

Java Programming Lab Manual

LIST OF EXPERIMENTS

1. Write a Program to add two numbers using Command Line Arguments.
2. Write a Program to find the factorial of a given number using while statement.
3. Write a Program to create a class using constructor statements.
4. Write a Program to inherit the property of a base class in derived class using super statement.
5. Write a program to create Thread and control main thread.
6. Write a Program to create multiple threads.
7. Write a Program to display This is an Applet string on an applet.
8. Write a Program to implement URL class on applet.
9. Write a Program for chatting using tcp/ip socket
10. Write a Program to insert, delete, and update a table using JDBC-ODBC connection.

EXPERIMENT NO.1

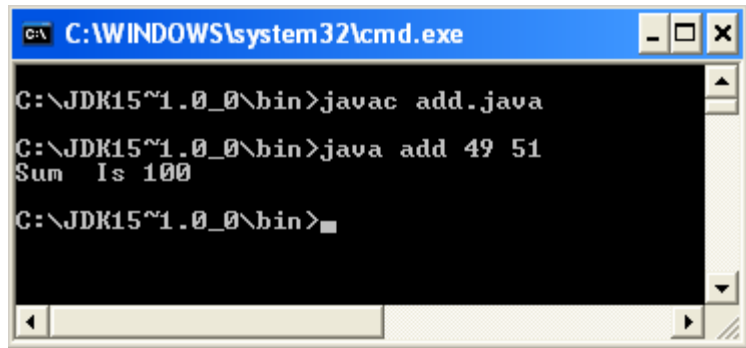
Aim -: Write a program to add two integer numbers using command line argument.

Explanation -: This program enable the user to add two integer numbers using command line

Program -:

```
class add
{
    public static void main(String str[])
    {
        int a,b,c;
        a=Integer.parseInt(str[0]);
        b=Integer.parseInt(str[1]);
        c=a+b;
        System.out.println("Sum Is =- " + c);
    }
}
```

Output :-



```
C:\WINDOWS\system32\cmd.exe
C:\JDK15~1.0_0\bin>javac add.java
C:\JDK15~1.0_0\bin>java add 49 51
Sum Is 100
C:\JDK15~1.0_0\bin>
```

Viva -Voice Questions:

1. What do you mean by command line argument programming.
2. What java uses compiler , interpreter or both.
3. Can I compile group of java files once?

EXPERIMENT NO. 2

Aim: - Write a program to find the factorial of a given number while statement.

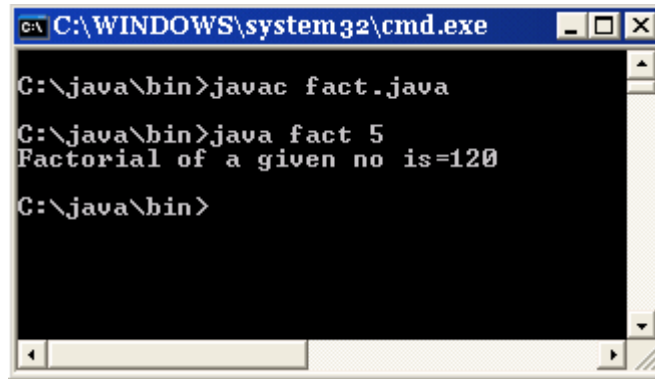
Explanation :- While statement is entry controlled loop statement 1st it evaluate condition then body of the code is executed.

Program :-

```
class fact
{
    public static void main(String str[])
    {
        int num,fac=1,i=1;
        num=Integer.parseInt(str[0]);

        while(num>=i)
        {
            fac=fac*i;
            i++;
        }
        System.out.println("Factorial of a given no is="+fac);
    }
}
```

Output :-



```
C:\WINDOWS\system32\cmd.exe
C:\java\bin>javac fact.java
C:\java\bin>java fact 5
Factorial of a given no is=120
C:\java\bin>
```

Viva -Voice Questions:

1. What is the difference between while and do while loop.
2. What is the difference between break and continue statements.

EXPERIMENT NO. 3

Aim :- Write a program to create a class using constructor.

Explanation :- This program tells the uses of constructor, how to use in classes.

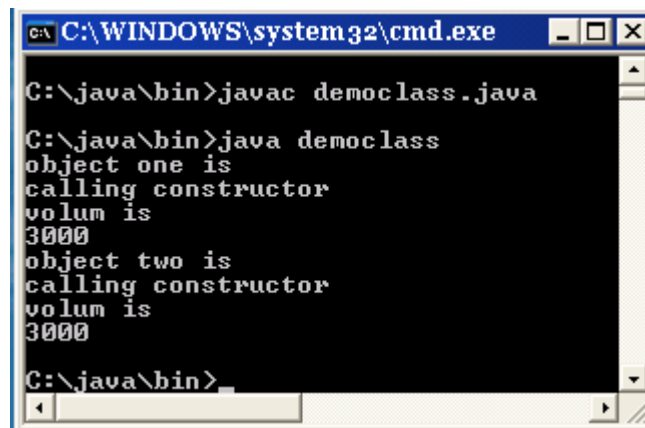
Program :-

```
class democlass
{
    public static void main(String str[])
    {
        System.out.println("object one is");
        demo obj=new demo();
        int v=obj.vol();
        System.out.println(+v);
        System.out.println("object two is");
        demo obj1=new demo();
        int k=obj1.vol();
        System.out.println(+k);
    }
}

class demo
{
    int w,h,l;
```

```
demo()
{
    System.out.println("calling constructor");
    System.out.println("volum is");
    w=10;
    h=15;
    l=20;
}
int vol()
{
    return(w*l*h);
}
}
```

Output:-



```
C:\WINDOWS\system32\cmd.exe
C:\java\bin>javac democlass.java
C:\java\bin>java democlass
object one is
calling constructor
volum is
3000
object two is
calling constructor
volum is
3000
C:\java\bin>_
```

Viva – Voice Questions:

1. What is constructor.
2. Why we use constructor.
3. What do you mean by garbage collection

EXPERIMENT NO. 4

Aim -: Write a program to inherit a property of a base class in derived class using super statement

Explanation -: This program enable the user to inherit the property of a base class into the derived class using super statement super is the 1st statement of constructor.

Program -:

```
class item
{
    int itemno;
    String disc;
    float rate;
    int qoh;
    void disp()
    {
        System.out.println("item class");
        System.out.println("item no is"+itemno);
        System.out.println("disc is"+disc);
        System.out.println("reate is"+rate);
        System.out.println("quantity is"+qoh);
    }
}

item()
{
    itemno=0;
    disc=" ";
    rate=0;
    qoh=0;
}

item(int n,String s,float r,int q)
{
    itemno=n;
    disc=s;
    rate=r;
    qoh=q;
}
}
```

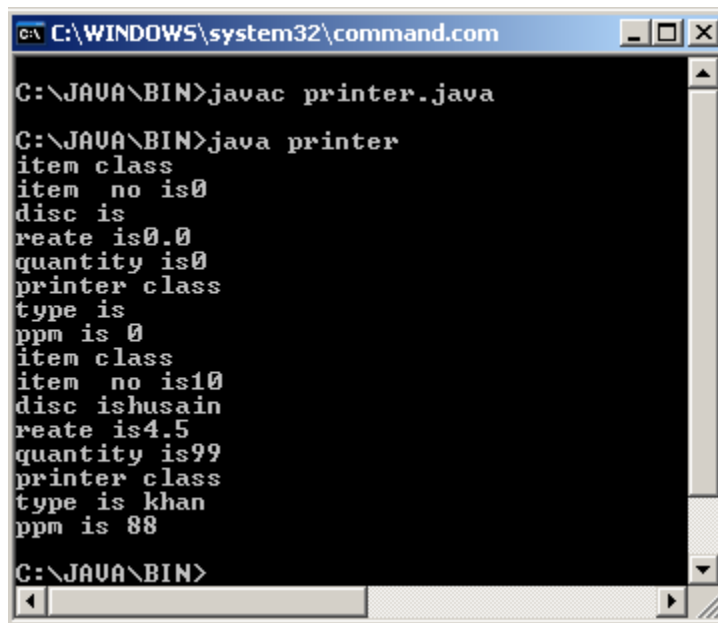
```
// creating printer class
class printer extends item
{
    String type;
    int ppm;
    printer()
    {
        super();
        type=" ";
        ppm=0;
    }
    printer(int a,String b,float c,int d,String e,int f)
    {
        super(a,b,c,d);
        type=e;
        ppm=f;
    }

    void disp()
    {
        super.disp();

        System.out.println("printer class");
        System.out.println("type is "+type);
        System.out.println("ppm is "+ppm);
    }
}

public static void main(String str[])
{
    printer p1=new printer();
    p1.disp();
    printer p2=new printer(10,"husain",4.5f,99,"khan",88);
    p2.disp();
}
}
```

Output:



```
C:\WINDOWS\system32\command.com
C:\JAVA\BIN>javac printer.java
C:\JAVA\BIN>java printer
item class
item no is0
disc is
reate is0.0
quantity is0
printer class
type is
ppm is 0
item class
item no is10
disc ishusain
reate is4.5
quantity is99
printer class
type is khan
ppm is 88
C:\JAVA\BIN>
```

Viva - Voice Questions:

1. what is supper statement.
2. How multiple inheritance is achieved in java
3. How do I get multiple return values back from a method?

EXPERIMENT NO. 5

Aim -: Write a program to create Thread and control main thread.

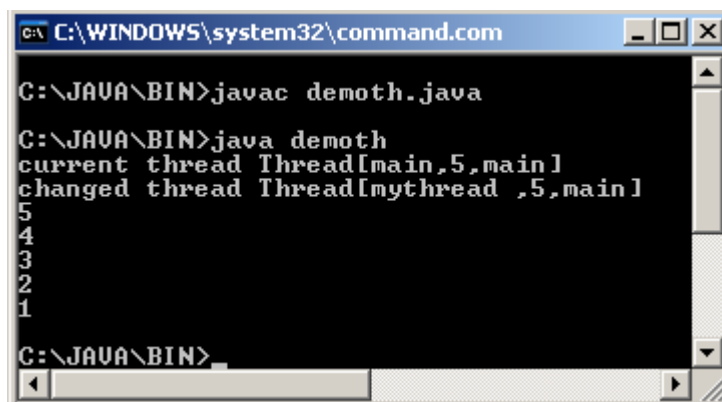
Explanation -: This program enable the user to create thread and how to control the main thread

Program -:

```
class demoth
{
    public static void main(String str[])
    {
        int i=5;
        Thread t=Thread.currentThread();
        System.out.println("current thread "+t);
        t.setName("mythread ");
        System.out.println("changed thread "+t);

        try{
            for(;i>0;)
            {
                System.out.println(i);
                Thread.sleep(1000);
                i--;
            }
        }
        catch(Exception e)
        {
            System.out.println("interupted thread");
        }
    }
}
```

Output:-



```
C:\WINDOWS\system32\command.com
C:\JAVA\BIN>javac demoth.java
C:\JAVA\BIN>java demoth
current thread Thread[main,5,main]
changed thread Thread[mythread ,5,main]
5
4
3
2
1
C:\JAVA\BIN>
```

Viva - Voice Questions:

1. Define thread
2. How many types we can create threads
3. What is the advantage of threading

EXPERIMENT NO. 6

Aim -: Write a program to create multiple thread.

Explanation -: This program enable the user to create multi threading programming

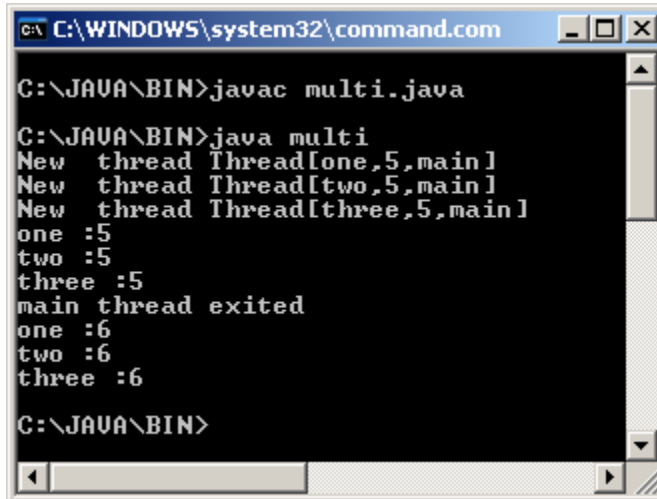
Program -:

```
class multi
{
    public static void main(String str[])
    {
        new NewThread("one");
        new NewThread("two");
        new NewThread("three");
    }
    try{
        Thread.sleep(1000);
    }
    catch(Exception e)
    {
        System.out.println("interupted thread");
    }
    System.out.println("main thread exited ");
}
}
```

```
class NewThread implements Runnable
{
    String name;
    Thread t;
    NewThread(String tname)
    {name=tname;
    t=new Thread(this,name);
    System.out.println("New thread "+t);
    t.start();
    }
    public void run()
    {
    try{
    for(int i=5;i>0;i++)
    {
    System.out.println(name+" :"+i);
    Thread.sleep(1000);
    }
    }
    }
```

```
catch(Exception e)
{
    System.out.println(name+"Interupted");
}
System.out.println(name+"Exited");
}}
```

Output:-



```
C:\WINDOWS\system32\command.com
C:\JAVA\BIN>javac multi.java
C:\JAVA\BIN>java multi
New thread Thread[one,5,main]
New thread Thread[two,5,main]
New thread Thread[three,5,main]
one :5
two :5
three :5
main thread exited
one :6
two :6
three :6
C:\JAVA\BIN>
```

Viva -Voice Questions:

1. what is the advanteg of multi threading programming
2. what is thread model
3. what are the methods in thread class

EXPERIMENT NO. 7

Aim -: Write a program to make a simple moving banner applet.

Explanation -: This program demonstrate the user to make banner on an applet programming

Program -:

```
import java.awt.*;
import java.applet.*;
/*<applet code="SimpleBanner" width=300 height=100>
</applet>
*/
public class SimpleBanner extends Applet implements Runnable
{
    String msg="A Simple Banner Applet";
    Thread t=null;
    boolean stopflag;
    public void init()
    {
        setBackground(Color.cyan);
        setForeground(Color.red);
    }
    public void start()
    {
        t=new Thread(this);
        stopflag=false;
        t.start();
    }
    public void run()
    {
        char ch;
        for(;;)
        {
            try
            {
                repaint();
                Thread.sleep(250);
                ch=msg.charAt(0);
                msg=msg.substring(1,msg.length());
                msg+=ch;
                if(stopflag)
                    break;
            }
            catch(Exception e)
            {
```

```
        System.out.println("Exception :"+e);
    }
}
}
public void stop( )
{
    stopflag=true;
    t=null;
}
public void paint(Graphics g)
{
    g.drawString(msg,50,30);
}
}
```

Output:-



Viva –Voice Questions:

1. What is graphics class in applet?
2. What are the advantages of applet?

EXPERIMENT NO. 8

Aim -: Write a program to implement URL class on applet.

Explanation -: This program enable the user to implement url on an applet

Program -:

```
import java.awt.*;
import java.applet.*;
import java.net.*;
public class App1 extends Applet
{
    public void start()
    { AppletContext ac=getAppletContext();
      URL u=getCodeBase();
    Try
    {
        ac.showDocument(new URL(u+"test.html"), "_parent");
    }
    catch(Exception e)
    {
        showStatus("URL not found");
    } } }
```

Output:-



Viva –Voice Questions:

1. what is url
2. what is the difference between codebase and getcodebase method

EXPERIMENT NO. 9

Aim :- Write a program for chatting using tcp/ip socket

Explanation :- This program enable the user to chat with tcp/ip socket

Program:-

```
import java.net.*;
import java.io.*;
public class ChatServer
{
    public static void main(String args[])
    {
        try
        {
            BufferedReader br=new BufferedReader(new
            InputStreamReader(System.in));
            ServerSocket ss=new ServerSocket(2345);
            Socket skt=ss.accept( );
            BufferedReader skt_in=new BufferedReader(new
            InputStreamReader(skt.getInputStream( )));
            PrintStream skt_out=new PrintStream(skt.getOutputStream( ));
            while(true)
            {
                System.out.println(skt_in.readLine( ));
                skt_out.println("What is your name");
                yourname=skt_in.readLine( );
                System.out.println(yourname);
                String s=skt_in.readLine( );
                System.out.println(s);
                String myname=br.readLine( );
                skt_out.println(myname);
                break;
            }
            while(true)
            {
                String recv=skt_in.readLine( );
                System.out.println(yourname+"?:"+recv);
                String send=br.readLine( );
                skt_out.println(send);
            }
        }
        catch(Exception e)
```

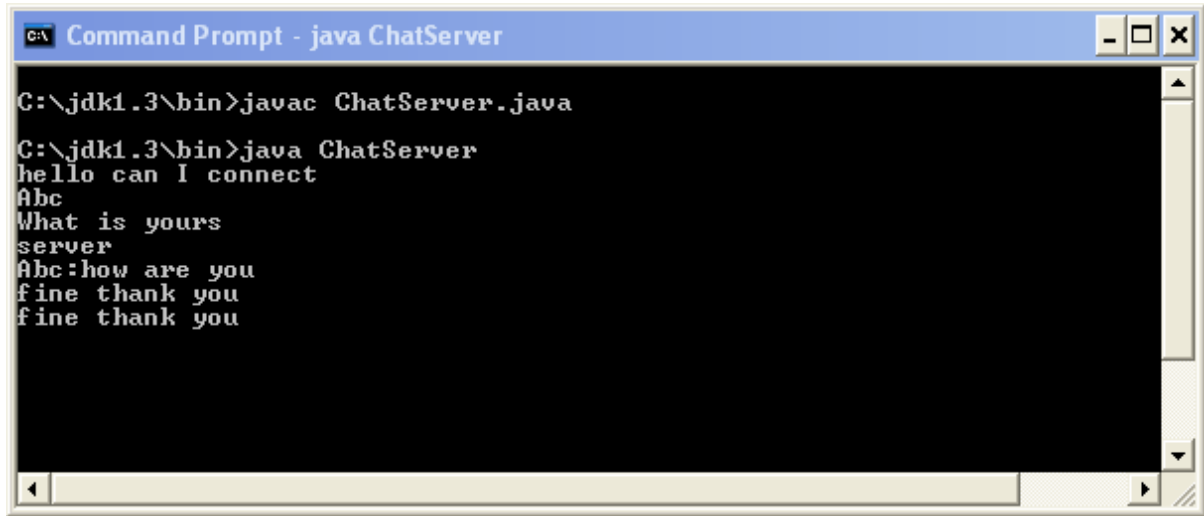
```
{
  System.out.println("Exception :"+e);
} } }
```

// CLIENT

```
import java.net.*;
import java.io.*;
public class ChatClient
{
  public static void main(String args[])
  {
    try
    {
      BufferedReader br=new BufferedReader(new
      InputStreamReader(System.in));
      Socket skt=new Socket("runghaibm",2345);
      BufferedReader skt_in=new BufferedReader(new
      InputStreamReader(skt.getInputStream( )));
      PrintStream skt_out=new PrintStream(skt.getOutputStream( ));
      while(true)
      {
        skt_out.println("hello can I connect");
        skt_out.println(skt_in.readLine( ));
        String myname=br.readLine( );
        skt_out.println(myname);
        skt_out.println("What is yours");
        String yourname=skt_in.readLine( );
        System.out.println(yourname);
        break;
      }
      while(true)
      {
        String send=br.readLine( );
        skt_out.println(send);
        String recv=skt_in.readLine( );
        System.out.println(yourname +"?:"+recv);
      }
    }
    catch(Exception e)
    {
      System.out.println("Exception :"+e);
    }
  }
}
```

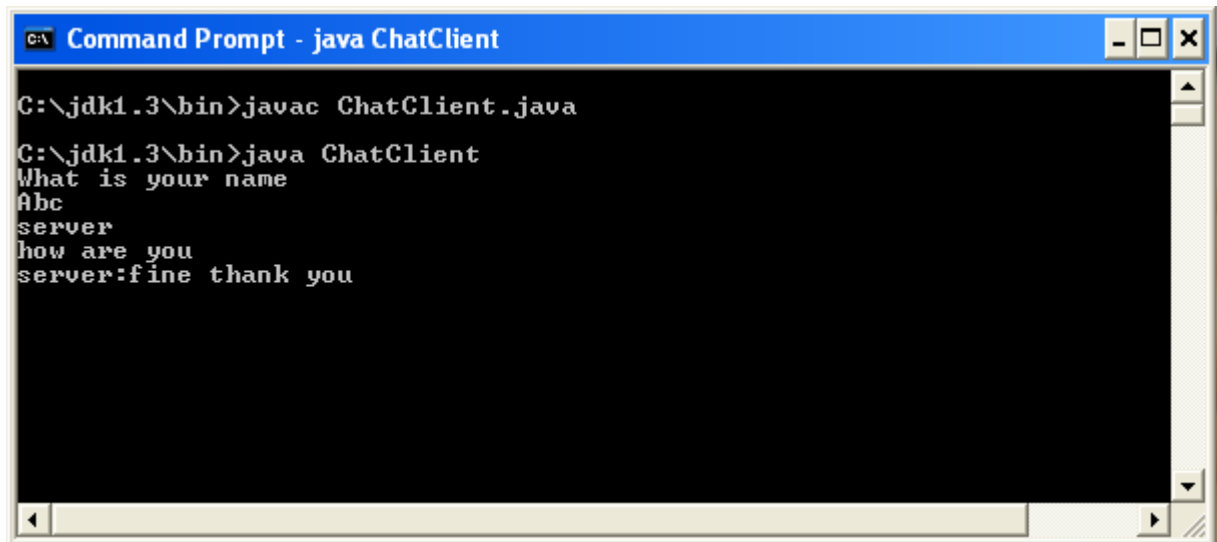

OUTPUT :

TCP Server



```
C:\jdk1.3\bin>javac ChatServer.java
C:\jdk1.3\bin>java ChatServer
hello can I connect
Abc
What is yours
server
Abc:how are you
fine thank you
fine thank you
```

TCP Client



```
C:\jdk1.3\bin>javac ChatClient.java
C:\jdk1.3\bin>java ChatClient
What is your name
Abc
server
how are you
server:fine thank you
```

Viva - Voice Questions:

1. What is tcp/ip protocol
2. In which layer tcp/ip protocol exist
3. Is tcp/ip is connectinless or connectin oriented.
4. What is the difference between ARP and RARP

EXPERIMENT NO. 10

Aim -: Write a program to insert, delete and update a table using JDBC-ODBC connection .

Explanation -: This program enable the user to work with database

Program -:

```
import java.sql.*;
import java.util.*;
class badabase
{
Public static void main(String str[])
{
Try
{
Resultset rs;
Class.forName("sun.jdbc.odbc.jdbcodbcDriver");
String url="jdbc:odbc:huk";
Connection con;
Con=DriverManager.getConnection(url);
Statement set=con.createStatement();
Rs=ser.executeQuery(Select * from db);
String ins="Insert into db values('husain','it',539)";
String del="Delet form db where name =huk";

preparedStatement set=con.preparedStatement(ins);
set.getString(1,"huk");
set.executeUpdate();
con.commit();
while(rs.next())
{
System.out.println(rs.getString(1)+" "+rs.getString(2);
}
Con.close();
}
Catch(exception e)
{
Sysstem.out.println("no such class");
}}
}
```

Viva – Voice Questions:

1. what is JDBC-ODBC and DSN

2. what is the locking of database