**ASSIGNMENT NO – 2**

**TITLE -** Design a distributed application using RPC for remote computation where client submits an integer value to the server and server calculates factorial and returns the result to the client program.

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**SOURCE CODE:**

**Client.java**

import java.io.\*;

import java.net.\*;

import java.util.\*;

class client

{

public static void main(String args[])

{

try{

InetAddress ip = InetAddress.getByName("10.65.12.64");

Socket client=new Socket(ip,3378);

DataInputStream din = new DataInputStream(client.getInputStream());

DataOutputStream dout = new DataOutputStream(client.getOutputStream());

Thread t=new ClientThread(client,din,dout);

t.start();

}

catch(Exception e)

{

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

}

}

}

class ClientThread extends Thread

{

Socket client;

DataInputStream din;

DataOutputStream dout;

Scanner sc= new Scanner(System.in);

public ClientThread(Socket client,DataInputStream din,

DataOutputStream dout)

{

this.client=client;

this.din=din;

this.dout=dout;

}

public void run()

{

try

{

System.out.println("Which Operation You Want to Perform..??? :\n ");

System.out.println("1.Addition of two number\n2.Factorial of Number\n");

String c=sc.next();

dout.writeUTF(c);

int choice=Integer.parseInt(c);

switch(choice)

{

case 1:

System.out.println("Enter number 1:");

String no1=sc.next();

dout.writeUTF(no1);

System.out.println("Enter number 2:");

String no2=sc.next();

dout.writeUTF(no2);

String add=din.readUTF();

System.out.println("Addition is : "+ add);

break;

case 2:

System.out.println("Enter number for factorial: ");

String num=sc.next();

dout.writeUTF(num);

String fact=din.readUTF();

System.out.println("Factorial is : "+ fact);

break;

case 3:

this.client.close();

default:

System.out.println("Successfully exited......");

}

}

catch(Exception e)

{

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

}

}

}

**Server1.java**

import java.io.\*;

import java.net.\*;

class server1

{

public server1()

{

System.out.println("Connected");

}

public static void main(String args[])

{

try{

ServerSocket ss=new ServerSocket(3378);

Socket client=ss.accept();

DataInputStream din=new DataInputStream(client.getInputStream());

DataOutputStream dout=new DataOutputStream(client.getOutputStream());

int choice=Integer.parseInt(din.readUTF());

switch(choice)

{

case 1:

int no1=Integer.parseInt(din.readUTF());

int no2=Integer.parseInt(din.readUTF());

int no3=no1+no2;

String add=Integer.toString(no3);

dout.writeUTF(add);

case 2:

int facto=1;

int no=Integer.parseInt(din.readUTF());

for(int i=no;i>1;i--)

facto\*=i;

String fact=Integer.toString(facto);

dout.writeUTF(fact);

}

client.close();

}

catch(Exception e)

{

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

}

}

}