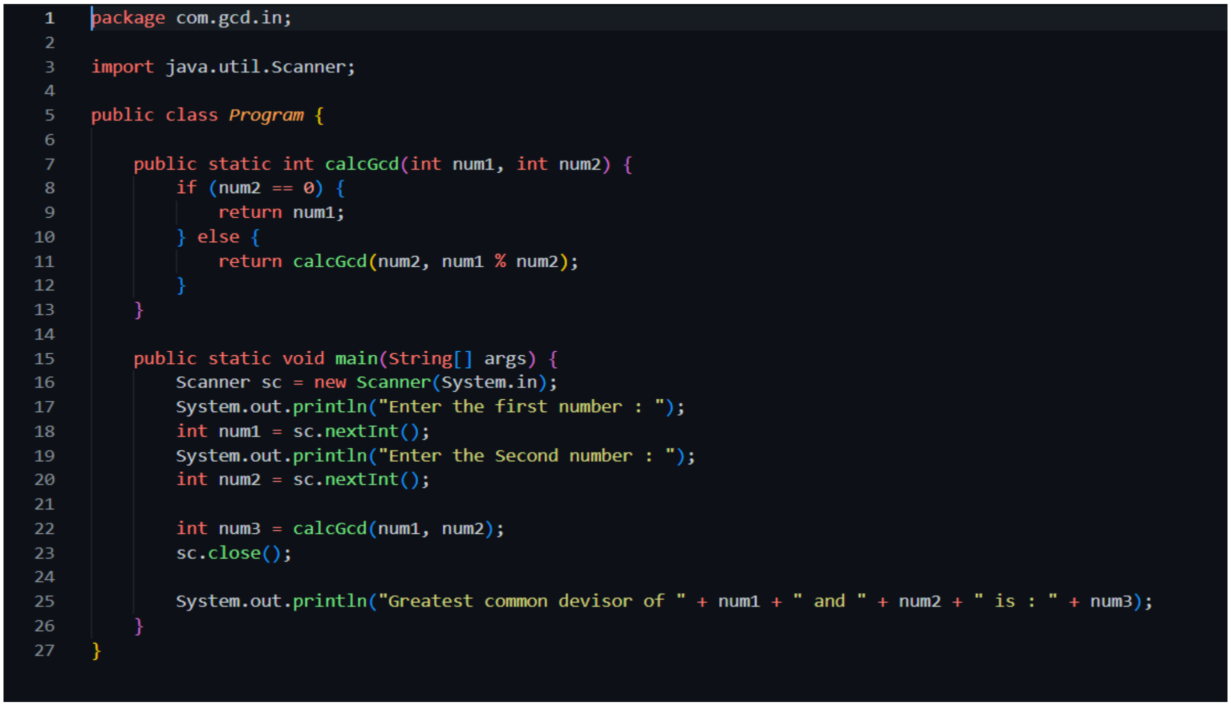
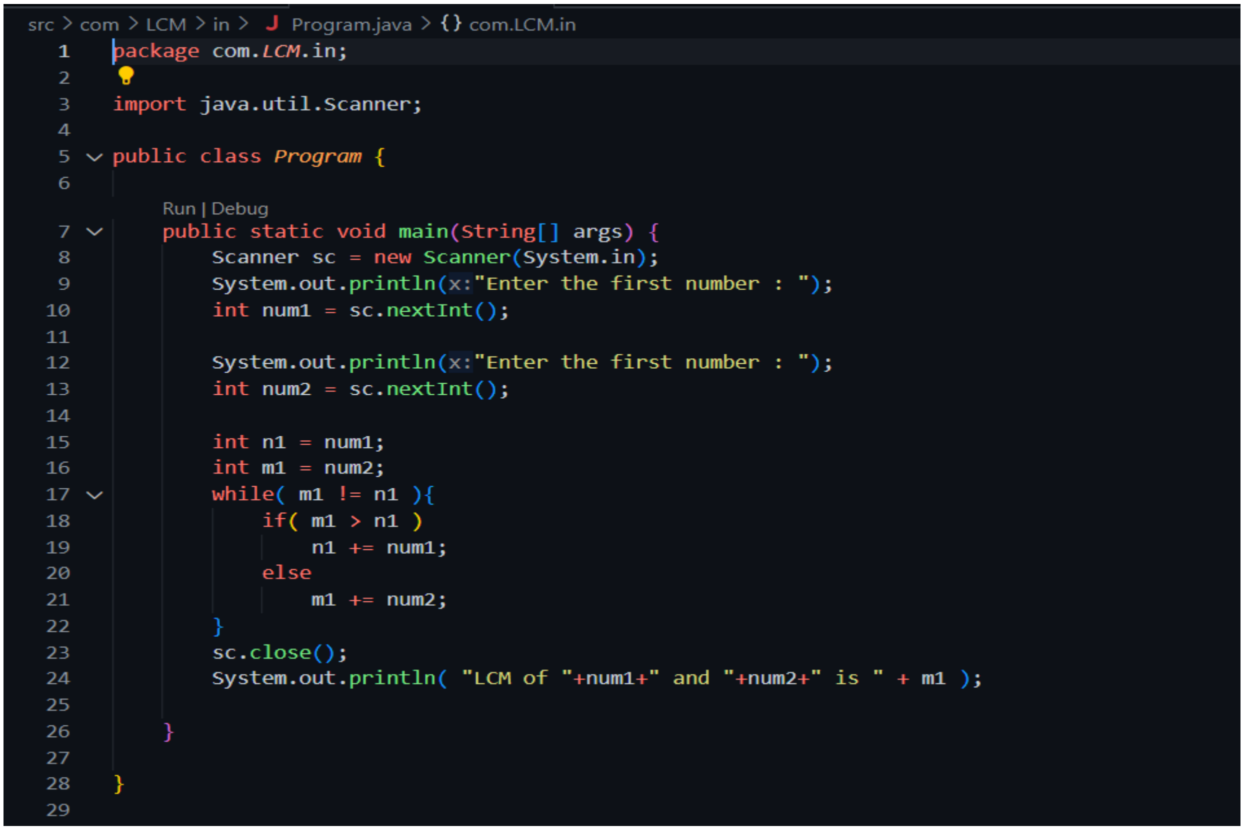
1. Write a Java Program to find GCD of two given numbers.



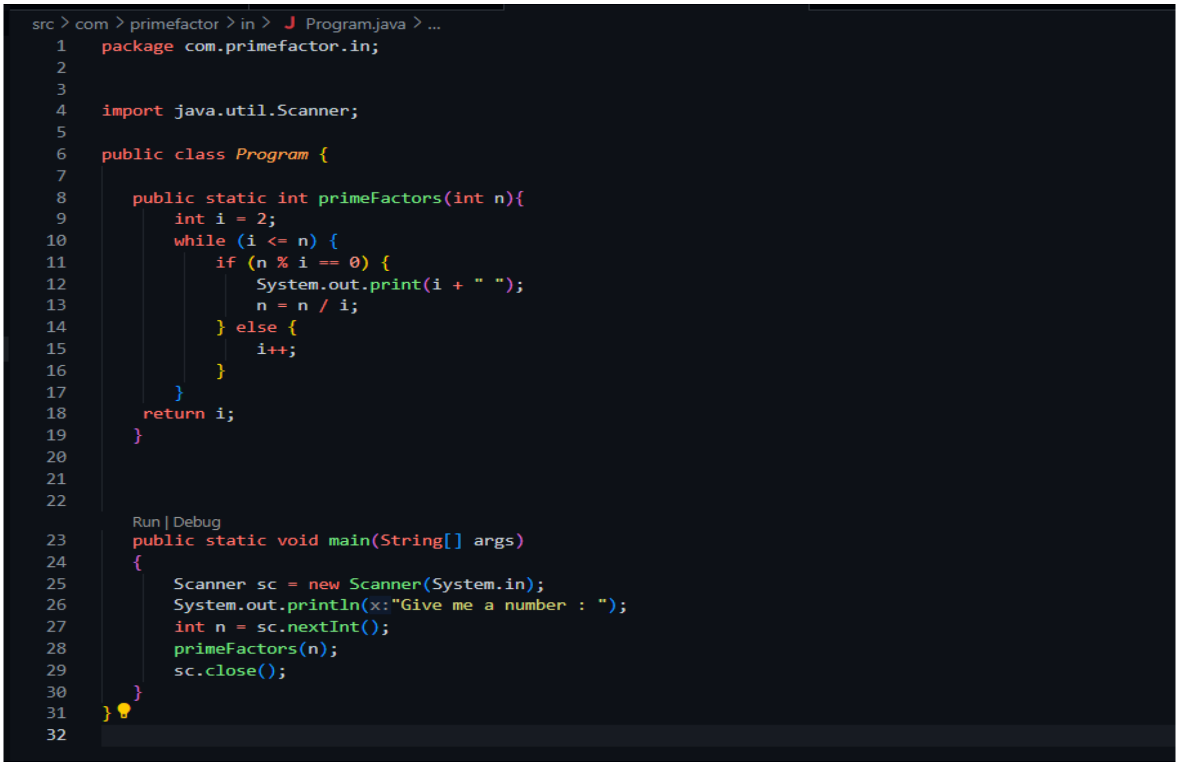
```java
package com.gcd.in;

import java.util.Scanner;

public class Program {

    public static int calcGcd(int num1, int num2) {
        if (num2 == 0) {
            return num1;
        } else {
            return calcGcd(num2, num1 % num2);
        }
    }

    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter the first number : ");
        int num1 = sc.nextInt();
        System.out.println("Enter the Second number : ");
        int num2 = sc.nextInt();

        int num3 = calcGcd(num1, num2);
        sc.close();

        System.out.println("Greatest common devisor of " + num1 + " and " + num2 + " is : " + num3);
    }
}
```

2. Write a java program to LCM of TWO given number.



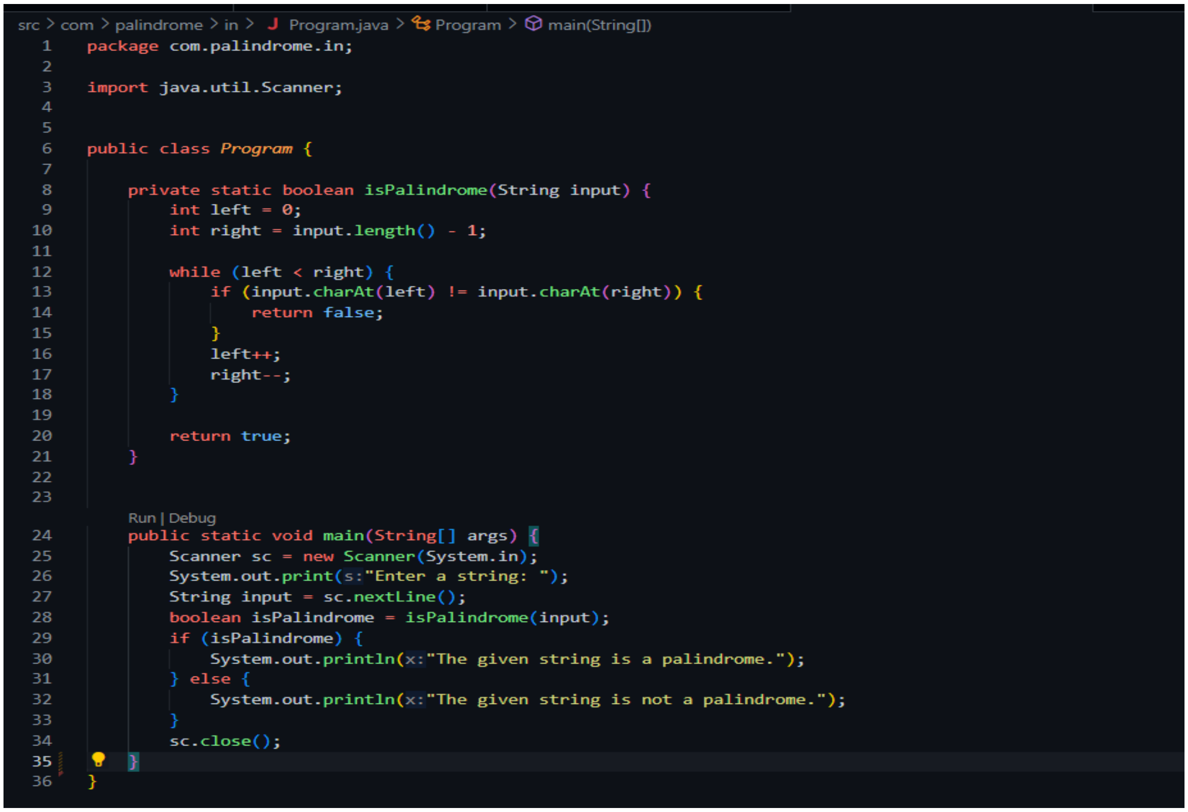
```java
package com.LCM.in;

import java.util.Scanner;

public class Program {

    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.println(x:"Enter the first number : ");
        int num1 = sc.nextInt();

        System.out.println(x:"Enter the first number : ");
        int num2 = sc.nextInt();

        int n1 = num1;
        int m1 = num2;
        while( m1 != n1 ){
            if( m1 > n1 )
                n1 += num1;
            else
                m1 += num2;
        }
        sc.close();
        System.out.println( "LCM of "+num1+" and "+num2+" is " + m1 );

    }

}

```

3. Write a Java Program to print all the Prime Factors of the Given Number.



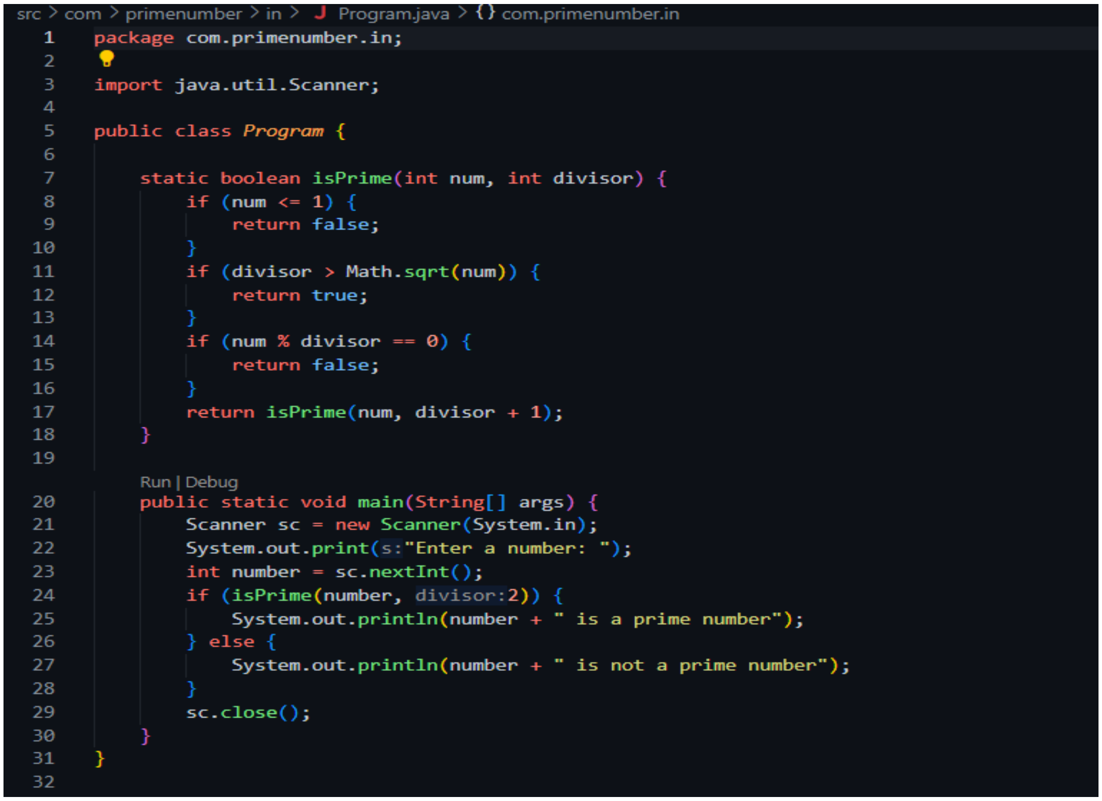
```java
package com.primefactor.in;


import java.util.Scanner;

public class Program {

   public static int primeFactors(int n){
       int i = 2;
       while (i <= n) {
           if (n % i == 0) {
               System.out.print(i + " ");
               n = n / i;
           } else {
               i++;
           }
       }
    return i;
   }



   public static void main(String[] args)
   {
       Scanner sc = new Scanner(System.in);
       System.out.println(x:"Give me a number : ");
       int n = sc.nextInt();
       primeFactors(n);
       sc.close();
   }
}
```

4. Check whether the Given Number is a Palindrome or NOT.


src > com > palindrome > in > Program.java > Program > main(String[])

```java
package com.palindrome.in;

import java.util.Scanner;


public class Program {

    private static boolean isPalindrome(String input) {
        int left = 0;
        int right = input.length() - 1;

        while (left < right) {
            if (input.charAt(left) != input.charAt(right)) {
                return false;
            }
            left++;
            right--;
        }

        return true;
    }


    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print(s:"Enter a string: ");
        String input = sc.nextLine();
        boolean isPalindrome = isPalindrome(input);
        if (isPalindrome) {
            System.out.println(x:"The given string is a palindrome.");
        } else {
            System.out.println(x:"The given string is not a palindrome.");
        }
        sc.close();
    }
}
```

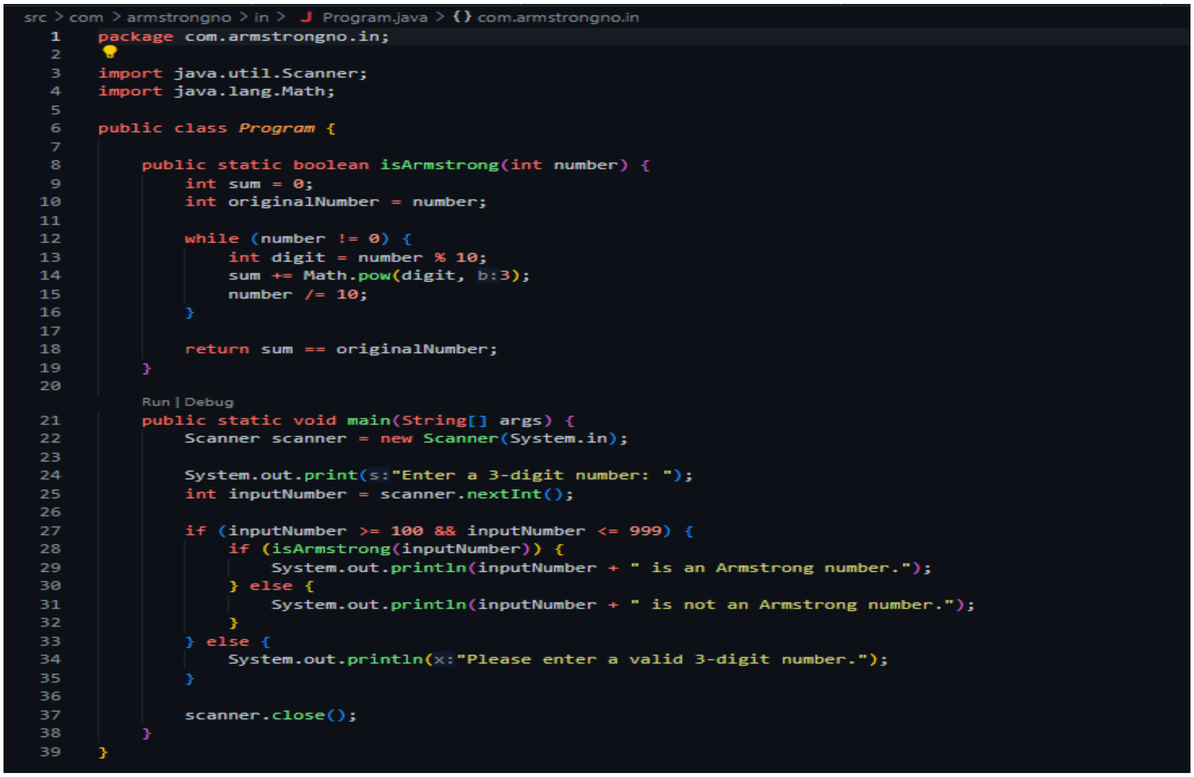
5. Write a Java Program to check whether the Given Number is Prime Number or NOT.



src > com > primenumber > in > J Program.java > {} com.primenumber.in

```java
package com.primenumber.in;

import java.util.Scanner;

public class Program {

    static boolean isPrime(int num, int divisor) {
        if (num <= 1) {
            return false;
        }
        if (divisor > Math.sqrt(num)) {
            return true;
        }
        if (num % divisor == 0) {
            return false;
        }
        return isPrime(num, divisor + 1);
    }

    Run | Debug
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print(s:"Enter a number: ");
        int number = sc.nextInt();
        if (isPrime(number, divisor:2)) {
            System.out.println(number + " is a prime number");
        } else {
            System.out.println(number + " is not a prime number");
        }
        sc.close();
    }
}
```

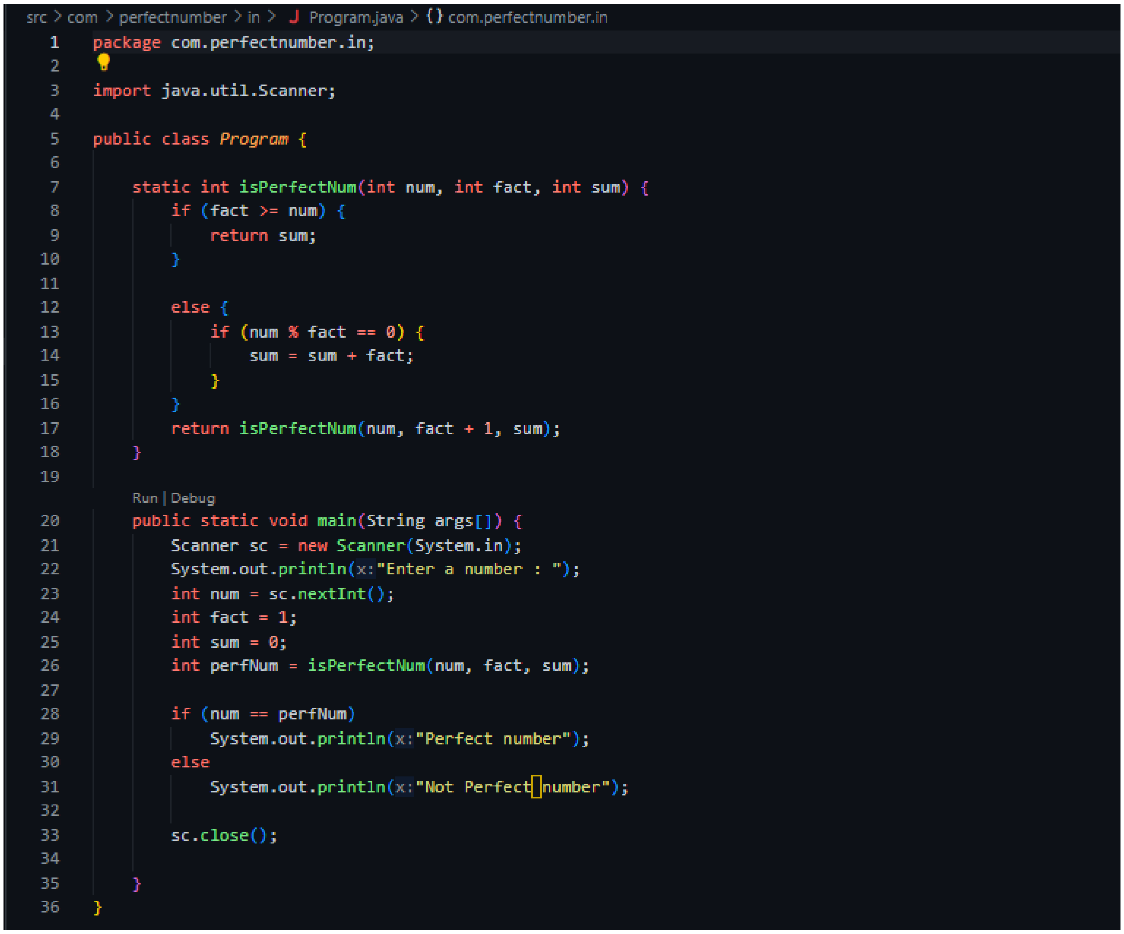
6. Write a Java Program to check whether the given number is Armstrong Numberor NOT.



src > com > armstrongno > in > J Program.java > {} com.armstrongno.in

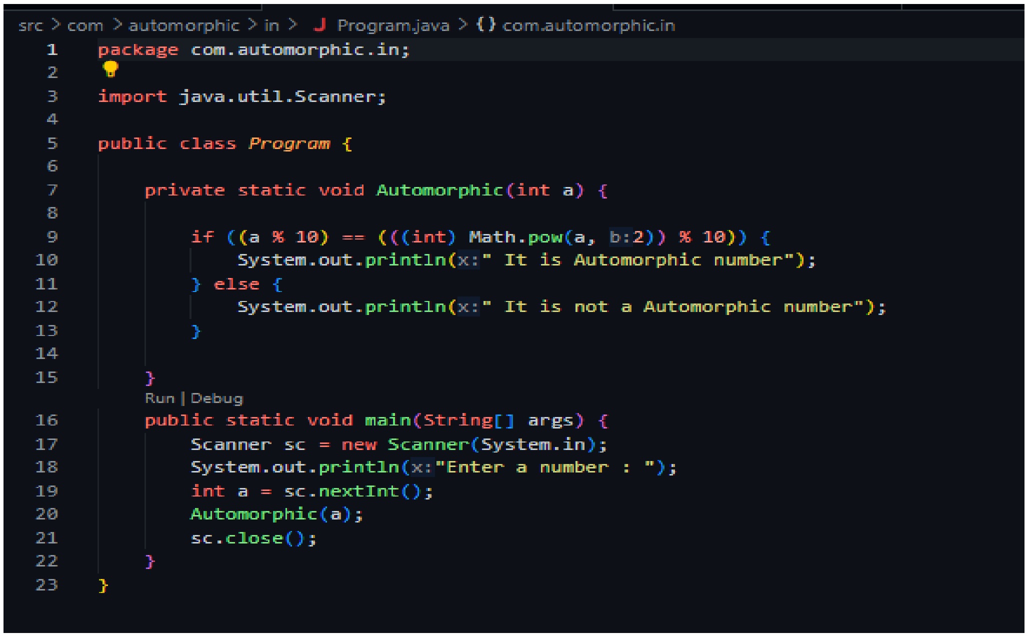
```java
package com.armstrongno.in;

import java.util.Scanner;
import java.lang.Math;

public class Program {

    public static boolean isArmstrong(int number) {
        int sum = 0;
        int originalNumber = number;

        while (number != 0) {
            int digit = number % 10;
            sum += Math.pow(digit, b:3);
            number /= 10;
        }

        return sum == originalNumber;
    }

    Run | Debug
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);

        System.out.print(s:"Enter a 3-digit number: ");
        int inputNumber = scanner.nextInt();

        if (inputNumber >= 100 && inputNumber <= 999) {
            if (isArmstrong(inputNumber)) {
                System.out.println(inputNumber + " is an Armstrong number.");
            } else {
                System.out.println(inputNumber + " is not an Armstrong number.");
            }
        } else {
            System.out.println(x:"Please enter a valid 3-digit number.");
        }

        scanner.close();
    }
}
```

7. Write a Java Program to check whether the given number is Perfect Number or NOT.


src > com > perfectnumber > in > Program.java > {} com.perfectnumber.in
Run | Debug

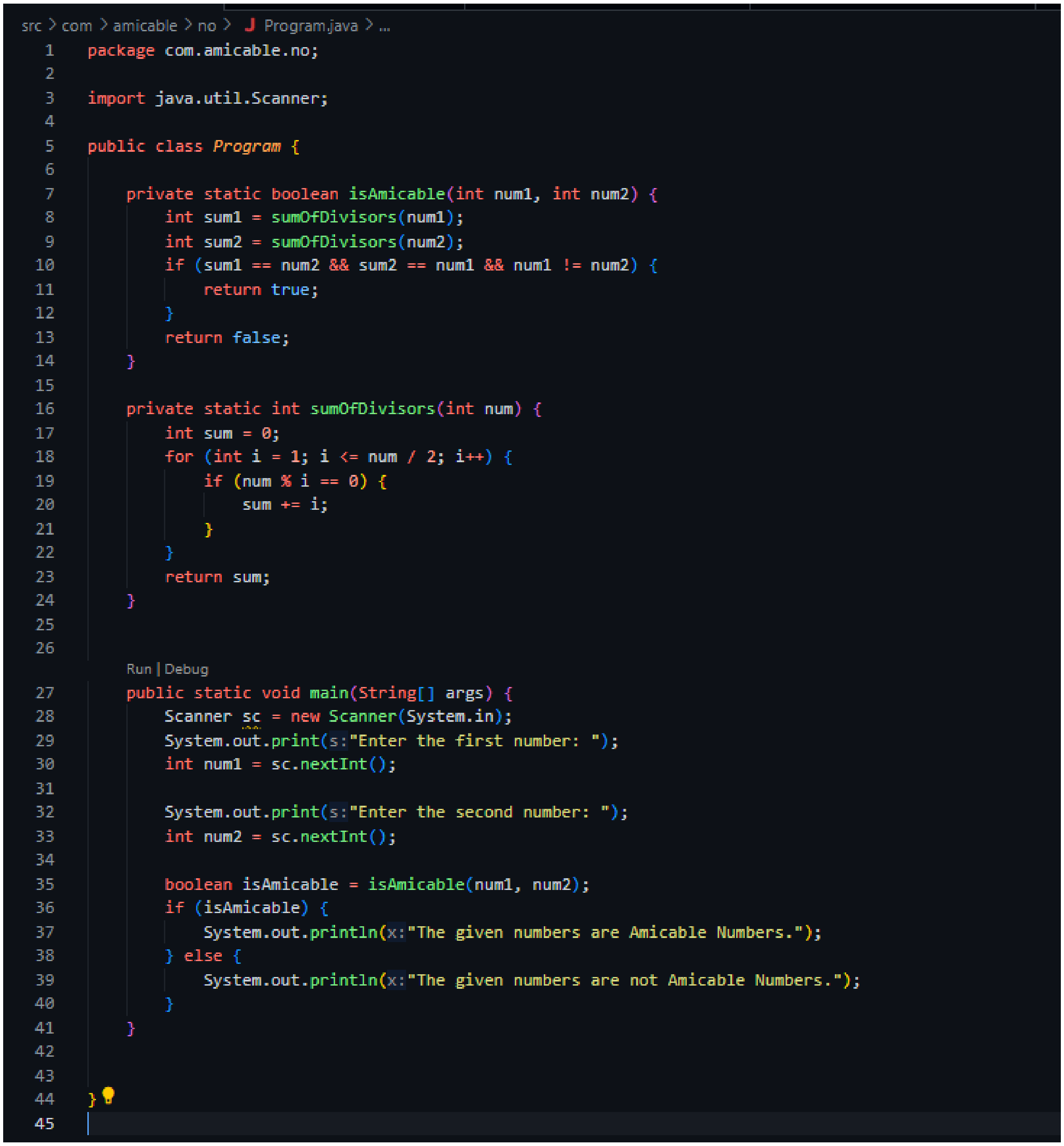
```java
package com.perfectnumber.in;

import java.util.Scanner;

public class Program {

    static int isPerfectNum(int num, int fact, int sum) {
        if (fact >= num) {
            return sum;
        }

        else {
            if (num % fact == 0) {
                sum = sum + fact;
            }
        }
        return isPerfectNum(num, fact + 1, sum);
    }

    public static void main(String args[]) {
        Scanner sc = new Scanner(System.in);
        System.out.println(x:"Enter a number : ");
        int num = sc.nextInt();
        int fact = 1;
        int sum = 0;
        int perfNum = isPerfectNum(num, fact, sum);

        if (num == perfNum)
            System.out.println(x:"Perfect number");
        else
            System.out.println(x:"Not Perfect number");

        sc.close();

    }
}
```

9. Write a Java Program check whether the given number is Automorphic Numberor NOT.


src > com > automorphic > in > Program.java > {} com.automorphic.in
Run | Debug

```java
package com.automorphic.in;

import java.util.Scanner;

public class Program {

    private static void Automorphic(int a) {

        if ((a % 10) == (((int) Math.pow(a, b:2)) % 10)) {
            System.out.println(x:" It is Automorphic number");
        } else {
            System.out.println(x:" It is not a Automorphic number");
        }

    }
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.println(x:"Enter a number : ");
        int a = sc.nextInt();
        Automorphic(a);
        sc.close();
    }
}
```

8. Write a Java Program to check whether the given numbers are Amicable Numbers or NOT.



```java
package com.amicable.no;

import java.util.Scanner;

public class Program {

    private static boolean isAmicable(int num1, int num2) {
        int sum1 = sumOfDivisors(num1);
        int sum2 = sumOfDivisors(num2);
        if (sum1 == num2 && sum2 == num1 && num1 != num2) {
            return true;
        }
        return false;
    }

    private static int sumOfDivisors(int num) {
        int sum = 0;
        for (int i = 1; i <= num / 2; i++) {
            if (num % i == 0) {
                sum += i;
            }
        }
        return sum;
    }


    Run | Debug
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print(s:"Enter the first number: ");
        int num1 = sc.nextInt();

        System.out.print(s:"Enter the second number: ");
        int num2 = sc.nextInt();

        boolean isAmicable = isAmicable(num1, num2);
        if (isAmicable) {
            System.out.println(x:"The given numbers are Amicable Numbers.");
        } else {
            System.out.println(x:"The given numbers are not Amicable Numbers.");
        }
    }


}
```