**ASSIGNMENT:**

**Function Explanations in Brief:**

1) **Palindrome number:n=121**

**Sol: public** **class** Palindrome {

**public** **static** **void** main(String args[]){

**int** r,sum=0,temp;

**int** n=121;

temp=n;

**while**(n>0){

r=n%10;

sum=(sum\*10)+r;

n=n/10;

}

**if**(temp==sum)

System.***out***.println("palindrome number ");

**else**

System.***out***.println("not palindrome");

}

}

Result:Palindrome

**N=12321**

**Sol: public** **class** Palindrome {

**public** **static** **void** main(String args[]){

**int** r,sum=0,temp;

**int** n=121;

temp=n;

**while**(n>0){

r=n%10;

sum=(sum\*10)+r;

n=n/10;

}

**if**(temp==sum)

System.***out***.println("palindrome number ");

**else**

System.***out***.println("not palindrome");

}

}

Result: Palindrome

**N= 512215**

**Sol: public** **class** Palindrome {

**public** **static** **void** main(String args[]){

**int** r,sum=0,temp;

**int** n=121;

temp=n;

**while**(n>0){

r=n%10;

sum=(sum\*10)+r;

n=n/10;

}

**if**(temp==sum)

System.***out***.println("palindrome number ");

**else**

System.***out***.println("not palindrome");

}

}

Result: Palindrome

**2)Pattern of stars:**

Based on the input integer, the levels in the pattern and the number of stars in each level are decided. At every level, the number of stars is 1 less than the previous level.

**Example:** If the input number is 4, then the output will be

**public** **class** pattern{

**public** **static** **void** main(String[] args)

{

**int** rows=4;

**for** (**int** i= rows-1; i>=0 ; i--)

{

**for** (**int** j=0; j<=i; j++)

{

System.***out***.print("\*" + " ");

}

System.***out***.println();

}

}

}

Output:

\* \* \* \*

\* \* \*

\* \*

\*

II) if input no is 5, then the output will be

**public** **class** pattern{

**public** **static** **void** main(String[] args)

{

**int** rows=5;

**for** (**int** i= rows-1; i>=0 ; i--)

{

**for** (**int** j=0; j<=i; j++)

{

System.***out***.print("\*" + " ");

}

System.***out***.println();

}

}

}

Output:

\* \* \* \* \*

\* \* \* \*

\* \* \*

\* \*

\*

If input no is 2, then the output will be

**public** **class** pattern{

**public** **static** **void** main(String[] args)

{

**int** rows=5;

**for** (**int** i= rows-1; i>=0 ; i--)

{

**for** (**int** j=0; j<=i; j++)

{

System.***out***.print("\*" + " ");

}

System.***out***.println();

}

}

}

Output:

\*\*

\*

**3) Prime number:**

The numbers which are only divisible by 1 & themselves are called prime numbers.

**(Or)**

The numbers which have factors as 1 and themselves are called prime numbers.

**Example\_1:** If the input number is 23

Factors of 23 are 1, 23, and other than 1 it  is divisible by 23 only

Hence the number is prime

**import** java.util.Scanner;

**public** **class** Prime {

**public** **static** **void** main(String[] args)

{

**int** num, i, count=0;

Scanner s = **new** Scanner(System.***in***);

System.***out***.print("Enter a Number: ");

num = s.nextInt();

**for**(i=2; i<num; i++)

{

**if**(num%i == 0)

{

count++;

**break**;

}

}

**if**(count==0)

System.***out***.println("\nIt is a Prime Number.");

**else**

System.***out***.println("\nIt is not a Prime Number.");

}

}

Output:

Enter a Number: 23

It is a Prime Number.

**Example\_2:** If the input number is 22

Factors of 22 are 1,2, 11, 22 and are divisible by 2 and 11.

Hence the number is not a prime number.

**import** java.util.Scanner;

**public** **class** Prime {

**public** **static** **void** main(String[] args)

{

**int** num, i, count=0;

Scanner s = **new** Scanner(System.***in***);

System.***out***.print("Enter a Number: ");

num = s.nextInt();

**for**(i=2; i<num; i++)

{

**if**(num%i == 0)

{

count++;

**break**;

}

}

**if**(count==0)

System.***out***.println("\nIt is a Prime Number.");

**else**

System.***out***.println("\nIt is not a Prime Number.");

}

}

Output:

Enter a Number: 22

It is not a Prime Number.

**4)Fibonacci series:**

The series of numbers whose next number is the sum of its previous two numbers is called the Fibonacci series.

**Example\_1:** If the input number is 5,

The Fibonacci series  is: 0, 1, 1, 2, 3 (by default first two numbers are 0,1 (**hardcoded**), and we need to calculate the other nos in series)

import java.util.Scanner;

**public** **class** Fib {

**public** **static** **void** main(String args[])

{

**int** n1=0,n2=1,n3,i,count=5;

System.***out***.print(n1+" "+n2);

**for**(i=2;i<count;++i)

{

n3=n1+n2;

System.***out***.print(" "+n3);

n1=n2;

n2=n3;

}

}

}

Output: 0 1 1 2 3

**II)**

import java.util.Scanner;

**public** **class** Fib {

**public** **static** **void** main(String args[])

{

**int** n1=0,n2=1,n3,i,count=7;

System.***out***.print(n1+" "+n2);

**for**(i=2;i<count;++i)

{

n3=n1+n2;

System.***out***.print(" "+n3);

n1=n2;

n2=n3;

}

}

}

Output: 0, 1, 1, 2, 3, 5 , 8