

Aditya Group of Educational Institutions

Online Java Programming Training for Programmers

Test1 Key

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Program -1

Rama is an enthusiastic student who is very good in math especially with numbers. His teacher wants to test his skills on numbers. He was given a number by her teacher and she asked him to print the sum of all digits in the number. Although Rama is good with numbers, he is not well versed with digits of a given number. Help Rama in finishing his task.

Input:

A single line consists of number N.

Constraints:

$1 \leq N \leq 10^5$

Output:

A single line representing sum of digits of given number

Sample Input:

123

Sample Output:

6

Source Code:

```
import java.util.*;
class Test
{
    public static void main(String args[])
    {
        Scanner sc=new Scanner(System.in);
        int n,sum=0;
        n=sc.nextInt();
        while(n>0)
        {
            sum=sum+(n%10);
            n=n/10;
        }
        System.out.println(sum);
        sc.close();
    }
}
```

Program – 2:

Arun is good at generating any series of numbers. Rakul wants to test his skills. She gave him a number and asked him to find all the prime numbers from 2 to given number N. Even though Arun is good at series generation he is unaware of prime numbers. Help Arun in completing the task so that he can impress Rakul.

Input:

A single Line consisting of number N

Constraints:

$2 \leq N \leq 100$

Output:

A single consisting of all prime numbers from 2 to N seperated by space.

Sample Input:

5

Sample Output:

2 3 5

Source Code:

```
import java.util.*;
class one
{
    public static void main(String args[])
    {
        Scanner sc=new Scanner(System.in);
        int n,i,j,count=0;
        n=sc.nextInt();
        for(i=2;i<=n;i++)
        {
            count=0;
            for(j=2;j<=i/2;j++)
            {
                if(i%j==0)
                    count++;
            }
            if(count==0)
                System.out.print(i+" ");
        }

        sc.close();
    }
}
```

Program – 3:

Lucas is a famous mathematician who is now working hard for making his own series. He wants to generate the series as follows:

First 2 numbers of series are taken as 2 and 1, remaining sequence will be generated as

$$2+1=3$$

$$1+3=4$$

$$3+4=7$$

and so on.

Help Lucas in generating a series on his name. You will be given a number N upto which the series has to be generated.

Input:

A single line consisting of range N

Constraints:

$$1 \leq N \leq 1000$$

Output:

A single line consisting of Lucas series of numbers upto N separated by spaces

Sample Input:

5

Sample Output:

2 1 3 4 7

Sample Input2:

15

Sample Output2:

2 1 3 4 7 11 18 29 47 76 123 199 322 521 843

Source Code:

```
import java.util.*;
class one
{
    public static void main(String args[])
    {
        Scanner sc=new Scanner(System.in);
        int n,a=2,b=1,c;
        n=sc.nextInt();
        System.out.print(a+" "+b);
        int i=2;
        while(++i<=n)
        {
            c=a+b;
            System.out.print(" "+c);
            a=b;
            b=c;
        }
        sc.close();
    }
}
```

Program – 4:

Given a number as input you need to check whether a given number is armstrong or not.

Input:

A single line consisting of number N

Constraints:

$1 \leq N < 1000$

Output:

A single line which says "Number is Armstrong" if the number is Armstrong otherwise say "Number is not Armstrong"

Sample Input 1:

1

Output:

Number is Armstrong

Explanation:

All numbers from 0 to 9 are Armstrong numbers

Sample Input 2:

153

Output:

Number is Armstrong

Source Code:

```
import java.util.*;
class one
{
    public static void main(String args[])
    {
        Scanner sc=new Scanner(System.in);
        int n,sum=0,d,r,m;
        n=sc.nextInt();
        d=(int)Math.log10(n)+1;
        m=n;
        while(n>0)
        {
            r=n%10;
            sum=sum+(int)Math.pow(r,d);
            n=n/10;
        }
        if(m==sum)
            System.out.println("Number is Armstrong");
        else
            System.out.println("Number is not Armstrong");
        sc.close();
    }
}
```