

## Problem 1: Number of common factors

```
package ishwarchavan.com;

public class CommonFactor {
    static int gcd(int a, int b){    // method to calculate gcd of two numbers
        if (a == 0)
            return b;

        return gcd(b % a, a);
    }
    static int commDiv(int a, int b){    // method to calculate all common divisors
of two given numbers

        int n = gcd(a, b);    //function calling
        int result = 0;
        for (int i = 1; i <= Math.sqrt(n); i++) {    //loop iteration

            if (n % i == 0) {    // if 'i' is factor of n

                if (n / i == i)    // check if divisors are equal
                    result += 1;
                else
                    result += 2;
            }
        }
        return result;
    }

    public static void main(String args[]) {    //main program created
        int a = 12, b = 24;
        System.out.println(commDiv(a, b));    //function calling
    }
}
```

## Problem 2: Vowels of all Substrings

```
package ishwarchavan.com;
import java.io.*;
import java.util.*;

public class VowelsOfAllSubstrings {    //class created
    static int vowel_calc(String s){    //function created
        int n = s.length();
        int arr[] = new int[n];

        for (int i = 0; i < n; i++) {    //loop iterating

            if (i == 0)
                // No. of occurrences of 0th character in all the
substrings
                arr[i] = n;

            else
                // No. of occurrences of ith character
in all the substrings
                arr[i] = (n - i) + arr[i - 1] - i;
        }

        int sum = 0;
        for (int i = 0; i < n; i++) {
            char ch = s.charAt(i);

            if (ch == 'a' || ch == 'e' || ch == 'i'    // Check if ith character
is a vowel
```

```
        || ch == 'o' || ch == 'u')
        sum += arr[i];
    }
    return sum;    // Return the total sum of occurrences of vowels
}
public static void main(String args[]){    //main program created
    String s = "daceh";
    System.out.println(vowel_calc(s));
}
}
```