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Sub: CSAP043-Programming
in Java for Application
Development

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1. Write a Program to Print the following Pattern.

```
import java.util.Scanner;  
class main {
```

```
    public static void main (String [], args)
```

```
    Scanner input = new Scanner (System.in);
```

```
    char c = input.next().charAt(0);
```

```
    int n = input.nextInt();
```

```
    for (int i=1; i<=n; i++)
```

```
    {
```

```
        for (int j=1; j<=i; j++)
```

```
        {  
            System.out.print(c);
```

```
        }
```

```
        System.out.println();
```

```
    }
```

2. Find the Year of the given data & leap year or not.

```
import java.util.Scanner;
```

```
public class a {
```

```
    public static void main (String [], args)
```

```
    {  
        Scanner input = new Scanner (System.in);
```

```
        System.out.print("Enter Year:");
```

```
        String year = input.next();
```

```
        String a[] = year.split("/");
```

```
        String d = a[2];
```

```
        int num = Integer.parseInt(d);
```

```
        if ((num%4 == 0 && num%100 != 0) || num%400 == 0)
```

```
        {  
            System.out.println("It is a leap Year");
```

```
        }  
        else
```

```
        {  
            System.out.println("Not a leap Year");
```

```
        }  
    }
```

3. Find the number of factors for the given number.
Import Java Util Scanner();
class main {

```
    public static void main (String [] args);  
    Scanner Input = new Scanner (System.in);  
    int n = Input.nextInt();  
    int factors = 0;  
    for (int i = 1; i <= n; i++)  
    {  
        if (n % i == 0)  
            factors = factors + 1;  
    }  
    System.out.println ("Number of factors = " + factors);
```

~~Scanner Input~~

```
Scanner Input = new Scanner (System.in);  
int n = Input.nextInt();  
int factors = 0;  
for (int i = 1; i <= n; i++)  
{  
    if (n % i == 0)  
        factors++;  
}  
System.out.println (factors);
```

4. Write a Program to print the given number is Perfect number or not?

```
Import Java Util Scanner();  
class main {  
    public static void main (String [] args);  
    Scanner Input = new Scanner (System.in);  
    int n = Input.nextInt();  
    int factors = 0;  
    for (int i = 1; i <= n; i++)  
    {  
        if (n % i == 0)  
            factors = factors + 1;  
    }  
    if (n == factors)  
        System.out.println ("It's a Perfect Number");
```


5. Write a Program to print the number of vowel in the given statement.

```
import java.util Scanner();  
class main{
```

```
    public static void main (String[] args);  
    Scanner Input = new Scanner (System.in);
```

```
    String name = Input.nextLine();
```

```
    int len = name.length();
```

```
    char a[] = new char[len];
```

```
    int vowel = 0
```

```
    for (int i = 0; i < len; i++)
```

```
    {  
        a[i] = name.charAt(i);
```

```
        if (a[i] == 'a' || a[i] == 'e' || a[i] == 'i' || a[i] == 'o' || a[i] == 'u'
```

```
            || a[i] == 'A' || a[i] == 'E' || a[i] == 'I' || a[i] == 'O' ||  
                a[i] == 'U')
```

```
            vowel = vowel + 1;
```

```
    }  
    System.out.println(vowel);
```

6. Write a Program to print consonants and vowel separately in the given word.

```
import java.util Scanner();
```

```
class main{
```

```
    public static void main (String[] args);
```

```
    Scanner Input = new Scanner (System.in);
```

```
    String name = input.nextLine();
```

```
    int len = name.length();
```

```
    char a[] = new char[len];
```

```
    char vowel[] = new char [len];
```

```
    char con[] = new char [len];
```

```
    int v = 0, c = 0;
```

```

for (int p=0; p<con; p++)
{
    a[p] = name.charAt(i);
    if (a[p] == 'a' || a[p] == 'e' || a[p] == 'i' || a[p] == 'o' ||
        a[p] == 'u' || a[p] == 'E' || a[p] == 'I' || a[p] == 'O' ||
        a[p] == 'U')
    {
        vowel[v] = a[p];
        v++;
    }
    else
    {
        con[p] = a[p];
        c++;
    }
}
System.out.println("Consonants : ");
for (int p=0; p<v; p++)
{
    System.out.print(vowel[p],
}
System.out.print("\n vowels: ");
for (int p=0; p<c; p++)
{
    System.out.print(con[p]);
}

```

7 Write a Program to Print the Fibonacci series.

```

import java.util.Scanner (System.in);

```

```

int n=Input.nextInt();

```

```

int a1=0, a2=1;

```

```

for (int p=0; p<n; p++)

```

```

{
    System.out.print(a1 + " ");

```

```

    int a3=a1+a2;

```

```

    a1=a2;

```

```

    a2=a3;
}

```


8. Write Program to find the square, cube of the given decimal number sample input.

Improve Java with Scanner;
class main {

```
    public static void main (String[] args)
    Scanner Input = new Scanner (System.in);
    float n = Input.nextFloat();
    System.out.print ("Square: " + (n*n));
    System.out.print ("Cube: " + (n*n*n));
```

9. Program to find the frequency of each element in the array.

Improve Java with Scanner();

class main {

```
    public static void main (String[] args)
    Scanner Input = new Scanner (System.in);
    int a[] = new int[] { 1, 2, 8, 3, 2, 2, 5, 13 };
    int b[] = new int[a.length];
    int visited = -1;
    for (int i = 0; i < a.length; i++)
```

```
    {
        int count = 1;
        for (int j = i + 1; j < a.length; j++)
```

```
        {
            if (a[i] == a[j])
```

```
            {
                count++;
```

```
                b[j] = visited;
```

```
            }
```

```
        }
```

```

if (a[i] != visited)
    count++;

```

```

for (int i=0; i<a.length; i++)

```

```

{
    if (a[i] != visited)
        System.out.println(a[i] + " + " + a[i]);
}

```

```

}
}
}

```

10. Write a Program to Print the given number is Perfect number or not?

```

import java.util.Scanner();
class main {

```

```

    public static void main (String[] args)

```

```

    {
        Scanner input = new Scanner (System.in);

```

```

        int n = input.nextInt();

```

```

        int factors = 0;

```

```

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

```

```

        {
            if (n % i == 0)

```

```

                factors = factors + i;

```

```

        }

```

```

        if (n == factors)

```

```

            System.out.print ("It's a Perfect number");

```