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# 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**:

**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();

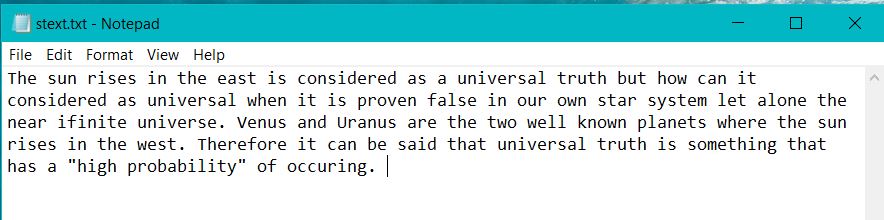
s0.close();

}

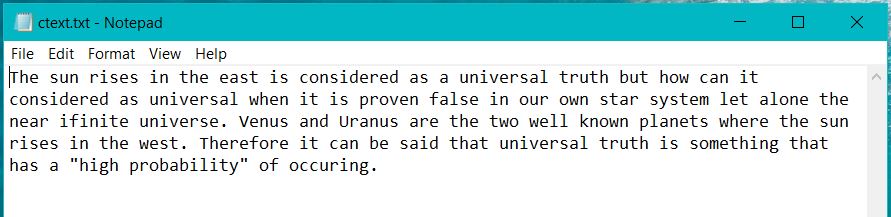
}

**RESULT**: -

**SERVER**:



**CLIENT**:



# 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' ;

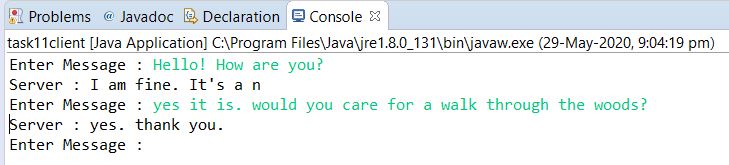
}

}

**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:*



# 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**: -

