Find the number of factors for the given number

CODE:

import java.util.Scanner;

public class NumberOfFactors {

public static void main(String[] args) {

Scanner scanner = new Scanner(System.in);

// Getting the number from the user

System.out.print("Enter a number: ");

int number = scanner.nextInt();

// Calculating and displaying the number of factors

int numOfFactors = countFactors(number);

System.out.println("Number of factors for " + number + ": " + numOfFactors);

scanner.close();

}

public static int countFactors(int number) {

int count = 0;

// Iterate from 1 to the square root of the number

// Count the factors in pairs (i, number/i) if they divide the number evenly

for (int i = 1; i <= Math.sqrt(number); i++) {

if (number % i == 0) {

// If i is a factor, increment count

count++;

// If the divisor (number/i) is not same as the factor, increment count again

// This handles cases like 4 where 2 is counted once, not twice

if (number / i != i) {

count++;

}

}

}

return count;

}

}

OUTPUT:

C:\javap>javac NumberOfFactors.java

C:\javap>java NumberOfFactors

Enter a number: 8

Number of factors for 8: 4

