1. **Fibonnaci Series**

package com.basics;

import java.util.\*;

public class TestFibo

{

int input()

{

Scanner sc=new Scanner(System.in);

System.out.println("Enter a no of terms:");

int t=sc.nextInt();

return t;

}

int[] fibo(int t)

{

int a[]=new int[t];

a[0]=0;

a[1]=1;

for(int i=2;i<t;i++)

a[i]=a[i-2]+a[i-1];

return a;

}

int find(int b[])

{

int sum=0;

for(int i=0;i<b.length;i++)

if(b[i]%2==0)

sum+=b[i];

return sum;

}

void display(int s)

{

System.out.println("Sum of even no in fibo="+s);

}

public static void main(String[] args)

{

TestFibo t=new TestFibo();

int c=t.input();

int b[]=t.fibo(c);

int s=t.find(b);

t.display(s);

}

}

1. **Factorial-**

package com.basics;

import java.util.\*;

public class TestFactorial

{

int input()

{

System.out.println("Enter a no:");

Scanner sc=new Scanner(System.in);

int n=sc.nextInt();

return n;

}

int fact(int c)

{

int f=1;

for(int i=1;i<=c;i++)

{

f=f\*i;

}

return f;

}

void display(int fac)

{

System.out.println("Factorial of a no="+fac);

}

public static void main(String[] args)

{

TestFactorial t=new TestFactorial();

int c=t.input();

int fac=t.fact(c);

t.display(fac);

}

}

1. **ArmStrong Number:**

package com.basics;

import java.util.\*;

public class TestArmstrong

{

int countDigit(int n)

{

int cnt=0;

while(n>0)

{

cnt++;

n=n/10;

}

return cnt;

}

int powCal(int digit,int d)

{

int po=1;

for(int j=1;j<=d;j++)

po=po\*digit;

return po;

}

void findArm(int i)

{

int sum=0;

int d=countDigit(i);

int t=i;

while(i>0)

{

int digit=i%10;

sum+=powCal(digit,d);

i=i/10;

}

if(sum==t)

System.out.println(t);

}

public static void main(String[] args)

{

Scanner sc=new Scanner(System.in);

System.out.println("Enter the numbers:");

int n1=sc.nextInt();

int n2=sc.nextInt();

for(int j=n1;j<=n2;j++)

{

TestArmstrong t=new TestArmstrong();

t.findArm(j);

}

}

}

1. **HCF:**

package com.basics;

import java.util.\*;

public class TestHcf

{

int find()

{

Scanner sc=new Scanner(System.in);

System.out.println("Enter the numbers:");

int n1=sc.nextInt();

int n2=sc.nextInt();

int hcf=0;

for(int i=1;i<=n1 && i<=n2;i++)

if(n1%i==0 &n2%i==0)

hcf=i;

return hcf;

}

void display(int c)

{

System.out.println("HCF of two numbers"+c);

}

public static void main(String[] args)

{

TestHcf t=new TestHcf();

int c=t.find();

t.display(c);

}

}

1. **Transpose Matrix:**

package com.basics;

import java.util.Scanner;

class Transpose

{

int[][] input(int r,int c)

{

Scanner sc=new Scanner(System.in);

int a[][]=new int[r][c];

System.out.println("Enter elements of array:");

for (int i = 0; i < r; i++)

{

for (int j = 0; j <c; j++)

a[i][j]=sc.nextInt();

}

return a;

}

int [][] find(int b[][])

{

int c[][]=new int[b[0].length][b.length];

for (int i = 0; i < b.length; i++)

{

for (int j = 0; j <b[0].length; j++)

c[j][i]=b[i][j];

}

return c;

}

void display(int b[][],int d[][])

{

System.out.println("Original Matrix:");

for (int i = 0; i <b.length; i++)

{

for (int j = 0; j <b[0].length; j++)

{

System.out.print(b[i][j]+" ");

}

System.out.println();

}

System.out.println("Transpose Matrix:");

for (int i = 0; i <d.length; i++)

{

for (int j = 0; j <d[0].length; j++)

{

System.out.print(d[i][j]+" ");

}

System.out.println();

}

}

}

public class TestTransposeMatrix

{

public static void main(String[] args)

{

Scanner sc=new Scanner(System.in);

System.out.println("Enter row and coloumns:");

int r=sc.nextInt();

int c=sc.nextInt();

Transpose t=new Transpose();

int b[][]=t.input(r,c);

int d[][]=t.find(b);

t.display(b, d);

}

}