialize Buffered Reader as cin.

⑥ End program if 'bye' is typed.

## Program :-

### ~~Server~~ Client

```
import java.net.*;
import java.io.*;
public class chatclient1 {
    public static void main (string args[]) throws Exception {
        Socket sk = new Socket(InetAddress.getLocalHost(), 2000);
```

```java
BufferedReader sin = new BufferedReader(new InputStreamReader(sk.get
                                                    InputStream()));
PrintStream sout = new PrintStream(sk.getOutputStream());
BufferedReader stdin = new BufferedReader(new InputStreamReader(System.in));
String s;
while(true) {

    System.out.print("Client:");
    s = stdin.readLine();
    sout.println(s);
    System.out.print("Server: "+st+"\n");
    if(s.equalsIgnoreCase("BYE"))
            break;
}
    sk.close();
    sin.close();
    sout.close();
    stdin.close();
    }
}
```

Server
====

```java
import java.net.*;
import java.io.*;
public class chatserver1 {
        public static void main(String args[]) throws IOException {

            ServerSocket ss = new ServerSocket(2000);
            Socket sk = ss.accept();
            BufferedReader cin = new BufferedReader(new InputStream
            Reader(sk.getInputStream()));
```

```
Print Stream cout = new Pointstream (sk.getOutputStream());
Buffered Stream stdin = new BufferedReader(new InputStreamReader(
                              System.in));
String s;
while (true) {

    s = cin.readline();
    if (s.equalsIgnoreCase("END") {
            cout.println("BYE");
            break;
    }
    System.out.print("Client : "+ st " \n");
    System.out.print("Server : ");

    s = stdin.readline();
    cout.println(s);
}
ss.close();
sk.close();
cin.close();
cout.close();
stdin.close();
}
}
```

Result :- The program has been executed & out is recorded
           successfully.

EXPLORER                          chatserver1.java ×                    chatclient1.java ×

NETWORKINGLAB                     chatserver1.java > ...                chatclient1.java > ...

chatclient1.class                 You, 15 minutes ago | 1 author (You)   You, 15 minutes ago | 1 author (You)
chatclient1.java              1   import java.net.*;              1   import java.io.*;          You, 12 hours ag
chatserver1.class             2   import java.io.*;              2   import java.net.*;
chatserver1.java                  You, 15 minutes ago | 1 author (You)   You, 15 minutes ago | 1 author (You)
Cip.class            M        3   // 39110926-SHAIK JAVEED SUHAIL    3   // 39110926-SHAIK JAVEED SUHAIL
Cip.java                      4   public class chatserver1 {     4   public class chatclient1 {
dateclient.cl...     M                Run | Debug                            Run | Debug
dateclient.java               5       public static void main(String args    5       public static void main(String args
dateserver.c...      M        6          ServerSocket ss = new ServerSoc...   6          Socket sk = new Socket(InetAddr...
dateserver.java
ipclient.class                OUTPUT    DEBUG CONSOLE    TERMINAL                                              + ∨  ∧  ×
ipclient.java
README.md                                                                                              ┌ cmd
Sip.class            M        Microsoft Windows [Version 10.0.19043.1110]    Microsoft Windows [Version 10.0.19043.1110]   └ cmd
Sip.java                      (c) Microsoft Corporation. All rights reserv    (c) Microsoft Corporation. All rights reserv
udpclient.cl...      M        ed.                                             ed.
udpclient.java       1
udpserver.cl...      M        C:\Users\user\Desktop\NetworkingLab>javac ch    C:\Users\user\Desktop\NetworkingLab>javac ch
udpserver.java       1        atserver1.java                                  atclient1.java

                              C:\Users\user\Desktop\NetworkingLab>java cha    C:\Users\user\Desktop\NetworkingLab>java cha
                              tserver1                                        tclient1
                              Client : Hey there I am SHAIK JAVEED SUHAIL     Client : Hey there I am SHAIK JAVEED SUHAIL
OUTLINE                       Server : What is your RegNo ?                   Server : What is your RegNo ?
TIMELINE                      Client : 39110926                               Client : 39110926
JAVA PROJECTS                 Server : What is your RollNo ?                  Server : What is your RollNo ?
                              Client : 19S115591                              Client : 19S115591
                              Server : bye                                    Server : bye

main*   ⊗ 0 ⚠ 2        You, 12 hours ago   Ln 1, Col 1   Spaces: 4   UTF-8   CRLF   Java   Go Live   JavaSE-11   Prettier