Contents

EXPERIMENT – 2

AIM OF THE EXPERIMENT: -

Write a program to find the IP address and host name of your system.

CODE: -

```
package iphost;

        import java.net.InetAddress;

        import java.net.UnknownHostException;

public class Ip_Host_Name {

        public static void main(String[] args) {

                InetAddress ip;

                String HostName;

                try {

                        ip = InetAddress.getLocalHost();

                        HostName = ip.getHostName();

                        System.out.println("Your IP Adddress - " + ip);

                        System.out.println("Your Host Name - " + HostName);

                }

                catch (UnknownHostException e) {

                        e.printStackTrace();

                }


        }

}
```

RESULT: -

```
Your IP Adddress - LAPTOP-DESKOP/192.168.56.1

Your Host Name - LAPTOP-DESKOP
```

EXPERIMENT – 3

AIM OF THE EXPERIMENT: -

Some basic java programs

CODE: -

- TO FIND THE AREA OF A CIRCLE:

```
package basicprogram;

import java.util.Scanner;

public class basicprogram {

	public static void main(String[] args) {

		Scanner a=new Scanner(System.in);

		System.out.println("Enter the radius- ");

		int radius= a.nextInt();

		double area = 3.14*radius*radius;

		System.out.println("Area of the circle = " + area);

	}

}
```

RESULT: -

```
Enter the radius-

10

Area of the circle = 314.0
```

- **TO FIND IF A GIVEN YEAR IS A LEAP YEAR OR NOT**:

```
package basicprogram;

import java.util.Scanner;

public class basicprogram2 {
    public static void main(String[] args) {
        Scanner a=new Scanner(System.in);
        System.out.println("Enter the leap year- ");
        int ly= a.nextInt();
             if ((ly % 4 == 0)||(ly % 100 == 0)) {
                 System.out.print(ly + " is a leap year");
             }else {
                     System.out.println(ly + " is not a leap year");
             }
    }
}
```

RESULT:

```
Enter the leap year-
2099
2099 is not a leap year
```

- **TO FIND IF A GIVEN NUMBER IS DIVISIBLE BY BOTH 2 AND 5**:

```
package basicprogram;
import java.util.Scanner;
public class basicprogram3 {
    public static void main(String[] args) {
        Scanner a=new Scanner(System.in);
        System.out.println("Enter the Number- ");
        int n= a.nextInt();
             if ((n % 2 == 0) && (n % 5 == 0)) {
        System.out.print(n + " is a number divisible by both 2 and 5.");
```

```
                          } else {
                System.out.println(n + " is not divisible by both 2 and 5.");
        }
}
}
```

RESULT:

```
Enter the Number-
87
87 is not divisible by both 2 and 5.
```

EXPERIMENT – 4

AIM OF THE EXPERIMENT: -

Write a program to design a one-way communication from client to server using TCP client server application.

CODE: -

SERVER:

```
package task3;

import java.io.*;

import java.net.ServerSocket;

import java.net.Socket;

public class task3server {

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

		ServerSocket sersock = new ServerSocket(6000);

		System.out.println("server ready");

		Socket sock = sersock.accept();

		OutputStream ostream = sock.getOutputStream();

		BufferedWriter bw1 = new BufferedWriter(new OutputStreamWriter(ostream));

		String s2 = "Hello " + new java.util.Date();

		bw1.write(s2);

		bw1.close(); ostream.close(); sock.close(); sersock.close();

	}

}
```

CLIENT:

```
package task3;

import java.io.*;

import java.net.Socket;

public class task3client {

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

                Socket sock = new   Socket("127.0.0.1", 6000);

                InputStream istream = sock.getInputStream();

                BufferedReader br1 = new BufferedReader(new
InputStreamReader(istream));

                String s1 = br1.readLine();

                System.out.println(s1);

                br1.close(); istream.close(); sock.close();

        }

}
```

RESULT: -

SERVER:

```
Server is ready
```

CLIENT:

```
Hello Fri May 29 13:48:32 IST 2020
```

EXPERIMENT – 5

AIM OF THE EXPERIMENT: -

Write a program to design a one-way communication from server to client using TCP client server application.

CODE: -

SERVER:

```
package task4;

import java.net.Socket;

import java.util.Scanner;

import java.net.ServerSocket;

import java.io.PrintStream;;

public class Task4Server {

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

                ServerSocket ss=new ServerSocket(5099);

                Socket ss1=ss.accept();

                System.out.println("Enter the Statement - ");

                Scanner s = new Scanner(System.in);

                String c = s.nextLine();

                PrintStream p = new PrintStream(ss1.getOutputStream());

                p.println(c);

        }

}
```

CLIENT:

```
package task4;

import java.net.Socket;

import java.util.Scanner;

public class Task4Client {

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

    Socket S0 = new Socket("127.0.0.1",5099);

    Scanner S1 = new Scanner(S0.getInputStream());

    String L  = S1.nextLine();

    System.out.println("the received statement - " + L);

    }

}
```

RESULT: -

SERVER:

```
Enter the Statement -
Jupiter is a gas giant.
```

CLIENT:

```
the received statement - Jupiter is a gas giant.
```

EXPERIMENT -6

AIM OF THE EXPERIMENT: -

Write a program to design two-way communication using TCP client-server application.

CODE: -

CLIENT:

```
package task5;

import java.io.*;

import java.net.Socket;

import java.util.Scanner;

public class task5client {

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

        Socket s0 = new Socket("127.0.0.1",3000);

        System.out.println("enter a value");

        Scanner s = new Scanner(System.in);

        int n = s.nextInt();

        PrintStream p = new PrintStream(s0.getOutputStream());

        p.println(n);

        Scanner s1 = new Scanner(s0.getInputStream());

        int t = s1.nextInt();

        System.out.println("final output = " + t);

        }

}
```

SERVER:

```java
package task5;
import java.io.*;
import java.net.ServerSocket;
import java.io.PrintStream;
import java.net.Socket;
import java.util.Scanner;
public class task5server {
	public static void main(String[] args)throws Exception {
	ServerSocket ss = new ServerSocket (3000);
	Socket ss1 = ss.accept();
	Scanner s1 = new Scanner (ss1.getInputStream());
	int a = s1.nextInt();
	int b = 30;
	int c = a+b;
	PrintStream p = new PrintStream(ss1.getOutputStream());
	p.println(c);
	}
}
```

RESULT: -

CLIENT:

```
enter a value
25
final output = 55
```

EXPERIMENT – 7

AIM OF THE EXPERIMENT: -

Write a program to transfer text file using TCP client-server application.

CODE: -

SERVER:

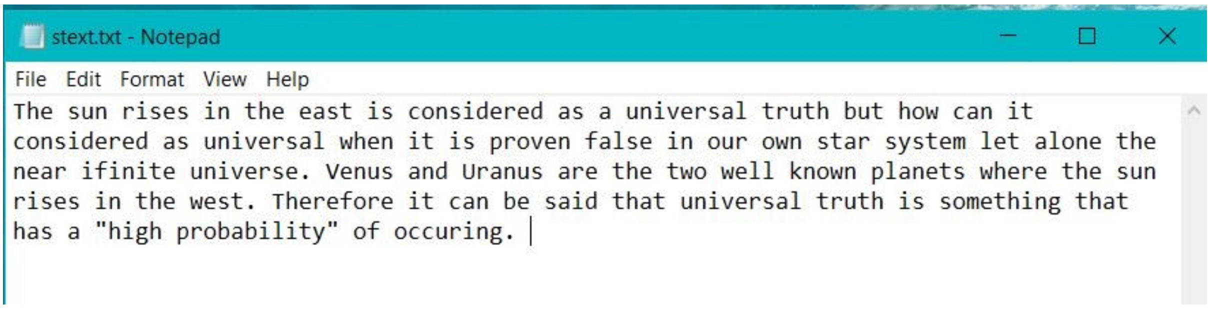
```
package task6;
import java.io.FileInputStream;
import java.io.OutputStream;
import java.net.ServerSocket;
import java.net.Socket;
public class task6server {
        public static void main(String[] args)throws Exception {
                ServerSocket ss = new ServerSocket (3100);
                Socket ss1 = ss.accept();
                FileInputStream f1 = new FileInputStream ("C:\\stext.txt");
                byte d[] = new byte[200];
                f1.read(d,0,d.length);
                OutputStream os = ss1.getOutputStream();
                os.write(d,0,d.length);
                os.close(); f1.close(); ss1.close(); ss.close();
                }
}
```

CLIENT:

```
package task6;
import java.io.*;
import java.net.InetAddress;
import java.net.Socket;
public class task6client {
	public static void main(String[] args)throws Exception {
		Socket s0 = new Socket("127.0.0.1",3100);
		byte[] d = new byte[200];
		InputStream is = s0.getInputStream();
		FileOutputStream f0 = new FileOutputStream("C:\\Users\\LANIAKEA\\Desktop\\PROGRAMS\\JAVA PROGRAMS (ECLIPSE)\\Semester-2\\src\\task6\\ctext.txt");
		is.read(d,0,d.length);
		f0.write(d,0,d.length);
		f0.close();
		is.close();
		s0.close();
	}
}
```

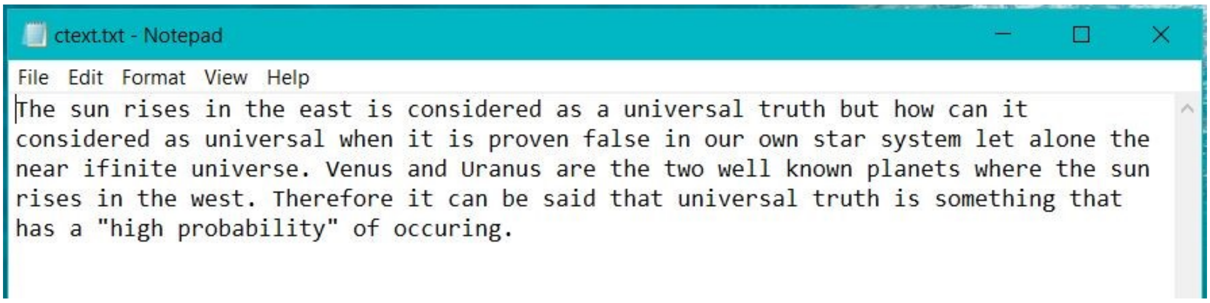
RESULT: -

SERVER:



```
The sun rises in the east is considered as a universal truth but how can it
considered as universal when it is proven false in our own star system let alone the
near ifinite universe. Venus and Uranus are the two well known planets where the sun
rises in the west. Therefore it can be said that universal truth is something that
has a "high probability" of occuring.
```

CLIENT:



```
The sun rises in the east is considered as a universal truth but how can it
considered as universal when it is proven false in our own star system let alone the
near ifinite universe. Venus and Uranus are the two well known planets where the sun
rises in the west. Therefore it can be said that universal truth is something that
has a "high probability" of occuring.
```

EXPERIMENT – 8

AIM OF THE EXPERIMENT: -

Write a program to design a one-way communication from client to server using UDP client-server application.

CODE: -

CLIENT:

```
package task7;
import java.net.*;
import java.util.Scanner;
public class task7client {
        public static void main(String[] args)throws Exception {
                DatagramSocket a = new DatagramSocket();
                Scanner s = new Scanner (System.in);
                System.out.println("Enter the message to be sent: ");
                String n = s.nextLine();
                byte ar[] = new byte [1000];
                ar = n.getBytes();
                DatagramPacket p = new DatagramPacket (ar,ar.length,
InetAddress.getLocalHost(),4990);
                a.send(p);
        }
}
```

SERVER:

```
package task7;
import java.net.*;
public class task7server {
    public static void main(String[] args)throws Exception {
        DatagramSocket s = new DatagramSocket(4990);
        byte b[] = new byte[1000];
        DatagramPacket t = new DatagramPacket(b,b.length);
        s.receive(t);
        String st = new String(t.getData());
        System.out.println("Received message is: ");
        System.out.println(st);
    }
}
```

RESULT: -

CLIENT:

```
Enter the message to be sent:
Milky way galaxy is a spiral Galaxy.
```

SERVER:

```
Received message is:
Milky way galaxy is a spiral Galaxy.
```

EXPERIMENT – 9

AIM OF THE EXPERIMENT: -

Write a program to design a one-way communication from server to client using UDP client-server application.

CODE: -

SERVER:

```
package task8;

import java.net.*;

import java.util.Scanner;

public class task8server {

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

        DatagramSocket a = new DatagramSocket();

        Scanner s = new Scanner (System.in);

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

        String n = s.nextLine();

        byte ar[] = new byte [1000];

        ar = n.getBytes();

        DatagramPacket p = new DatagramPacket (ar,ar.length, InetAddress.getLocalHost(),3990);

        a.send(p);

        }

}
```

CLIENT:

```
package task8;
import java.net.*;
public class task8client {
        public static void main(String[] args)throws Exception {
        DatagramSocket s = new DatagramSocket(3990);
        byte b[] = new byte[1000];
        DatagramPacket t = new DatagramPacket(b,b.length);
        s.receive(t);
        String st = new String(t.getData());
        System.out.println("The received message is: ");
        System.out.println(st);
        }
}
```

RESULTS: -

SERVER:

```
Enter the message:
Andromeda Galaxy is a bird shaped Galaxy.
```

CLIENT:

```
The received message is:
Andromeda Galaxy is a bird shaped Galaxy.
```

EXPERIMENT – 10

AIM OF THE EXPERIMENT: -

Write a program to design two-way communication using UDP Client-Server application.

CODE: -

SERVER:

```
package task9;

import java.net.*;

public class task9server {

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

        DatagramSocket s = new DatagramSocket(3000);

        byte d[] = new byte [1000];

        DatagramPacket t = new DatagramPacket (d,d.length);

        s.receive(t);

        String k = new String (t.getData());

        int a = Integer.parseInt(k.trim());

        int b = 10;

        int c = a+b;

        byte d2[] = new byte [1000];

        d2 = String.valueOf(c).getBytes();

        DatagramPacket t1 = new 
DatagramPacket(d2,d2.length,InetAddress.getLocalHost(),t.getPort());

        s.send(t1);

        }

}
```

CLIENT:

```
package task9;

import java.net.*;

import java.util.Scanner;

public class task9client {

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

        DatagramSocket a = new DatagramSocket();

        Scanner s = new Scanner (System.in);

        System.out.println("enter the value: ");

        int n = s.nextInt();

        byte b[] = new byte [1000];

        b = String.valueOf(n).getBytes();

        DatagramPacket p = new
DatagramPacket(b,b.length,InetAddress.getLocalHost(),3000);

   a.send(p);

   byte b1[] = new byte[1000];

   DatagramPacket p1 = new DatagramPacket (b1,b1.length);

   a.receive(p1);

   String t = new String(p1.getData());

   int c = Integer.parseInt(t.trim());

   System.out.println("the result is: ");

   System.out.println(c);

        }

}
```

RESULT: -

CLIENT:

```
enter the value:

28

the result is:

38
```

EXPERIMENT – 11

AIM OF THE EXPERIMENT: -

To write a server-client program in Java for chatting using UDP.

CODE: -

SERVER:

```
package task11;

import java.net.DatagramSocket;

import java.net.DatagramPacket;

import java.io.IOException;

import java.util.Scanner;

import java.net.InetAddress;

public class task11server {

        public static void main(String[] args){

                try {

                DatagramSocket dsock = new DatagramSocket( 8080 , InetAddress.getByName("127.0.0.1") );

      byte[] arr = new byte[1000];

      DatagramPacket dpack_send , dpack_recv ;

      Scanner inp = new Scanner(System.in);

      while(true){

         clearBytes(arr);

         dpack_recv = new DatagramPacket( arr , arr.length );

         dsock.receive(dpack_recv);

         System.out.println("Client : " + new String(arr) );
```

```
          clearBytes(arr);

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

          arr = (inp.nextLine()).getBytes();

          dpack_send =  new DatagramPacket( arr , arr.length ,
dpack_recv.getAddress() , dpack_recv.getPort() );

          dsock.send(dpack_send);

      }

                } catch(IOException e){

      System.out.println("Error : " + e );

      }

  }

                public static void clearBytes(byte[] arr){

                   for( int i = 0 ; i < arr.length ; i ++ )

                      arr[i] = '\0' ;

                }

         }
```

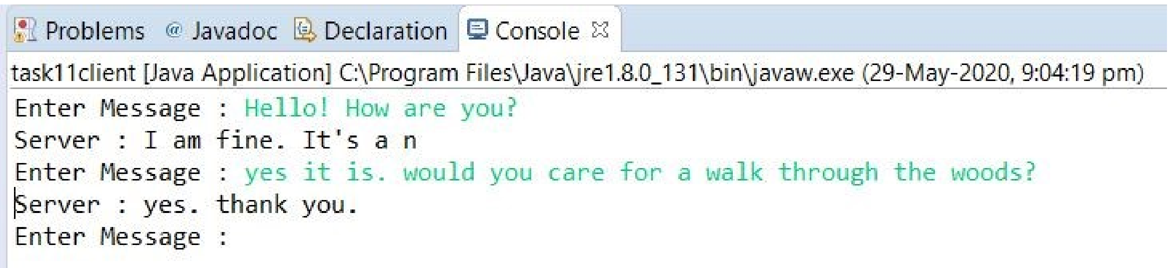
CLIENT:

```
package task11;

import java.net.DatagramSocket;

import java.net.DatagramPacket;

import java.io.IOException;

import java.util.Scanner;

import java.net.InetAddress;

public class task11client {

         public static void main(String[] args) {

                try {
}

                DatagramSocket dsock = new DatagramSocket();

      byte[] arr = new byte[1000];

      DatagramPacket dpack_send ,dpack_recv ;

      Scanner inp = new Scanner(System.in);

      while(true){

        clearBytes(arr);

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

        arr = (inp.nextLine()).getBytes();

        dpack_send =  new DatagramPacket( arr , arr.length ,
InetAddress.getByName("127.0.0.1") , 8080 );

        dsock.send(dpack_send);

        clearBytes(arr);

        dpack_recv = new DatagramPacket( arr , arr.length );

        dsock.receive(dpack_recv);

        System.out.println("Server : " + new String(arr) );

      }

    }catch(IOException e){

      System.out.println("Error : " + e );

    }

  }

  public static void clearBytes(byte[] arr){

    for( int i = 0 ; i < arr.length ; i ++ )

      arr[i] = '\0' ;

  }

}
```

RESULT: -

CLIENT	SERVER
Enter Message : Hello! How are you? Enter Message : yes it is. would you care for a walk through the woods?	Enter Message : I am fine. It's a nice day, isn't it? Enter Message : yes. thank you.

IMAGE OF THE CHATTING:



```
task11client [Java Application] C:\Program Files\Java\jre1.8.0_131\bin\javaw.exe (29-May-2020, 9:04:19 pm)
Enter Message : Hello! How are you?
Server : I am fine. It's a n
Enter Message : yes it is. would you care for a walk through the woods?
Server : yes. thank you.
Enter Message :
```

EXPERIMENT – 12

AIM OF THE EXPERIMENT: -

To write a server-client program in Java for chatting using TCP.

CODE: -

SERVER:

```
package task12;
import java.io.BufferedReader;
import java.io.InputStreamReader;
import java.io.PrintStream;
import java.net.ServerSocket;
import java.net.Socket;
import java.util.Scanner;
public class task12server {
	public static void main(String[] args)throws Exception {
		ServerSocket ss = new ServerSocket(9050);
		Socket s0 = ss.accept();
		BufferedReader br = new BufferedReader(new InputStreamReader(s0.getInputStream()));
		PrintStream ps = new PrintStream(s0.getOutputStream());
		BufferedReader br2 = new BufferedReader(new InputStreamReader(System.in));
		String s;
		Scanner sc = new Scanner(System.in);
		while(true)
		{
```

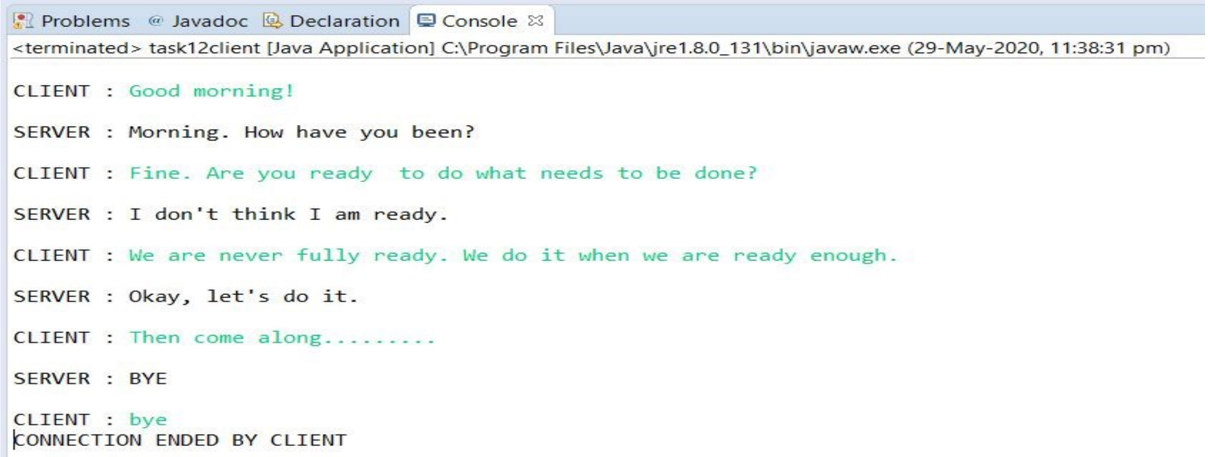
```
            s = br.readLine();
            System.out.println("\nCLIENT : "+s+"\n");
            System.out.print("SERVER : ");
            s = sc.nextLine();
            if(s.equalsIgnoreCase("bye"))
            {
            ps.println("BYE");
            System.out.println("CONNECTION ENDED BY SERVER");
                break;
            }
            ps.println(s);
        }
        ps.close(); sc.close(); br2.close(); br.close(); s0.close(); ss.close();
    }
}
```

CLIENT:

```
package task12;
import java.io.*;
import java.net.*;
public class task12client {
    public static void main(String[] args)throws Exception {
        Socket s0  = new
Socket(InetAddress.getLocalHost().getHostAddress(),9050);
        BufferedReader br = new BufferedReader(new
InputStreamReader(s0.getInputStream()));
        PrintStream ps = new PrintStream(s0.getOutputStream());
```

```
                    BufferedReader br2 = new BufferedReader(new
InputStreamReader(System.in));
                    String s;
                    while(true)
                    {         System.out.print("\nCLIENT : ");
                              s = br2.readLine();
                              ps.println(s);
                              if(s.equalsIgnoreCase("bye"))
                              {
                              System.out.println("CONNECTION ENDED BY CLIENT");
                              break;
                              }
                              s = br.readLine();
                              System.out.print("\nSERVER : "+s+"\n");
                    }
                    ps.close(); br2.close(); br.close(); s0.close();
          }
}
```

RESULT: -



```
<terminated> task12client [Java Application] C:\Program Files\Java\jre1.8.0_131\bin\javaw.exe (29-May-2020, 11:38:31 pm)

CLIENT : Good morning!

SERVER : Morning. How have you been?

CLIENT : Fine. Are you ready  to do what needs to be done?

SERVER : I don't think I am ready.

CLIENT : We are never fully ready. We do it when we are ready enough.

SERVER : Okay, let's do it.

CLIENT : Then come along.........

SERVER : BYE

CLIENT : bye
CONNECTION ENDED BY CLIENT
```