

Familiarization with simple java programs

1. Familiarization with simple java programs

a) Write a program to print NCr and Npr

Program description

This program reads two numbers from the keyboard and prints value of combination and permutation of that numbers

Theory

```
/*
This is a simple Java program. Call this file "ncr_npr.java".
*/
class ncr_npr {
// Your program begins with a call to main().
public static void main(String args[]) {
    // read n and r from keyboard
    //call functions ncr and npr to find the result
    }
public long factorial (int n){//find the factorial here}
public long ncr (int n,int r){//return the value of combination}
public long npr (int n,int r){/return the value of permutation}
}
}
```

Refer the details of following instructions

use BufferedReader class to create a object which helps you to read data from the keyboard.

```
BufferedReader br = new BufferedReader(new InputStreamReader(System.in));
```

```
str = br.readLine();
```

one simple program

```
import java.io.*;
import java.lang.*;
public class Factorial{
    public static void main(String args[]){
        int f=1,m,i;
        BufferedReader br=new BufferedReader(new InputStreamReader(System.in));
    try
    {
        System.out.println("Enter the number");
        m=Integer.parseInt(br.readLine());
        System.out.println("Factorial of "+m+" is");
        for(i=1;i<=m;i++)
        {
            f=f*i;
        }
        System.out.println(f);
    }
    catch(IOException e){
        System.out.println("String not found");
    }
}
```

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```
    }  
  }  
}
```

Algorithm

create a class ncr_cpr

class ncr_npr has function main, function ncr, function npr and function factorial

function factorial have argument n and return the value of n!

function npr has 2 arguments n and r

npr return value of factorial(n)/factorial(n-r)

function ncr has 2 arguments n and r

npr return value of factorial(n)/factorial(n-r)/factorial (r)

function main reads value of n and r from the keyboard and displays the value of npr and ncr

function main calls function npr and ncr

b) Write a program to print first n Fibonacci numbers

Program description

This program takes value of n from keyboard and prints first n fibonacci numbers.

Theory

```
/*
```

This is a simple Java program.

Call this file "Example.java".

```
*/
```

```
class Example {  
  // Your program begins with a call to main().  
  public static void main(String args[]) {  
    System.out.println("This is a simple Java program.");  
  }  
}
```

```
C:\>javac Example.java
```

The **javac** compiler creates a file called **Example.class** that contains the bytecode version of the program. As discussed earlier, the Java bytecode is the intermediate representation of your program that contains instructions the Java interpreter will execute. Thus, the output of **javac** is not code that can be directly executed.

To actually run the program, you must use the Java interpreter, called **java**. To do so, pass the class name **Example** as a command-line argument, as shown here:

```
C:\>java Example
```

When the program is run, the following output is displayed:

This is a simple Java program.

Algorithm

create a class fibonacci

class fibonacci has function main, function fib

function main reads value of n

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function main calls function fib

function fib(n)

a=0,b=1,c;

display a and b

loop steps n-2 times

c=a+b

display c

a=b

b=c

end loop

end function fib