1.Write a java program to check whether given number is Armstrong number or not

```
package Tsgol.com.Loops;
import java.util.Scanner;
public class whilearm {
public static void main(String[] args) {
                int n,arm=0,rem,a;
                System.out.println("Enter a number");
                Scanner sc = new Scanner(System.in);
                n=sc.nextInt();
          a=n;
          while(n>0)
          {
                rem=n%10;
                arm=(rem*rem*rem)+arm;
                n=n/10;
          }
if(a==arm)
          System.out.print("It is armstrong number");
else
          System.out.print("not an armstrong");
          }
}
```

Output:

```
Enter a number
153
It is armstrong num
```

2. Write a Program to display all the Armstrong number between 10 to 1000

```
package Tsgol.com.Loops;
import java.util.Scanner;
public class Whilearmsdisnums {
```

```
        public static void main(String[] args) {
Scanner sc = new Scanner(System.in);
int i, num,sum=0,r,count=0,multiply;
for(i=10;i<=1000;i++)
{
        sum=0;
        num=i;
        count=0;
while(num>0)
{
        num=num/10;
        count++;
}
num=i;
while(num>0)
{
        r=num%10;
        multiply=1;
        for(int j=1;j<=count;j++)
                multiply=multiply*r;
        sum=sum+(multiply);
        num=num/10;
}
if(sum==i)
System.out.println(i);
}
        }
}
```

Output:

```
153
370
371
407
```

3. Write a program to find sum of the following series

a. Sum = x-1/x+2/x-3/x….n/x b. 1!+2!+3!+…..

```
package Tsgol.com.Loops;
import java.util.Scanner;
public class sumseries2 {
	public static void main(String[] args) {
		int i,n;
		float x,sum=of;
		Scanner sc = new Scanner(System.in);
		System.out.println("Enter x value");
		x=sc.nextFloat();
		System.out.println("Enter n value");
		n=sc.nextInt();

		for(i=1;i<=n;i++)
		{
			if(i%2==0)
	 sum=sum-(float)i/x;
			else
				sum=sum+(float)i/x;
		}
			System.out.println("sum of series" + sum );
		}
}
```

Output:

```
Enter x value
4
Enter n value
6
sum of series-0.75
```

b.

```
package Tsgol.com.Loops;
import java.util.Scanner;
public class factorial {
	public static void main(String[] args) {
		int n,i,fact=1;
		System.out.println("Enter a number");
		Scanner key = new Scanner(System.in);
```

```
        n =    key.nextInt();
for(i=1;i<=n;i++)
{
        fact=fact*i;
}
                        System.out.println("Factorial of given number is " + fact
);
                }
        }
```

Output:

```
Enter a number
6
Factorial of given number is 720
```

4.Write a java program to check given number is perfect number or not

```
package Tsgol.com.Loops;
import java.util.Scanner;
public class perfectnum {
        public static void main(String[] args) {
int n,i,sum=0;
System.out.println("Enter any number");
Scanner sc = new Scanner(System.in);
n = sc.nextInt();
for(i=1;i<n;i++)
{
        if(n%i==0)
        {
                sum=sum+i;
        }
}
if(n==sum)
{
        System.out.println("It is a perfect number");
}
else
{
```

```
        System.out.println("It is not a perfect number");
}
        }
}
```

Output:

```
Enter any number
28
It is a perfect number
```

5.Display all perfect numbers between 1 to 100000

```
package Tsgol.com.Loops;
public class perfect100000 {
        public static void main(String[] args) {
                //sum of factors is equal to given num
                //n = 4 (1 ,2 , 3) 1+2=3

                int i,j,num,sum;
                for(i=1;i<=100000;i++)
                {
                        num=i;
                        sum=0;
                        for(j=1;j<num;j++)
                        {
                                if(num%j==0)
                                        sum=sum+j;
                        }
                        if(sum==num)
                                System.out.println(i);
                }
        }
}
```

Output:

```
6
28
496
8128
```

6.Write a program to extract only character from a string. Eg: Af02284khff -> Afkhff

```
package Tsgol.com.patterns;
import java.util.Scanner;
public class Stringsch {
	public static void main(String[] args) {
		String text ,string="";
		char ch;
		int i;

		Scanner key = new Scanner(System.in);
		System.out.println("Enter your text ");
		text = key.next();
		System.out.println("length of the string "+text.length());

		for(i=0;i<text.length();i++)
		{
			ch = text.charAt(i);


			if(ch>='a' & ch<='z' | ch>='A' & ch<='Z')
			string=string + ch;

		}
		System.out.println("extracted string "+ string);
}
}
```

Output:

```
Enter your text
Af02284khff
length of the string 11
extracted string Afkhff
```

7.Write a program to find reverse of digits

```
package Tsgol.com.Loops;
import java.util.Scanner;
public class Whilerev {
	public static void main(String[] args) {
```

```
                int n ,r;
                System.out.println("Enter a num");
                Scanner sc = new Scanner(System.in);
                n=sc.nextInt();

                while(n>0) //123 ;12;1
                {
                 r=n%10; //123%10 => r=3,q=12 ;12%10 =>r=2,q=1 ;1%10 =>r=1,q=0
                 System.out.print(r);
                 n=n/10; //12;1;0
                }
        }
}
```

Output:

```
Enter a num
123
321
```

8.Write a program to find power value of given base and exponent number

```
package Tsgol.com.Loops;
import java.util.Scanner;
public class Power {
        public static void main(String[] args) {
                // TODO Auto-generated method stub
int n,p,result=1;
System.out.println("Enter a number:");
Scanner r=new Scanner(System.in);
n=r.nextInt();
System.out.println("Enter Power");
p=r.nextInt();
for(int i=1;i<=p;i++)
{
        result=n*result; //4*1=4, 4*8=32
}
System.out.println("Power " + result);
        }
}
```

Output:

```
Enter a number:
4
Enter Power
3
Power 64
```

9.Write a program to convert every first letter of string to capital letter

a. eg: the Hindu -> The Hindu

```
package Tsgol.com.patterns;
public class Caps {
String[] str, str2;
int size;
Caps(String[] s, int n)
{
str=s; //allocate memory and copy the value of arguments
str2=s;
size=n;
}
void Converto()
{
int i;
for(i=0;i<size;i++)
{
String res = str[i].substring(0, 1).toUpperCase() + str[i].substring(1);
str2[i]=res;
}
}
void display()
{
for(int i=0;i<size;i++)
System.out.println(str2[i]);
}
public static void main(String[] args) {
String[] text = {"the Hindu"};
Caps obj = new Caps(text, text.length);
obj.Converto();
obj.display();
```

```
}
}
```

Output:

```
The Hindu
```

10.Write a program to count no. of digits present in a string

```
package Tsgol.com.patterns;
public class countDigits{
	public static void main(String[] args) {
		String s="Java19 is a programming Language123499";
		int count=0;
		for(int i=0;i<s.length();i++)
		{
			if(Character.isDigit(s.charAt(i)))
				count++;

		}
		System.out.println("The no. of digits in the given string:" +count);
	}
}
```

Output:

```
The no. of digits in the given string:8
```