

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

```
package assessment;
import java.util.*;

public class armnum {

    public static void main(String[] args) {
        // TODO Auto-generated method stub

        Scanner obj = new Scanner(System.in);
        int num, sum=0, r, num1,num2, count=0;
        System.out.println("Enter your number to Check for
        Armstrong");

        num = obj.nextInt();
        num2=num1 =num;
        while(num1>0)
        {
            num1=num1/10;
            count++;
        }
        while(num>0)
        {
            r=num%10;
            int multiply = 1;
            for(int j=1;j<=count;j++)
            multiply = multiply * r;
            sum = sum + multiply ;
            num=num/10;
        }
        System.out.println("sum="+sum);
        if(sum==num2)
        System.out.println("Given number is armstrong");
        else
        System.out.println("Given number is not armstrong");
    }

}
```

Output:

Enter your number to Check for Armstrong

90

sum=81

Given number is not armstrong

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

```
package assessment;
import java.util.*;
public class Allarmstrongnum {

    public static void main(String[] args) {
        // TODO Auto-generated method stub

        Scanner sc = new Scanner(System.in);
        int i, num, r, sum, count=0, multiply;
        for(i=10;i<=100000;i++)
        {
            sum=0;
            num=i;
            count=0;
            while(num>0) // counting of digits
            {
                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/=10;
            }
            if(sum==i)
                System.out.println(i);
        }
    }
}
```

Output:

153

370

371

407
1634
8208
9474
54748
92727
93084

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

- a. $\text{Sum} = x - 1/x + 2/x - 3/x + \dots n/x$

```
package assessment;
import java.util.Scanner;
public class Seriessum1 {

    public static void main(String[] args) {
        // TODO Auto-generated method stub

        Scanner obj = new Scanner(System.in);
        int num;
        float x, sum=0;
System.out.println("Program to find of x-1/x+2/x-3/x....n/x");
        System.out.println("Enter x value");
        x=obj.nextFloat();
        System.out.println("Enter num value");
        num=obj.nextInt();
        for(int i=1;i<=num;i++)
        {
            if(i%2==0) sum=sum-(float) i/x;
            else
                sum=sum+(float) i/x;;
        }
        System.out.println("series sum is"+sum);
    }
}
```

Output:

Program to find of $x-1/x+2/x-3/x+\dots.n/x$
 Enter x value

5
 Enter num value
 7
 series sum is 0.79999995

b. $1!+2!+3!+\dots.n!$

```
package anudip;
import java.util.Scanner;

public class FactorialSum {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);

        System.out.print("Enter the value of n: ");
        int n = scanner.nextInt();

        int sum = 0;

        for (int i = 1; i <= n; i++) {
            int factorial = 1;

            for (int j = 1; j <= i; j++) {
                factorial *= j;
            }

            sum += factorial;
        }

        System.out.println("Sum of the series: " + sum);

        scanner.close();
    }
}
```

Output:

Enter the value of n: 8
 Sum of the series: 46233

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

```
package assessment;
import java.util.*;
```

```

public class Perfectnum {

    public static void main(String[] args) {
        // TODO Auto-generated method stub
        Scanner obj = new Scanner(System.in);
        long num,i,sum=0;
        System.out.println("Enter n value");
        num=obj.nextInt();
        for(i=1;i<num;i++)
        {
            if(num%i==0)

                System.out.println("sum="+sum);
            if(sum==num)
                System.out.println(num+"perfect number");
            else;
            System.out.println(num+" not a perfect number");

        }
    }
}

```

Output:

```

Enter the number
121
It is a perfect number

```

5. Display all perfect numbers between 1 to 100000

```

package assessment;

import java.util.*;
public class Perfectnum {

    public static void main(String[] args) {

        Scanner obj = new Scanner(System.in);
        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 -> Afkhhf

```

package assessment;
import java.util.Scanner;
public class Digits {

    public static void main(String[] args) {

        String text, digits = "", string = "", symbols = "";
        char ch;
        int i;
        Scanner key = new Scanner(System.in);
        System.out.println("Enter your text: ");
        text = key.nextLine(); // Use nextLine() instead of nextInt()
        to read the entire line
        System.out.println("Length of the string: " +
            text.length());
        for (i = 0; i < text.length(); i++) {
            ch = text.charAt(i);
            if (ch >= '0' && ch <= '9') {
                digits += ch;
            } else if ((ch >= 'a' && ch <= 'z') || (ch >= 'A' && ch <=
                'Z')) {
                string += ch;
            } else if (ch != ' ') {
                symbols += ch;
            }
        }
        System.out.println("Extracted digits: " + digits);
        System.out.println("Extracted string: " + string);
        System.out.println("Extracted symbols: " + symbols);
    }
}

```

Output:

Enter your text:
abcd123#%
Length of the string: 9
Extracted digits: 123
Extracted string: abcd
Extracted symbols: #%

7. Write a program to find reverse of digits

```
package assessment;
import java.util.Scanner;
public class ReverseofDigits {

    public static void main(String[] args) {
        // TODO Auto-generated method stub
        Scanner obj = new Scanner(System.in);
        int num, num1, r, reverse=0;
        System.out.println("Enter your number to Check for
Armstrong");
        num = obj.nextInt();
        num1=num;
        while (num>0)
        {
            r=num%10;
            reverse= (reverse*10) +r;
            System.out.print(r);
            num/=10;
        }
        System.out.println("reverse of the digits"+
reverse);
        if(reverse==num1)
            System.out.println("Palindrome");
        else
            System.out.println("Not a Palindrome");
        }
}
```

Output:

Enter your number to Check for Armstrong

1537

7351reverse of the digits7351

Not a Palindrome

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

```
package assessment;
```

```

import java.util.Scanner;

public class PowerValue1 {

    public static void main(String[] args) {
        // TODO Auto-generated method stub

        Scanner scanner = new Scanner(System.in);

        System.out.print("Enter the base number: ");
        double base = scanner.nextDouble();

        System.out.print("Enter the exponent number:");
        int exponent = scanner.nextInt();

        double power = calculatePower(base,
exponent);

        System.out.println("Power value: " + power);

        scanner.close();
    }

    public static double calculatePower(double base,
int exponent) {
        double result = 1;

        if (exponent >= 0) {
            for (int i = 1; i <= exponent; i++) {
                result *= base;
            }
        } else {
            for (int i = 1; i <= -exponent; i++) {
                result /= base;
            }
        }

        return result;
    }
}

```

Output:

```

Enter the base number: 5
Enter the exponent number: 7
Power value: 78125.0

```

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

a. eg: the Hindu -> The Hindu

```
package assessment;
```

```
public class Uppercase1 {
```

```
    public static void main(String[] args) {
        // TODO Auto-generated method stub

        String txt = "the Hindu";
        int h = 0;
        boolean capitalize = true;
        StringBuilder sb = new StringBuilder(txt);
        while (h < sb.length()) {
            if (sb.charAt(h) == ' ') {
                capitalize = true;
            }
            else if (capitalize &&
!Character.isWhitespace(sb.charAt(h)))
            {
                sb.setCharAt(h,
Character.toUpperCase(sb.charAt(h))); capitalize = false;}
            h++;
        }
        System.out.println(sb.toString());
    }
}
```

Output:

The Hindu

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

```
package assessment;
```

```
public class CountingofDigitss {
```

```
    public static void main(String[] args) {
        // TODO Auto-generated method stub
        String input = "abc123xyz456";
        int digitCount = countDigits(input);

        System.out.println("Number of digits: " + digitCount);
    }
}
```

```
    public static int countDigits(String input) {
```

```
    int digitCount = 0;

    for (int i = 0; i < input.length(); i++) {
        char ch = input.charAt(i);

        if (Character.isDigit(ch)) {
            digitCount++;
        }
    }

    return digitCount;
}
```

Output:

No of digits 6

i.e 123456