

Stamford University Bangladesh

Spring 2022
Lab Assignment

CSI 234: Advanced Programming Sessional
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Task 1

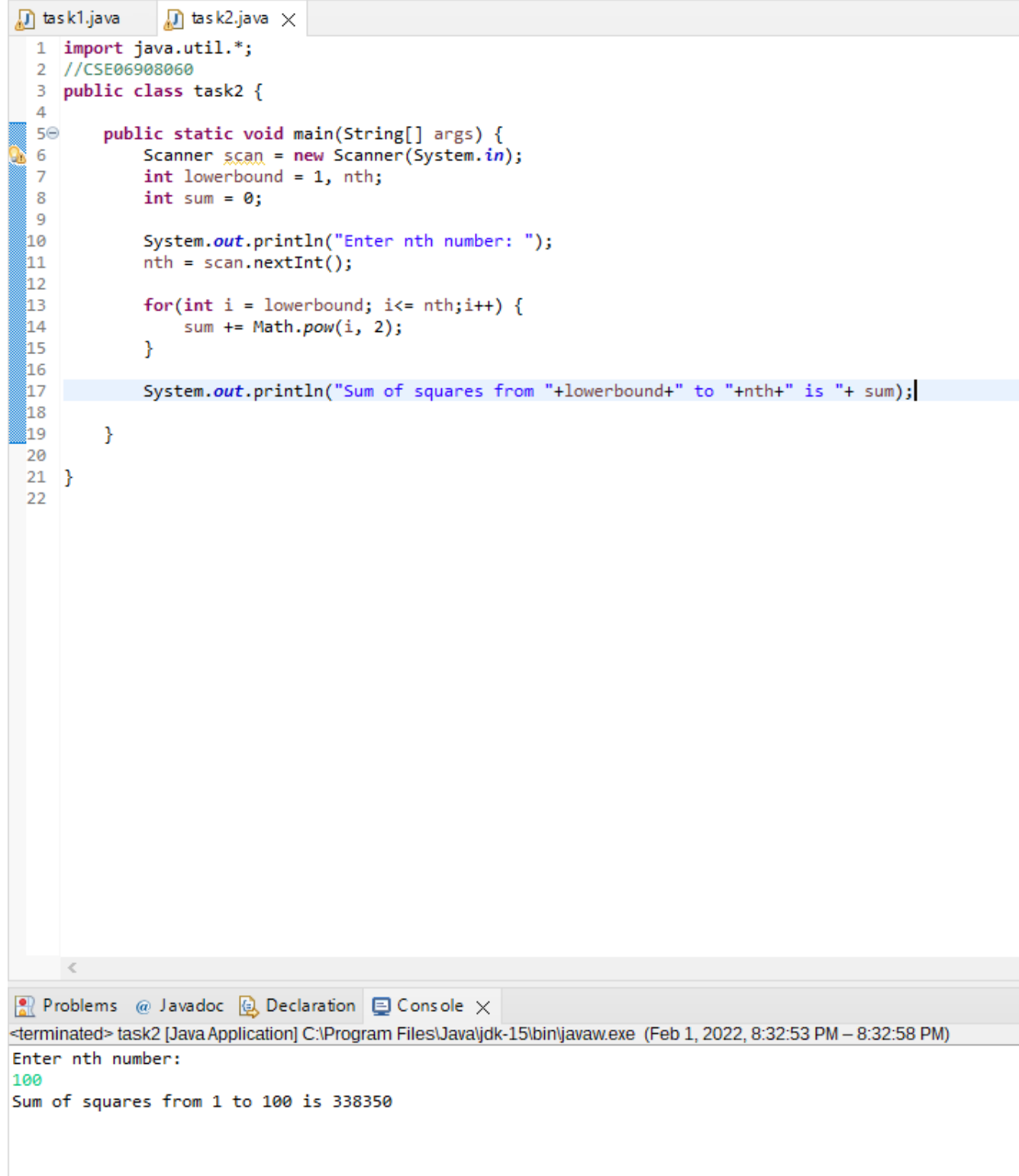
```
task1.java X
1 import java.util.*;
2 //CSE 069 08060
3 public class task1 {
4
5     public static int nthSum(int low,int up) {
6         int sum =0;
7         do {
8             sum += low;
9             low++;
10        }while(low <= up);
11        return sum;
12    }
13    public static float getAvg(float n1,float n2) {
14        float sum = 0,avg;
15        float[] arr = {n1,n2};
16        int i =0;
17        while(i != arr.length) {
18            sum += arr[i];
19            i++;
20        }
21        avg = sum/2;
22        return avg;
23    }
24    public static void main(String[] args) {
25        int lowerbound = 1, upperbound = 100;
26        int sum = nthSum(lowerbound,upperbound);
27        float avg = getAvg(lowerbound,upperbound);
28
29        System.out.println("The Sum of "+lowerbound+" to "+upperbound+" is "+sum);
30        System.out.println("The average is: "+avg);
31
32    }
33
34 }
35
```

Problems @ Javadoc Declaration Console X

<terminated> task1 (1) [Java Application] C:\Program Files\Java\jdk-15\bin\javaw.exe (Feb 1, 2022, 8:20:39 PM – 8:20:40 PM)

The Sum of 1 to 100 is 5050
The average is: 50.5

Task 2



```
task1.java task2.java X
1 import java.util.*;
2 //CSE06908060
3 public class task2 {
4
5     public static void main(String[] args) {
6         Scanner scan = new Scanner(System.in);
7         int lowerbound = 1, nth;
8         int sum = 0;
9
10        System.out.println("Enter nth number: ");
11        nth = scan.nextInt();
12
13        for(int i = lowerbound; i<= nth;i++) {
14            sum += Math.pow(i, 2);
15        }
16
17        System.out.println("Sum of squares from "+lowerbound+" to "+nth+" is "+ sum);
18    }
19 }
20
21 }
22
```

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<terminated> task2 [Java Application] C:\Program Files\Java\jdk-15\bin\javaw.exe (Feb 1, 2022, 8:32:53 PM – 8:32:58 PM)

Enter nth number:
100
Sum of squares from 1 to 100 is 338350

Task 3

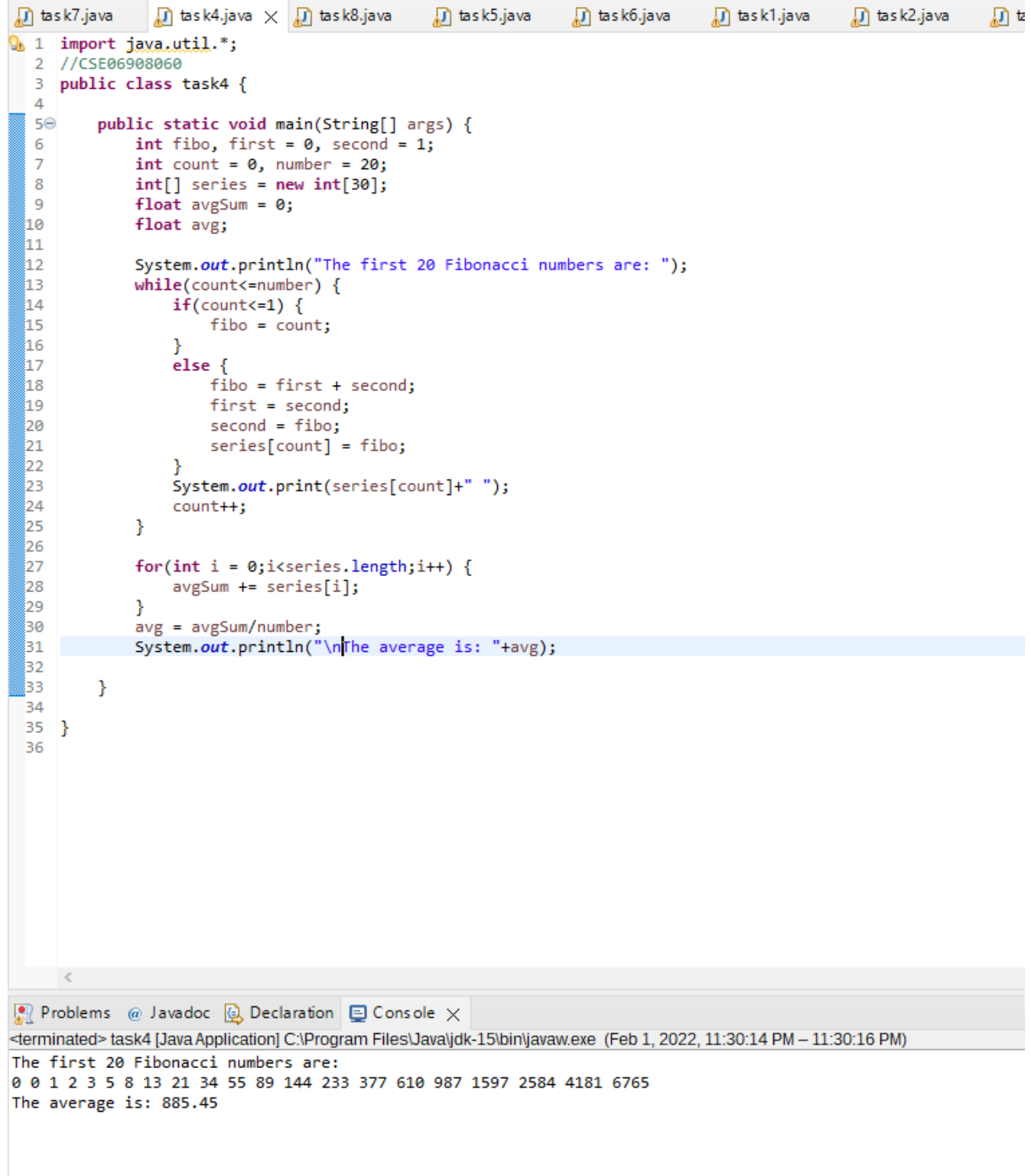
```
task1.java task2.java *task3.java X
1 import java.util.*;
2 //CSE06908060
3 public class task3 {
4
5     public static void main(String[] args) {
6         int lowerbound = 1, upperbound = 10;
7         int product = 1;
8
9         for(int i = lowerbound; i <= upperbound; i++) {
10             product *= i;
11         }
12         System.out.println("Product of " + lowerbound + " to " + upperbound + " is " + product);
13     }
14 }
15 }
16 }
```

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<terminated> task3 [Java Application] C:\Program Files\Java\jdk-15\bin\javaw.exe (Feb 1, 2022, 8:40:25 PM – 8:40:26 PM)

Product of 1 to 10 is 3628800

Task 4

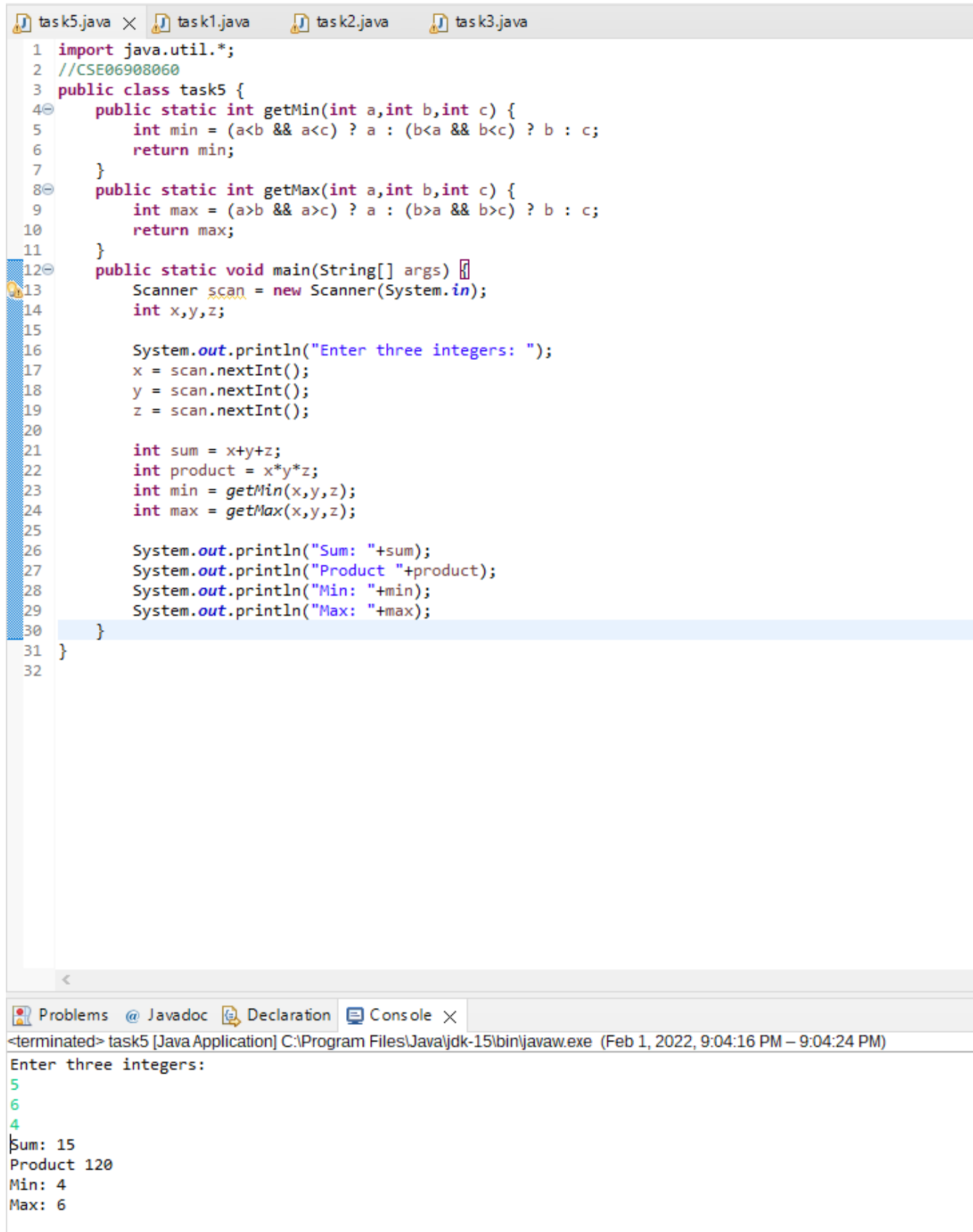


```
task7.java task4.java x task8.java task5.java task6.java task1.java task2.java
1 import java.util.*;
2 //CSE06908060
3 public class task4 {
4
5     public static void main(String[] args) {
6         int fibo, first = 0, second = 1;
7         int count = 0, number = 20;
8         int[] series = new int[30];
9         float avgSum = 0;
10        float avg;
11
12        System.out.println("The first 20 Fibonacci numbers are: ");
13        while(count<=number) {
14            if(count<=1) {
15                fibo = count;
16            }
17            else {
18                fibo = first + second;
19                first = second;
20                second = fibo;
21                series[count] = fibo;
22            }
23            System.out.print(series[count]+" ");
24            count++;
25        }
26
27        for(int i = 0; i<series.length; i++) {
28            avgSum += series[i];
29        }
30        avg = avgSum/number;
31        System.out.println("\nThe average is: "+avg);
32
33    }
34
35 }
36
```

<terminated> task4 [Java.Application] C:\Program Files\Java\jdk-15\bin\javaw.exe (Feb 1, 2022, 11:30:14 PM – 11:30:16 PM)

The first 20 Fibonacci numbers are:
0 0 1 2 3 5 8 13 21 34 55 89 144 233 377 610 987 1597 2584 4181 6765
The average is: 885.45

Task 5



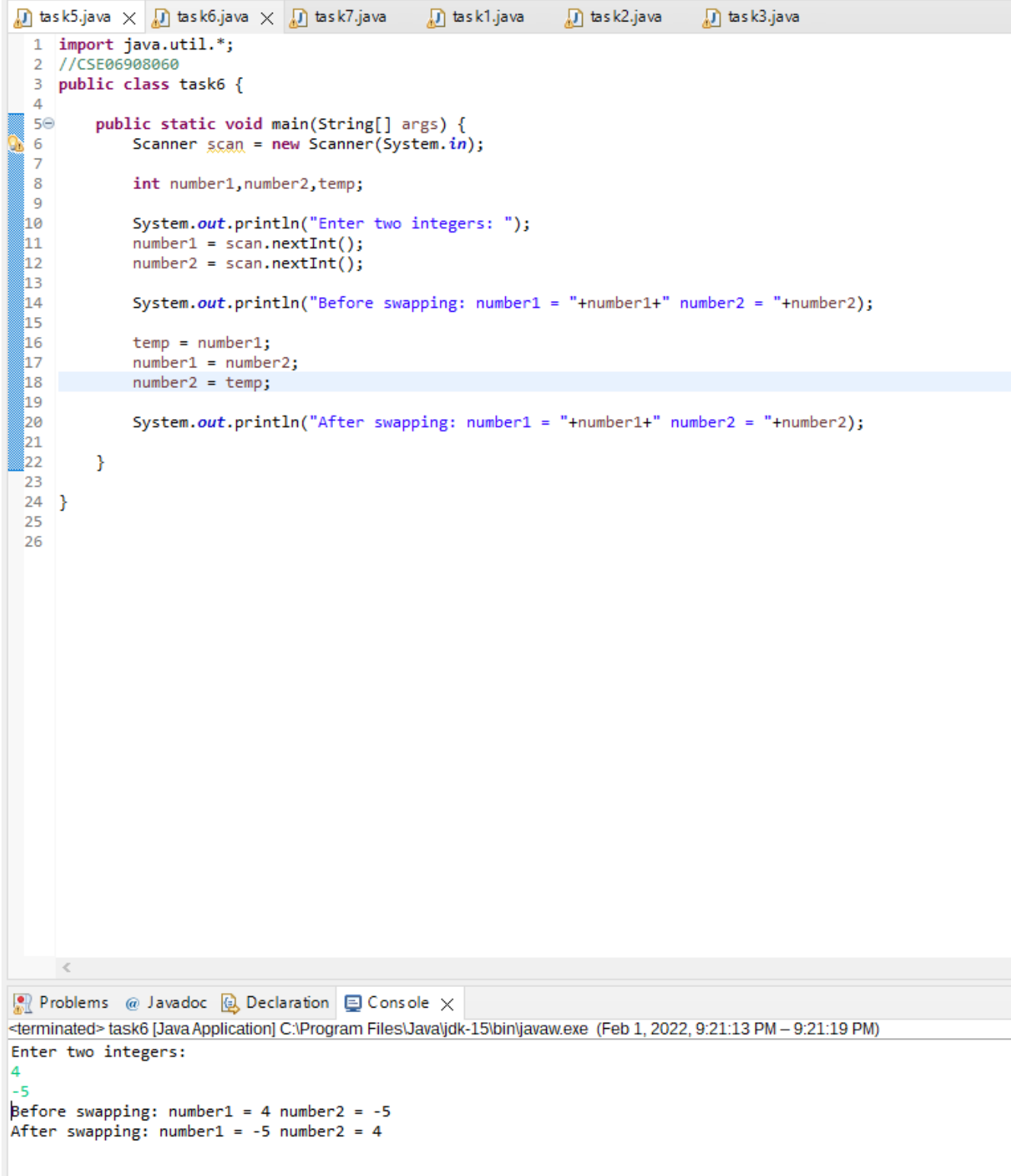
```
task5.java × task1.java task2.java task3.java
1 import java.util.*;
2 //CSE06908060
3 public class task5 {
4     public static int getMin(int a,int b,int c) {
5         int min = (a<b && a<c) ? a : (b<a && b<c) ? b : c;
6         return min;
7     }
8     public static int getMax(int a,int b,int c) {
9         int max = (a>b && a>c) ? a : (b>a && b>c) ? b : c;
10        return max;
11    }
12    public static void main(String[] args) {
13        Scanner scan = new Scanner(System.in);
14        int x,y,z;
15
16        System.out.println("Enter three integers: ");
17        x = scan.nextInt();
18        y = scan.nextInt();
19        z = scan.nextInt();
20
21        int sum = x+y+z;
22        int product = x*y*z;
23        int min = getMin(x,y,z);
24        int max = getMax(x,y,z);
25
26        System.out.println("Sum: "+sum);
27        System.out.println("Product "+product);
28        System.out.println("Min: "+min);
29        System.out.println("Max: "+max);
30    }
31 }
32
```

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<terminated> task5 [Java Application] C:\Program Files\Java\jdk-15\bin\javaw.exe (Feb 1, 2022, 9:04:16 PM – 9:04:24 PM)

Enter three integers:
5
6
4
Sum: 15
Product 120
Min: 4
Max: 6

Task 6



The screenshot shows an IDE with a tab for `task6.java` selected. The code is a Java program that takes two integers as input, prints them before swapping, performs the swap using a temporary variable, and prints them after swapping. The console output at the bottom shows the program execution with input values 4 and -5, and the resulting swapped values -5 and 4.

```
task5.java × task6.java × task7.java task1.java task2.java task3.java
1 import java.util.*;
2 //CSE06908060
3 public class task6 {
4
5     public static void main(String[] args) {
6         Scanner scan = new Scanner(System.in);
7
8         int number1, number2, temp;
9
10        System.out.println("Enter two integers: ");
11        number1 = scan.nextInt();
12        number2 = scan.nextInt();
13
14        System.out.println("Before swapping: number1 = "+number1+" number2 = "+number2);
15
16        temp = number1;
17        number1 = number2;
18        number2 = temp;
19
20        System.out.println("After swapping: number1 = "+number1+" number2 = "+number2);
21    }
22 }
23
24 }
25
26
```

<

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<terminated> task6 [Java Application] C:\Program Files\Java\jdk-15\bin\javaw.exe (Feb 1, 2022, 9:21:13 PM – 9:21:19 PM)

Enter two integers:

4
-5

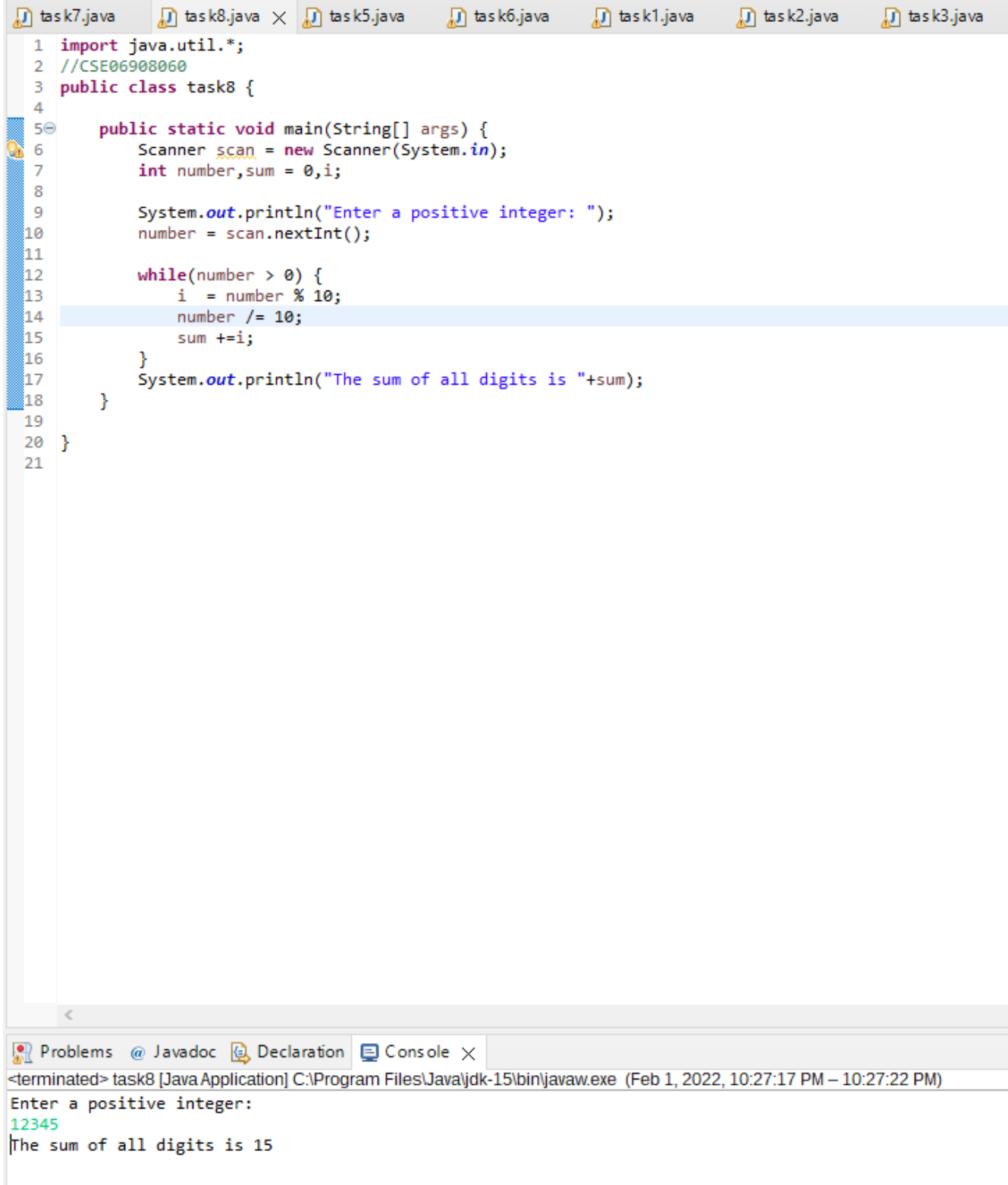
Before swapping: number1 = 4 number2 = -5
After swapping: number1 = -5 number2 = 4

Task 7

```
task5.java task7.java x task6.java task1.java task2.java task3.java
1 import java.util.Scanner;
2 //CSE06908060
3 public class task7 {
4
5     public static void main(String[] args) {
6         Scanner scan = new Scanner(System.in);
7
8         int number1,number2;
9
10        System.out.println("Enter two integers: ");
11        number1 = scan.nextInt();
12        number2 = scan.nextInt();
13
14        System.out.println("Before swapping: number1 = "+number1+" number2 = "+number2);
15
16        number1 = number1 + number2;
17        number2 = number1 - number2;
18        number1 = number1 - number2;
19
20        System.out.println("After swapping: number1 = "+number1+" number2 = "+number2);
21
22    }
23
24 }
25
26
```

```
Problems @ Javadoc Declaration Console x
<terminated> task7 [Java Application] C:\Program Files\Java\jdk-15\bin\javaw.exe (Feb 1, 2022, 9:19:23 PM – 9:19:49 PM)
Enter two integers:
4
-5
Before swapping: number1 = 4 number2 = -5
After swapping: number1 = -5 number2 = 4
```


Task 8



The screenshot shows an IDE with a tab bar at the top containing several files: task7.java, task8.java (selected), task5.java, task6.java, task1.java, task2.java, and task3.java. The main editor displays the code for task8.java. The code imports java.util.* and defines a public class task8 with a main method. The main method uses a Scanner to read an integer, then enters a while loop that calculates the sum of its digits by repeatedly taking the modulo 10 and dividing by 10. The final sum is printed. The bottom of the IDE shows a console window with the program's output.

```
1 import java.util.*;
2 //CSE06908060
3 public class task8 {
4
5     public static void main(String[] args) {
6         Scanner scan = new Scanner(System.in);
7         int number, sum = 0, i;
8
9         System.out.println("Enter a positive integer: ");
10        number = scan.nextInt();
11
12        while(number > 0) {
13            i = number % 10;
14            number /= 10;
15            sum += i;
16        }
17        System.out.println("The sum of all digits is "+sum);
18    }
19 }
20 }
21
```

Problems @ Javadoc Declaration Console X

<terminated> task8 [Java.Application] C:\Program Files\Java\jdk-15\bin\javaw.exe (Feb 1, 2022, 10:27:17 PM – 10:27:22 PM)

Enter a positive integer:
12345
The sum of all digits is 15