Daily problem - 3

1. Convert days into years, weeks, Days.

1 year : 365days

week : 7days

year : tot / 365

rem : tot % 365

week : rem / 7

days : rem % 7

Output.

795 ?

y : 2

w : 1

d : 3

ii. Days of week :

dayIndex : (day + month + year + leapyear code) % 7

0 : sunday

1 : Monday

2 : Tuesday

3 : Wednesday

4 : Thursday

5 : Friday

6 : Saturday

Output :

31 / 8 / 49 -> Saturday

2. Find student user.

Total user : tot

staff user : sta

non tea : sta / 3

stu : tot - sta - non-tea

Output :

2000

30000

Tea : 1334

non-Tea : 660

stu : 28000

3. No of factors & nth factor.

```
for (i=0; i<=n; i++)
if (n% i ==0)
if (count==n).
   count++
} factor ;
```

Output :

12

4

count : 6

nth factor : 4.

```
if (count >n)
   count
(factor) ->print.
```

4. N prim number after nth prime r

```
for i.2 to √2
if (n% i==0 ) -> not prime.
print next N prime number after it.
```

Output:
7
2 3 5 7 11 13 17

5. perfect square with digit sum ≤10

```
√n * √n = n
digit sum += digit .
   sum += n%10
    n/=10
 if (digitsum ≤10) print(n)
```

Output;
5,15
9

6. Unique permutations of numbers.

```
n! (factorial)
n= remaining. length()
if (n== 0) permutation.add(prefix)
i=0; i<n; i++
prefix+ remaining. charAt(i);
```

Output:
143
134
143
314
341
413
431

7. Array with num & square:

```
lower, upper -
  size=upper-lower+1;
for (i=0; i< size; i++){
int sum= lower+ i;
result [i][0] =num;
result [i][1]= num*num;
```

Output:
1, 5

[(1,1) (2,4) (3,9)
(4, 16)(5,25)]

8. Bank acc:

```
bal:bal + deposit
if(bal - with ≥ 00)
    bal:bal-with
else
    reject
  bal ≥500.
```

Output:

```
Name: Madhuri
Accno: 192465036
Type : Savings
Bal : 28000
```

9. Rev & add

```
rev: rev*10+ lastdigit
lastdigit = n%10
   n /=10
   n ::= rev
New n = n + rev(n)
  & repeat
```

Output.

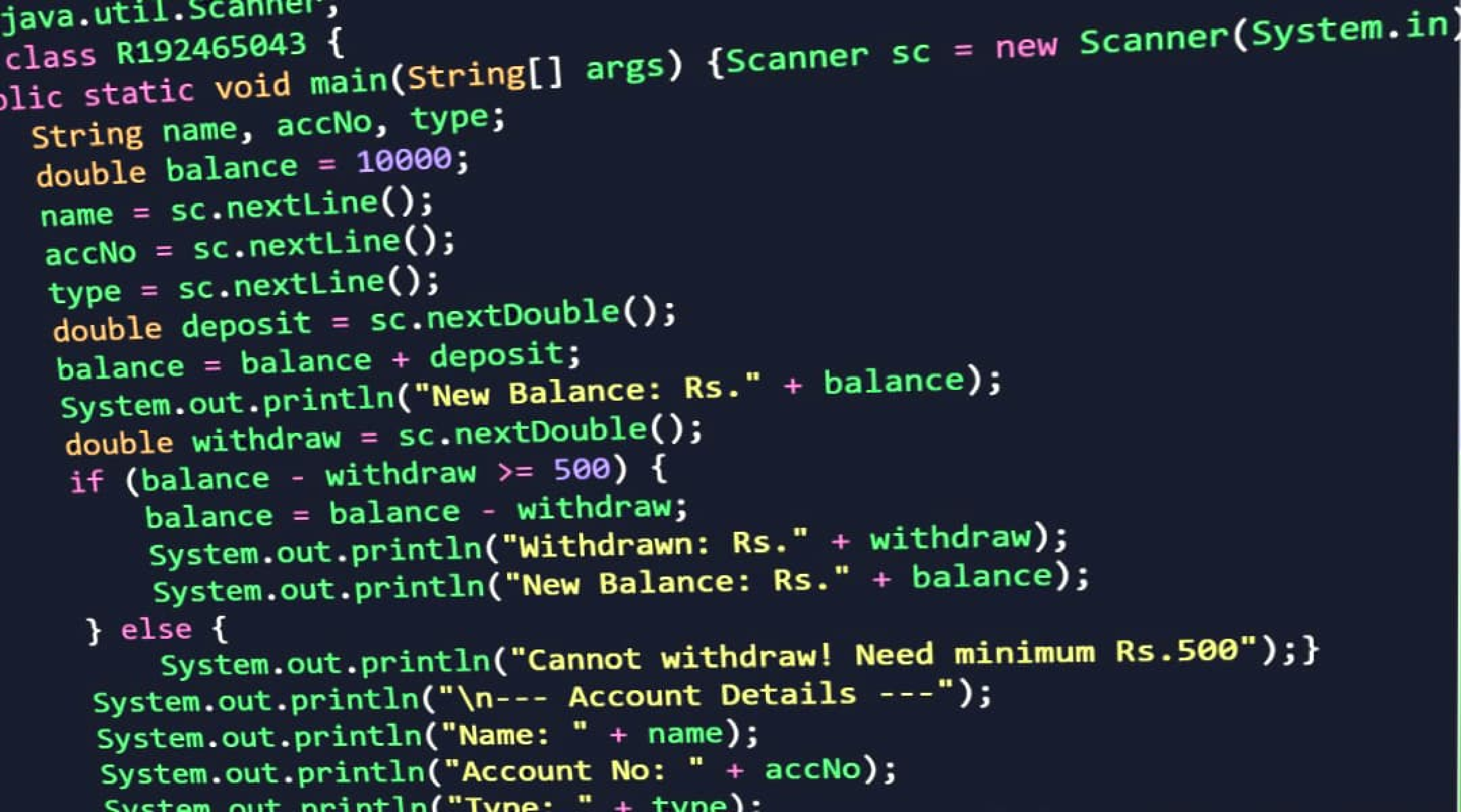
```
153
153+351 =504
504+405 = 909
```

10. Synchronization & inter thread communication:

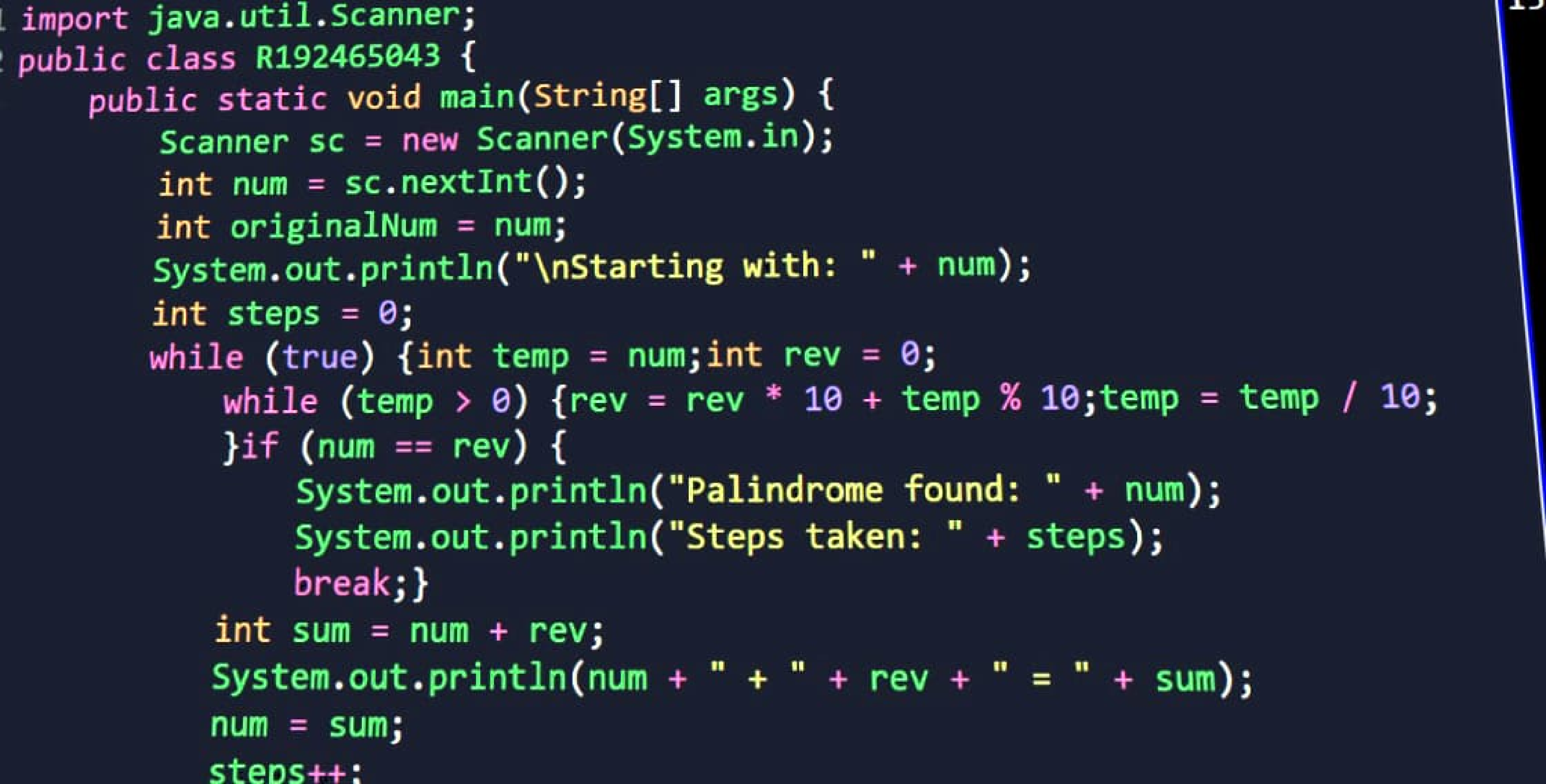
```
if (withdraw amt > bal)
        wait()
  bal = bal + dep
      notify()
bal = bal - withdraw.
```

Output-

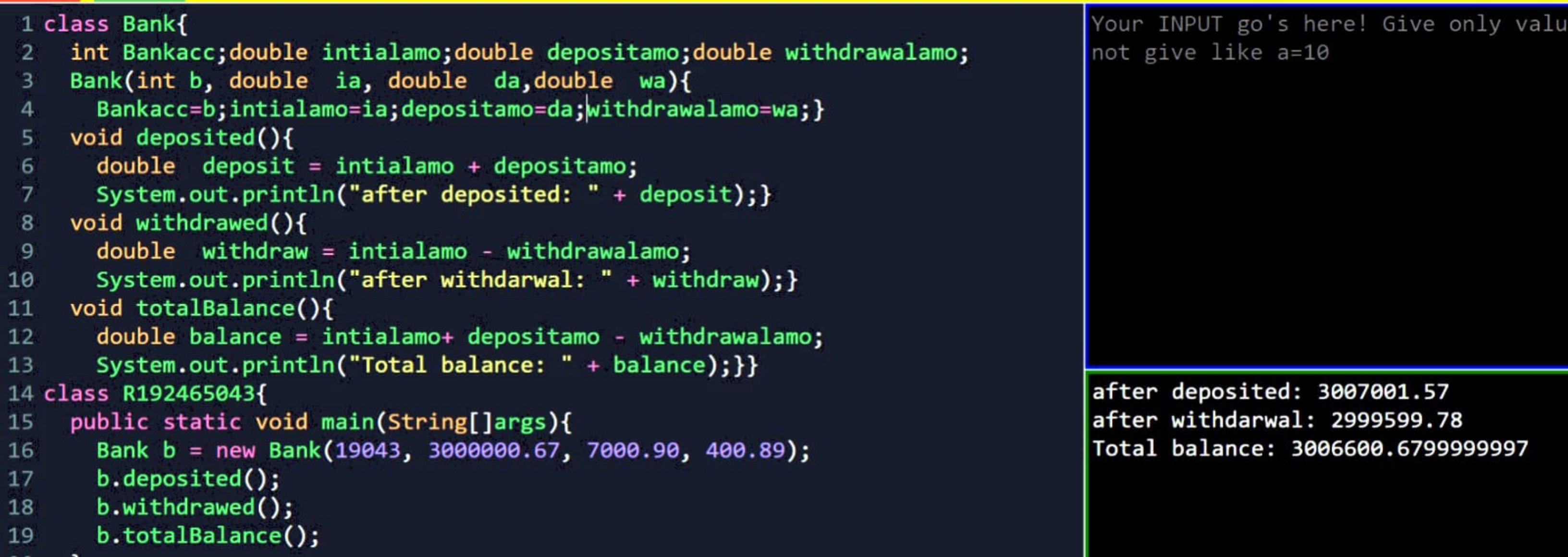
```
deposited 3007.1
withdram : 1500.3.
Tot = 1506.8.
```



```
java.util.Scanner;
class R192465043 {
lic static void main(String[] args) {Scanner sc = new Scanner(System.in
  String name, accNo, type;
  double balance = 10000;
  name = sc.nextLine();
  accNo = sc.nextLine();
  type = sc.nextLine();
  double deposit = sc.nextDouble();
  balance = balance + deposit;
  System.out.println("New Balance: Rs." + balance);
  double withdraw = sc.nextDouble();
  if (balance - withdraw >= 500) {
      balance = balance - withdraw;
      System.out.println("Withdrawn: Rs." + withdraw);
      System.out.println("New Balance: Rs." + balance);
  } else {
      System.out.println("Cannot withdraw! Need minimum Rs.500");}
  System.out.println("\n--- Account Details ---");
  System.out.println("Name: " + name);
  System.out.println("Account No: " + accNo);
  System.out.println("Type: " + type);
```

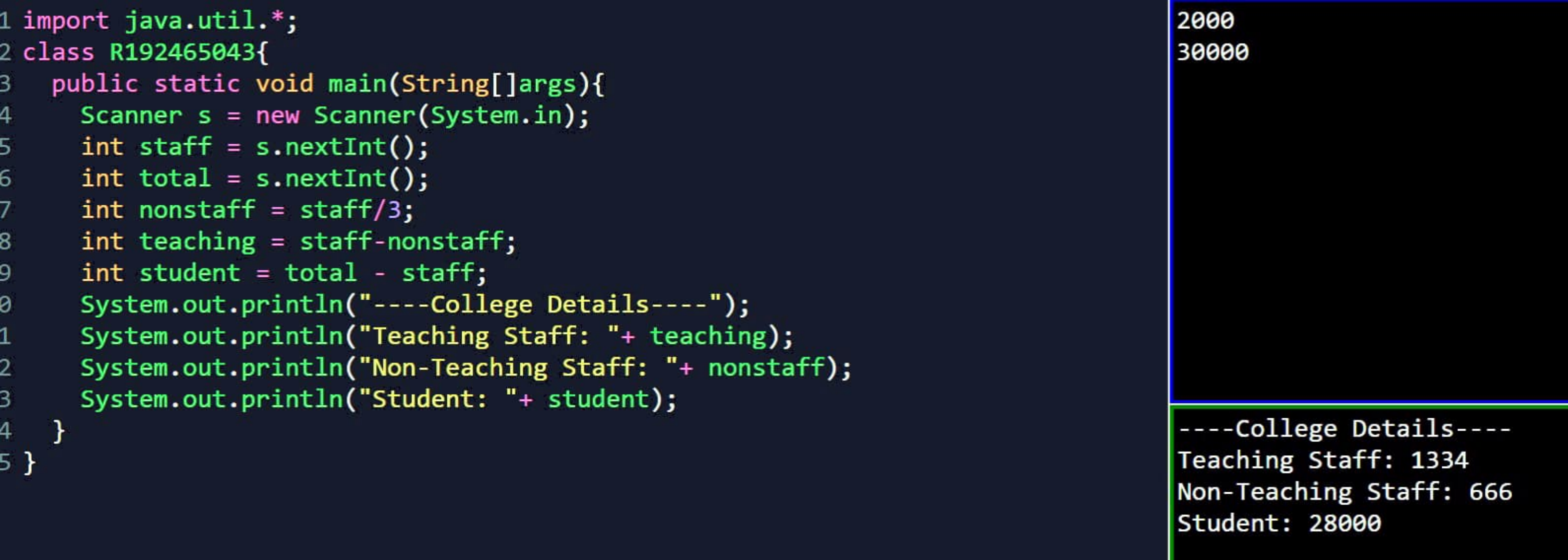


```
import java.util.Scanner;
public class R192465043 {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        int num = sc.nextInt();
        int originalNum = num;
        System.out.println("\nStarting with: " + num);
        int steps = 0;
        while (true) {int temp = num;int rev = 0;
            while (temp > 0) {rev = rev * 10 + temp % 10;temp = temp / 10;
            }if (num == rev) {
                System.out.println("Palindrome found: " + num);
                System.out.println("Steps taken: " + steps);
                break;}
            int sum = num + rev;
            System.out.println(num + " + " + rev + " = " + sum);
            num = sum;
            steps++;
```



```
class Bank{
  int Bankacc;double intialamo;double depositamo;double withdrawalamo;
  Bank(int b, double  ia, double  da,double  wa){
    Bankacc=b;intialamo=ia;depositamo=da;withdrawalamo=wa;}
  void deposited(){
    double  deposit = intialamo + depositamo;
    System.out.println("after deposited: " + deposit);}
  void withdrawed(){
    double  withdraw = intialamo - withdrawalamo;
    System.out.println("after withdarwal: " + withdraw);}
  void totalBalance(){
    double balance = intialamo+ depositamo - withdrawalamo;
    System.out.println("Total balance: " + balance);}}
class R192465043{
  public static void main(String[]args){
    Bank b = new Bank(19043, 3000000.67, 7000.90, 400.89);
    b.deposited();
    b.withdrawed();
    b.totalBalance();
```

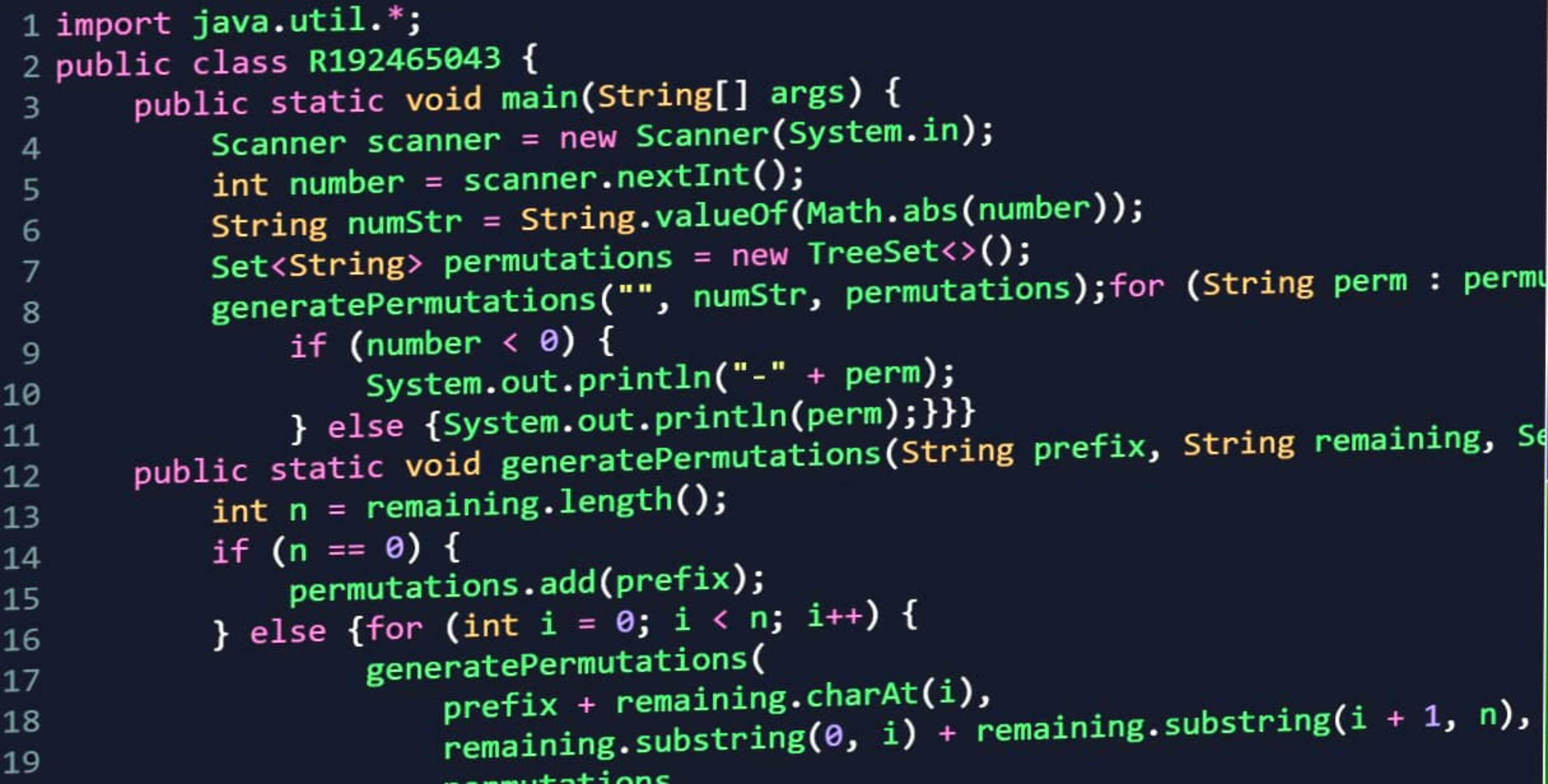
```
after deposited: 3007001.57
after withdarwal: 2999599.78
Total balance: 3006600.6799999997
```



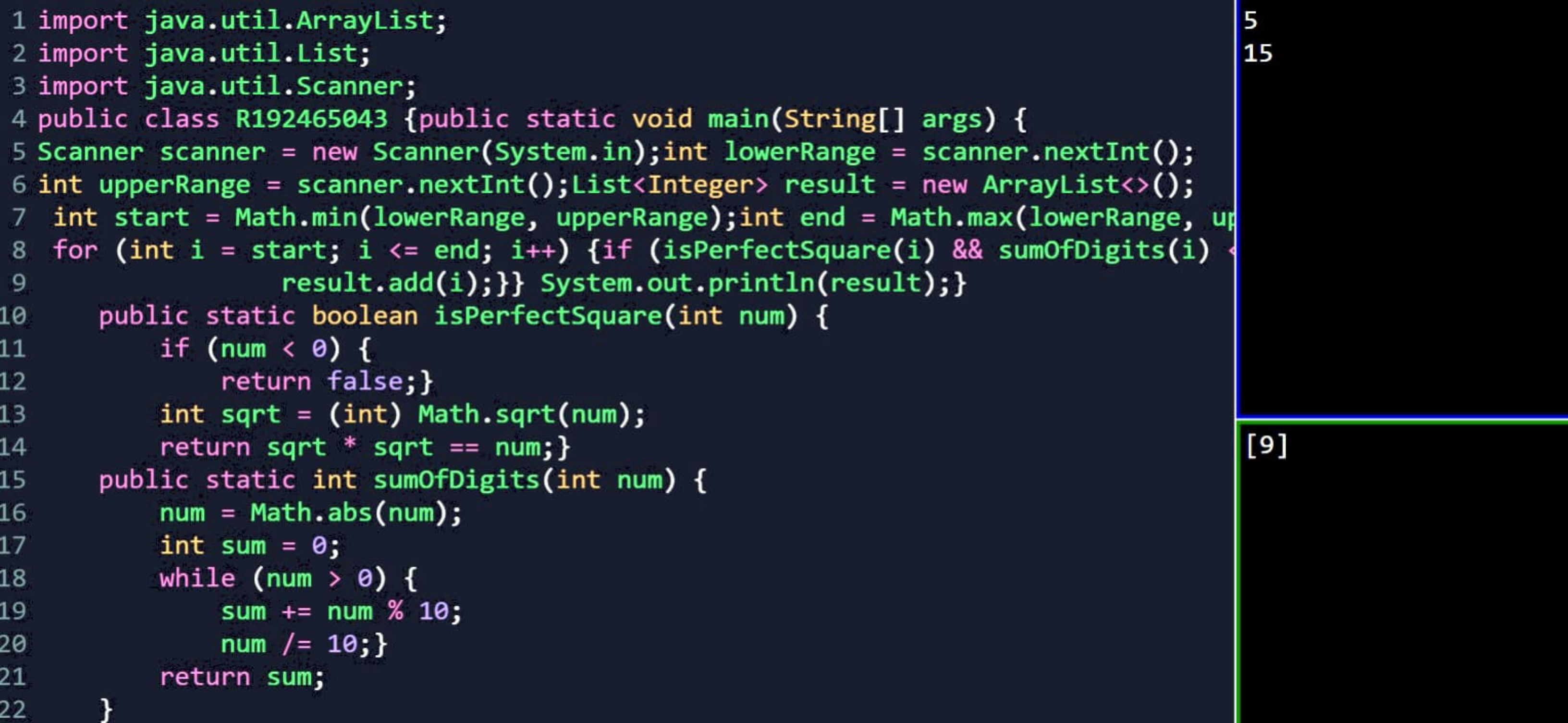
```java
import java.util.*;
class R192465043{
  public static void main(String[]args){
    Scanner s = new Scanner(System.in);
    int staff = s.nextInt();
    int total = s.nextInt();
    int nonstaff = staff/3;
    int teaching = staff-nonstaff;
    int student = total - staff;
    System.out.println("----College Details----");
    System.out.println("Teaching Staff: "+ teaching);
    System.out.println("Non-Teaching Staff: "+ nonstaff);
    System.out.println("Student: "+ student);
  }
}
```

```
2000
30000
```

```
----College Details----
Teaching Staff: 1334
Non-Teaching Staff: 666
Student: 28000
```



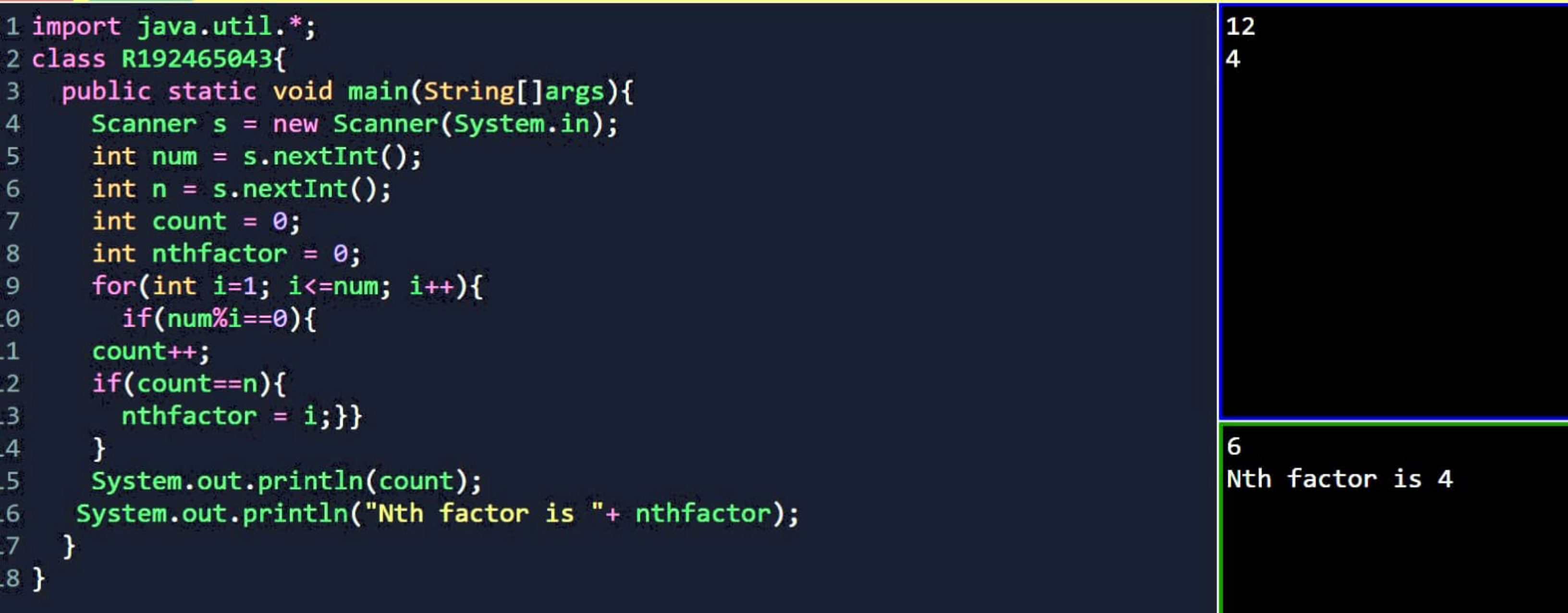
```
import java.util.*;
public class R192465043 {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        int number = scanner.nextInt();
        String numStr = String.valueOf(Math.abs(number));
        Set<String> permutations = new TreeSet<>();
        generatePermutations("", numStr, permutations);for (String perm : permu
            if (number < 0) {
                System.out.println("-" + perm);
            } else {System.out.println(perm);}}}
    public static void generatePermutations(String prefix, String remaining, Se
        int n = remaining.length();
        if (n == 0) {
            permutations.add(prefix);
        } else {for (int i = 0; i < n; i++) {
                generatePermutations(
                    prefix + remaining.charAt(i),
                    remaining.substring(0, i) + remaining.substring(i + 1, n),
                    permutations
```



```java
import java.util.ArrayList;
import java.util.List;
import java.util.Scanner;
public class R192465043 {public static void main(String[] args) {
Scanner scanner = new Scanner(System.in);int lowerRange = scanner.nextInt();
int upperRange = scanner.nextInt();List<Integer> result = new ArrayList<>();
 int start = Math.min(lowerRange, upperRange);int end = Math.max(lowerRange, up
 for (int i = start; i <= end; i++) {if (isPerfectSquare(i) && sumOfDigits(i) <
                result.add(i);}} System.out.println(result);}
    public static boolean isPerfectSquare(int num) {
        if (num < 0) {
            return false;}
        int sqrt = (int) Math.sqrt(num);
        return sqrt * sqrt == num;}
    public static int sumOfDigits(int num) {
        num = Math.abs(num);
        int sum = 0;
        while (num > 0) {
            sum += num % 10;
            num /= 10;}
        return sum;
    }
```

```
5
15
```

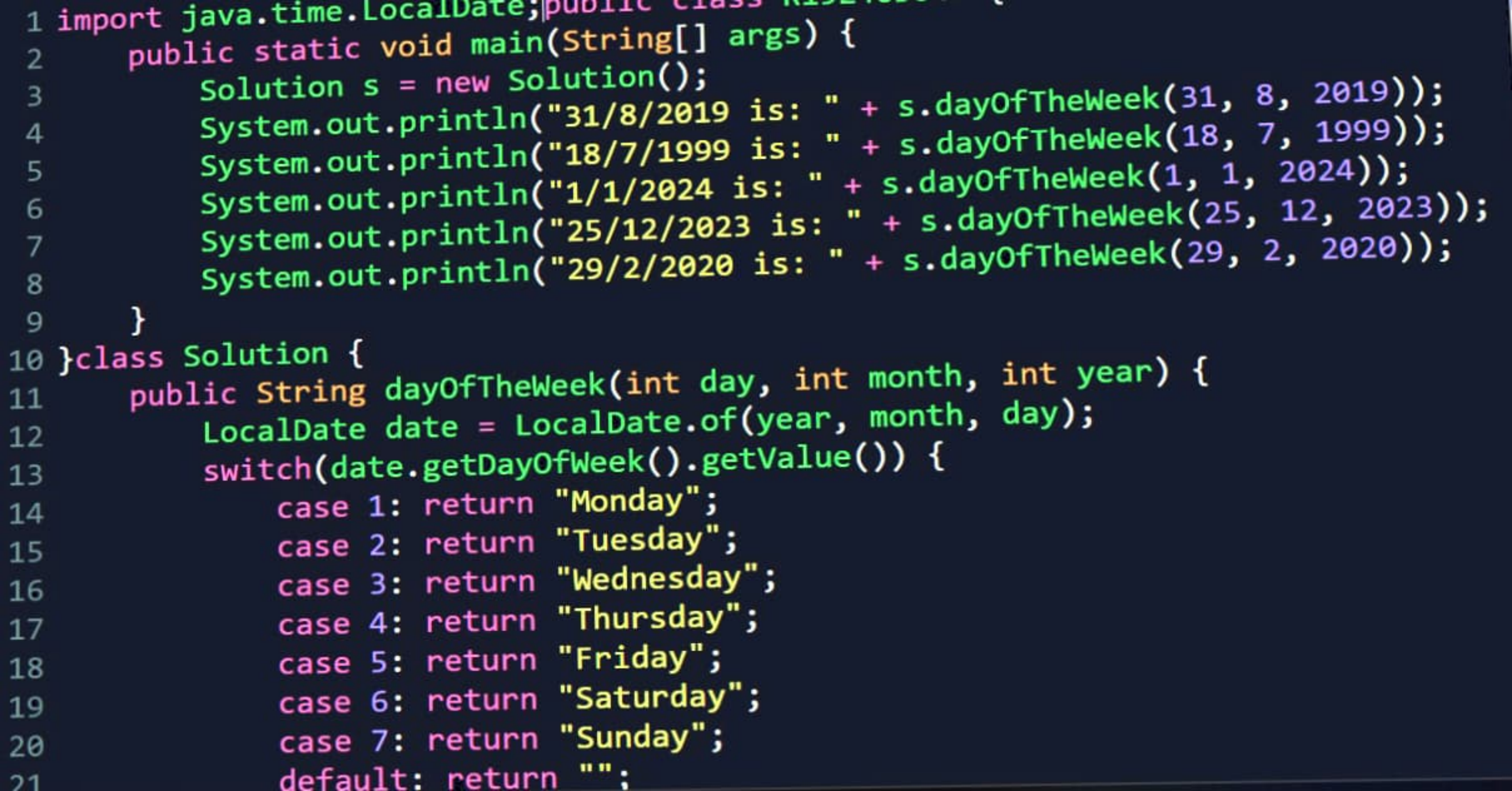
```
[9]
```



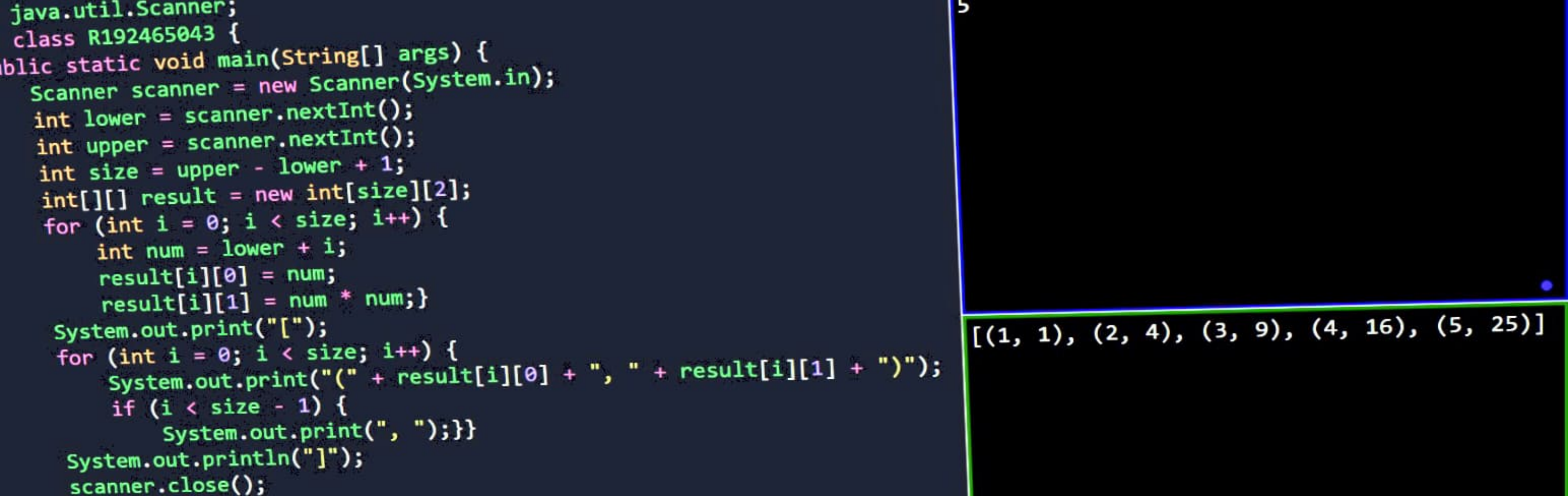
```java
import java.util.*;
class R192465043{
  public static void main(String[]args){
    Scanner s = new Scanner(System.in);
    int num = s.nextInt();
    int n = s.nextInt();
    int count = 0;
    int nthfactor = 0;
    for(int i=1; i<=num; i++){
      if(num%i==0){
    count++;
    if(count==n){
      nthfactor = i;}}
    }
    System.out.println(count);
   System.out.println("Nth factor is "+ nthfactor);
  }
}
```

```
12
4
```

```
6
Nth factor is 4
```



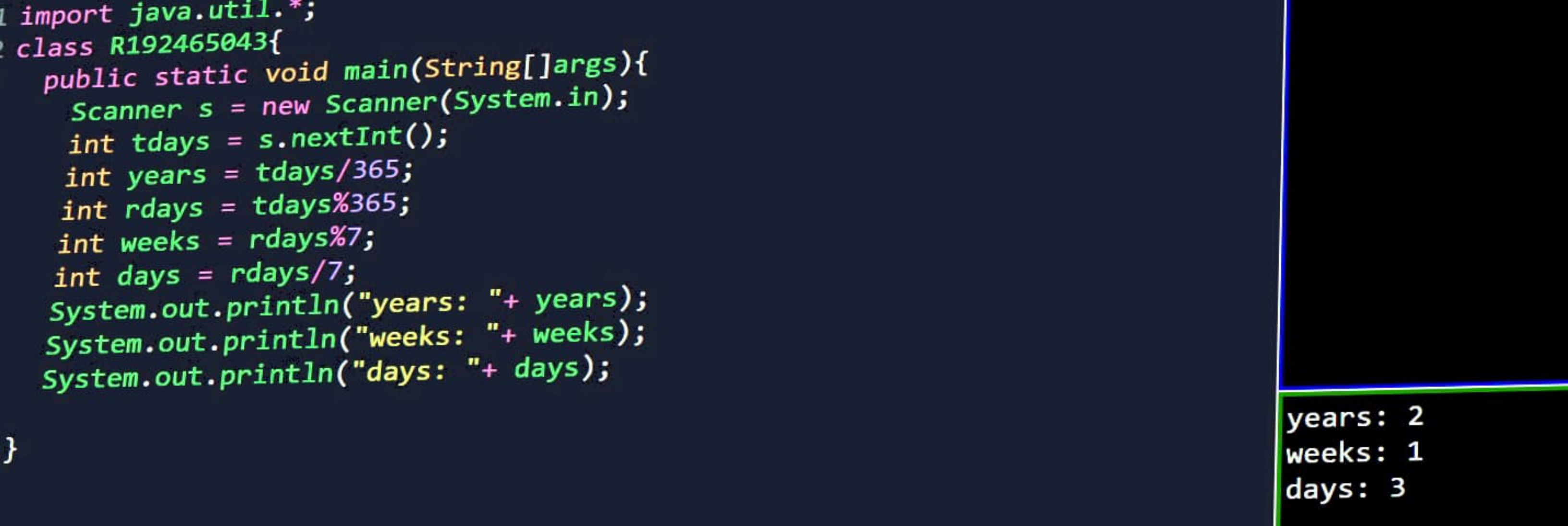
```java
import java.time.LocalDate;public class [illegible] {
    public static void main(String[] args) {
        Solution s = new Solution();
        System.out.println("31/8/2019 is: " + s.dayOfTheWeek(31, 8, 2019));
        System.out.println("18/7/1999 is: " + s.dayOfTheWeek(18, 7, 1999));
        System.out.println("1/1/2024 is: " + s.dayOfTheWeek(1, 1, 2024));
        System.out.println("25/12/2023 is: " + s.dayOfTheWeek(25, 12, 2023));
        System.out.println("29/2/2020 is: " + s.dayOfTheWeek(29, 2, 2020));
    }
}class Solution {
    public String dayOfTheWeek(int day, int month, int year) {
        LocalDate date = LocalDate.of(year, month, day);
        switch(date.getDayOfWeek().getValue()) {
            case 1: return "Monday";
            case 2: return "Tuesday";
            case 3: return "Wednesday";
            case 4: return "Thursday";
            case 5: return "Friday";
            case 6: return "Saturday";
            case 7: return "Sunday";
            default: return "";
```



```
java.util.Scanner;
 class R192465043 {
blic static void main(String[] args) {
  Scanner scanner = new Scanner(System.in);
  int lower = scanner.nextInt();
  int upper = scanner.nextInt();
  int size = upper - lower + 1;
  int[][] result = new int[size][2];
  for (int i = 0; i < size; i++) {
       int num = lower + i;
       result[i][0] = num;
       result[i][1] = num * num;}
   System.out.print("[");
   for (int i = 0; i < size; i++) {
       System.out.print("(" + result[i][0] + ", " + result[i][1] + ")");
       if (i < size - 1) {
           System.out.print(", ");}}
   System.out.println("]");
   scanner.close();
```

```
5
```

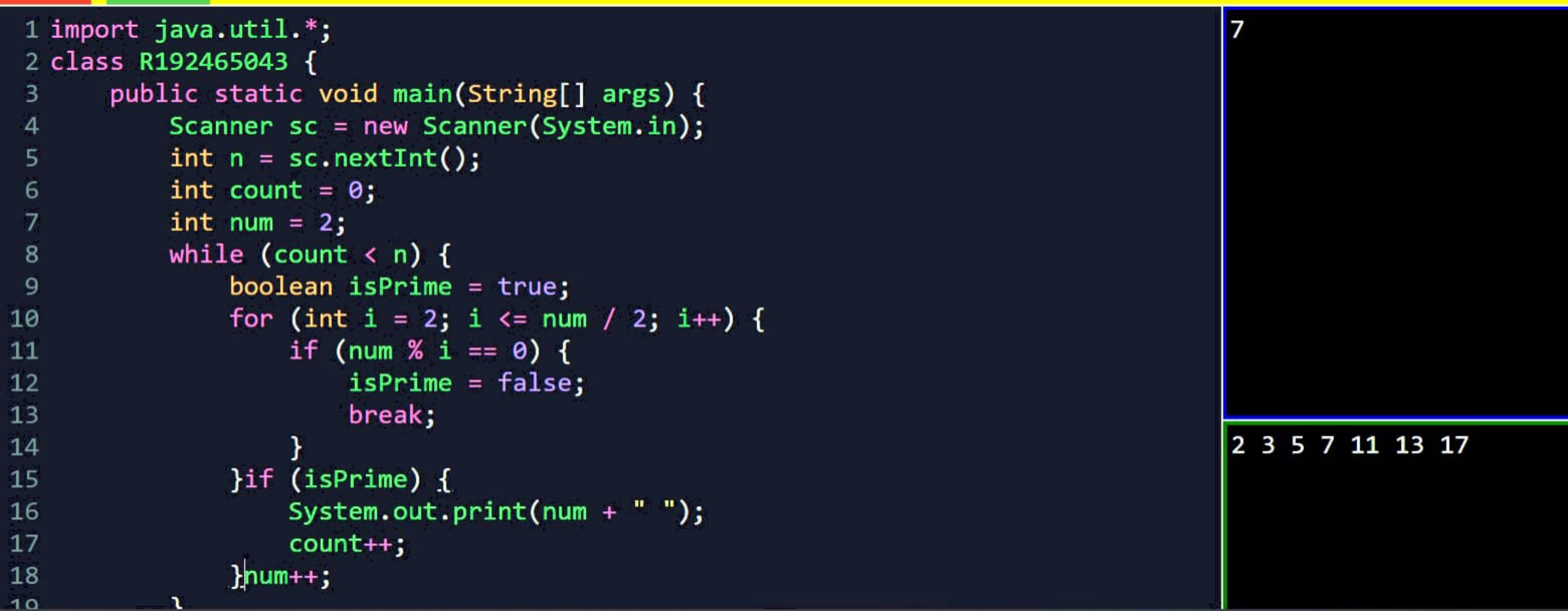
```
[(1, 1), (2, 4), (3, 9), (4, 16), (5, 25)]
```



```java
import java.util.*;
class R192465043{
  public static void main(String[]args){
    Scanner s = new Scanner(System.in);
    int tdays = s.nextInt();
    int years = tdays/365;
    int rdays = tdays%365;
    int weeks = rdays%7;
    int days = rdays/7;
    System.out.println("years: "+ years);
    System.out.println("weeks: "+ weeks);
    System.out.println("days: "+ days);

}
```

```
years: 2
weeks: 1
days: 3
```



```java
import java.util.*;
class R192465043 {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        int n = sc.nextInt();
        int count = 0;
        int num = 2;
        while (count < n) {
            boolean isPrime = true;
            for (int i = 2; i <= num / 2; i++) {
                if (num % i == 0) {
                    isPrime = false;
                    break;
                }
            }if (isPrime) {
                System.out.print(num + " ");
                count++;
            }num++;
        }
```

```
7
```

```
2 3 5 7 11 13 17
```