

Code  *Random*
(OPC) PVT. LTD.

Nested Loops: Miscellaneous Series



$$S = 1 + (1+2) + (1+2+3) + \dots n \text{ terms}$$

```
public static void main(String Args[])
{
    int n,i,f,j;
    double sum=0;
    Scanner sc= new Scanner(System.in);
    System.out.println("Enter the number of terms");
    n= sc.nextInt();
    for(i=1;i<=n;i++)
    {
        f=0;
        for(j=1;j<=i;j++)
        {
            f=f+j;
        }
        sum= (sum + f);
        System.out.println(sum);
    }
}
```

$$S = 1 - (1+2) + (1+2+3) \dots n \text{ terms}$$

```
public static void main(String Args[]) {  
    int n,i,f,j,sign=1;  
    double sum=0;  
    Scanner sc= new Scanner(System.in);  
    System.out.println("Enter the number of terms");  
    n= sc.nextInt();  
    for(i=1;i<=n;i++)  
    {  
        f=0;  
        for(j=1;j<=i;j++)  
        {  
            f=f+j;  
        }  
        sum= sum + (f)*sign;  
        sign= sign*-1;  
    }  
    System.out.println(sum);  
}
```

$$S = 1 + (1-2) + (1-2+3) + (1-2+3-4) + \dots n \text{ terms}$$

```
public static void main(String Args[])
{
    int n,i,f=1,j,sign=1;
    double sum=0;
    Scanner sc= new Scanner(System.in);
    System.out.println("Enter the number of terms");
    n= sc.nextInt();
    for(i=1;i<=n;i++)
    {
        f=0;
        sign=1;
        for(j=1;j<=i;j++)
        {
            f=f+(j)*sign;
            sign= sign*-1;
        }
        sum= sum + f;
    }
    System.out.println(sum);
}
```

$$S = 1 - (1-2) + (1-2+3) - (1-2+3-4) + \dots n \text{ terms}$$

```
public static void main(String Args[])
{
    int n,i,f=1,j,sign1=1,sign2;
    double sum=0;
    Scanner sc= new Scanner(System.in);
    System.out.println("Enter the number of terms");
    n= sc.nextInt();
    for(i=1;i<=n;i++)
    {
        f=0;
        sign2=1;
        for(j=1;j<=i;j++)
        {
            f=f+(j)*sign2;
            sign2= sign2*-1;
        }
        sum= sum + (f)*sign1;
        sign1= sign1*-1;
    }
    System.out.println(sum);
}
```

$$S = \frac{1+2}{1 \times 2} - \frac{1+2+3}{1 \times 2 \times 3} + \frac{1+2+3+4}{1 \times 2 \times 3 \times 4} - \dots n \text{ terms}$$

```

public static void main(String Args[])
{
    int n,i,j,k,sign=1;
    double sum=0,f2,f1;
    Scanner sc= new Scanner(System.in);
    System.out.println("Enter the number of terms");
    n= sc.nextInt();
    for(i=1;i<=n;i++)
    {
        f1=1.0;
        f2=0.0;
        for(j=1;j<=i+1;j++)
        {
            f1=(f1*j);
        }
        for(k=1;k<=i+1;k++)
        {
            f2= f2 + k;
        }
        sum= sum + (f2/f1)*sign;
        sign= sign*-1;
    }
    System.out.println(sum);
}

```

Happy Learning!!

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