Lab assignment -1

Q-1: write a java program to check whether given number is Armstrong number or not.

```
package lab_assignment1;

import java.util.*;

public class Armstrong_number {

     public static void main(String[] args) {
          // TODO Auto-generated method stub
             int number =185;
              int check = 0,rem,sum=0;
                System.out.println("Enter the number to
be verified:");
             Scanner sc =new Scanner(System.in);
             number=sc.nextInt();
             while (check!=0) {
              rem = check%10;
              sum=sum+(rem*rem*rem);
              check=check/10;
             }
             if(sum==number)
              System.out.println("Given number is
armstrong ");
             else
             System.out.println("Given number is not an
armstrong");


             }


     }
```

Output:

```
Enter the number to be verified:
185
Given number is not an armstrong
```

Q-2: write a java program to display all the Armstrong number between 10 to 1000.

```
package lab_assignment1;

public class Display_armstong {

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

		int i=10,a,arm,n,temp;
		System.out.println("Armstrong numbers between
10 to 1000 are");
		while(i<1000)
		{
		n=i;
		arm=0;
		while(n>0)
		{
			a=n%10;
			arm=arm+(a*a*a);
			n=n/10;
		}
		if(arm==i)
			System.out.println(i);
		i++;
		}
		}
	}
```

Output:

```
Armstrong numbers between 10 to 1000 are
153
370
371
407
```

Q-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!+….n!

a.
```
package lab_assignment1;

import java.util.*;
public class Sum_of_series {

    public static void main(String[] args) {
        // TODO Auto-generated method stub
            Scanner obj = new Scanner(System.in);

            int i,n;
            float x,sum=0f;

            System.out.println("Program to find sum
of x-1/x+2/x-3/x...n/x ");
            System.out.println("Enter x value ");
            x=obj.nextFloat();

            System.out.println("Enter n value ");
            n=obj.nextInt();

            for(i=1;i<=n;i++)
                sum=sum+(float)i/x;

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


        }
}
```

Output:

```
Program to find sum of x-1/x+2/x-3/x...n/x
Enter x value
2
Enter n value
3
Sum of Series : 3.0
```

B : 1!+2!+3!+……n!

```
package lab_assignment1;

public class factorial {


            // Function to return sum
            // 1!+2!+3!+.....n!
            static int findFactSum(int N)
            {

                int f = 1, Sum = 0;


                for (int i = 1; i <= N; i++) {

                    f = f * i;
                    Sum += f;
                }

                return Sum;
            }

            public static void main(String[] args)
            {
                int N = 8;

                System.out.print(findFactSum(N));
            }
        }
```

Output: 46233

Q-4: write a java program to check given number is perfect number or not

```
package lab_assignment1;

public class perfect_number {

	public static void main(String[] args) {
		// TODO Auto-generated method stub
		int n = 28, sum = 0;

		 for (int i = 1; i < n; i++)
		   {
		    if (n % i == 0)
		        sum = sum + i;
		   }

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

		}

	}
```

Output:

```
28 Is a perfect number
```

Q-5: Display all perfect numbers between 1 to 100000

```
package lab_assignment1;

public class All_perfect {

    public static void main(String[] args) {
        // TODO Auto-generated method stub
        int num, start=1 ,end=100000, i, sum;

          System.out.println("Perfect Numbers between
1 to 100000");
          for(num=start; num<=end; num++)
          {
              sum = 0;
              for(i=1; i<num; i++)
              {
                  if(num%i==0)
                      sum = sum+i;
              }
              if(sum==num)
                  System.out.print(num+ " ");
          }
      }

    }
```

Output:

```
Perfect Numbers between 1 to 100000
6 28 496 8128
```

Q-6: write a program to extract only character from a string

Eg:Af02284khff ->Afkhff

```
package lab_assignment1;
import java.util.*;
public class extract {
    public static void main(String[] args) {
        // TODO Auto-generated method stub
    String text, digits="", string="",
                symbols="";
                char ch;
                int i = 0;
                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>='0' & ch<='9')
                    digits=digits +ch;
else if(ch>='a' & ch<='z' | ch>='A' & ch<='Z')
                    string=string + ch;
                    else if(ch!=' ')
                    symbols=symbols + ch;
                    }
System.out.println("extracted digits "+digits);
System.out.println("extracted string "+string);

                }
                }
}
```

Output:

```
Enter your text
af02284khff
length of the string11
extracted digits 02284
extracted string afkhff
```

Q-7: write a program to find reverse of digits

```
package lab_assignment1;

public class Reverse_of_digits {

	public static void main(String[] args) {
		// TODO Auto-generated method stub
		int digits = 123456789, reverse = 0;
		while(digits != 0)
		{
		int remainder = digits % 10;
		reverse = reverse * 10 + remainder;
		digits = digits/10;
		}
		System.out.println("The reverse of the given
digits is: " + reverse);
		}

	}
```

Output:

```
The reverse of the given digits is: 987654321
```

Q-8: write a program to find power value of given base and exponent number

```
    package lab_assignment1;
import java.util.*;

public class power_value {

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

          Scanner sc = new Scanner(System.in);

           System.out.println("Enter the base number
::");

           int base = sc.nextInt();
           int temp = base;

           System.out.println("Enter the exponent
number ::");

           int exp = sc.nextInt();

           for (int i=1; i<exp; i++){
              temp = temp*temp;
           }
           System.out.println("Result of "+base+"
power "+exp+" is "+temp);

    }

}
```

Output:

```
Enter the base number :
12
Enter the exponent number :
4
Result of 12 power 4 is 429981696
```

Q-9:write a program to convert every first letter of string to capital letter

Eg: the Hindu ->The Hindu

```
     package lab_assignment1;
public class Capitalize_letter {

     public static String capitalize(String inputString) {
       char firstLetter = inputString.charAt(0);
       char capitalFirstLetter =
Character.toUpperCase(firstLetter);
return
inputString.replace(inputString.charAt(0),
capitalFirstLetter);
     }
public static void main(String[] args) {

          String myName = "chinni";
          System.out.println("myName = " + myName);
          System.out.println("capitalize(myName) = " +
capitalize(myName) + "\n");

          String mySchoolName = "gnanadeep";
          System.out.println("mySchoolName = " +
mySchoolName);
          System.out.println("capitalize(mySchoolName) = " +
capitalize(mySchoolName) + "\n");

          String myCountryName = "india";
          System.out.println("myCountryName = " +
myCountryName);
          System.out.println("capitalize(myCountryName) = " +
capitalize(myCountryName) + "\n");

     }
}
```

Output:

```
myName = chinni
capitalize(myName) = Chinni

mySchoolName = gnanadeep
capitalize(mySchoolName) = Gnanadeep

myCountryName = india
capitalize(myCountryName) = IndIa
```

Q-10: write a program to count no .of digits present in a string

```
package lab_assignment1;
import java.util.*;

public class digit {

     public static void main(String[] args) {
          Scanner key = new Scanner(System.in);
          System.out.println("Enter your number of
digits ");
          String text = key.nextLine();
          int count=0;
          for(int i=0;i<text.length();i++)
          {
          if(text.charAt(i)==' ')
          count++;
          }
          System.out.println("no. of digits "+
          ++count);
}
}
```

Output:

```
Enter your number of digits
12 34 45 76 89 45
no. of digits 6
```