

## src/Problem1.java

```
1  /*
2  Name: Hunter Poole
3  Date: 3/26/25
4  HW #: 7
5  Problem #: 1
6  Source Code: Problem1.java
7  Action: Takes the total number of seconds from the user.
8          Calls a method to calculate and display HH:MM:SS
9          for all input > 0. Quits on input == 0.
10 */
11
12 import java.util.Scanner;
13
14 public class Problem1
15 {
16
17     /*
18     Action: Given # of seconds, calculates and prints HH:MM:SS
19     Parameters: int X
20     Returns: void
21     Precondition: Input must be > 0.
22     */
23
24     static void TimeCalculator(int X)
25     {
26         int Hours, Minutes, Seconds;
27
28         if (X > 0)
29         {
30             Hours = X / 3600;
31             Minutes = (X % 3600) / 60;
32             Seconds = (X % 3600) % 60;
33
34             System.out.printf("%d:%02d:%02d\n\n", Hours, Minutes, Seconds);
35         }
36     }
37
38     public static void main(String[] args)
39     {
40         int TotalSeconds;
41
42         Scanner Input = new Scanner(System.in);
43
44         do
45         {
46             System.out.print("Enter Total Seconds --> ");
47             TotalSeconds = Input.nextInt();
```

```
48
49     TimeCalculator(TotalSeconds);
50     } while (TotalSeconds != 0);
51 }
52 }
53
54 /*
55 Enter Total Seconds --> 3605
56 1:00:05
57
58 Enter Total Seconds --> 7458
59 2:04:18
60
61 Enter Total Seconds --> 350
62 0:05:50
63
64 Enter Total Seconds --> -40
65 Enter Total Seconds --> 0
66 */
```

**Hunter Poole**  
**CSCI 155 HW7, Problem 2**

1. Program will have user enter an integer between 1 and 100, anything else will cause the loop and program to quit. This integer is first tested to see if it is an odd or even number; here an appropriate message is displayed, displayed only in the main function. Then the sum of all the numbers up to and including the entered number is calculated and displayed. So if the user enters the number 4, the sum of numbers from 1 to 4 would yield 10. This program needs to call two separate methods, one to determine if number is odd or even, and the other to calculate the sum of the numbers. Both methods will have one parameter and both should return something back, which is the answer the main will deal with. Remember to design your functions so that they are logically coherent and follow the guidelines given in class and examples.

Three Step Analysis:

- A. Take user input as int. Loop while between 1-100.
  - a. Call method1 to determine if the entered number is odd or even.
    - i. Return result to main
- B. Main outputs if input int is odd or even
  - a. Call method2 to calculate the sum of all integers up to and including the entered integer
    - i. Return result to main
- C. Main outputs sum of numbers
- D. Quits if input is not 1 - 100.

INPUT	OUTPUT	EQUATIONS
Integer	Integer "is odd" // Integer "is even"	<pre>if (Number &gt;= 1 &amp;&amp; Number &lt;= 100)   while (Number &gt;= 100 &amp;&amp; Number &lt;= 100)     [code, etc]     if (Number &lt; 1    Number &gt; 100)       write "ERROR"     end if   end while else   write "ERROR" end if-else</pre>
	Sum of integers up to and including entered integer	<pre>if ((N / 2) == 0)   return " is even"</pre>
	"ERROR"	<pre>write (Number + OddOrEven)</pre>
		$\text{Sum} = (N * (1 + N)) / 2$

- E. Limits / Constraints:
  - a. Must use methods for all math. (Method for OddOrEven and method for SumOfInts)
  - b. Only handles integers 1-100. Quits on anything else

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**CSCI 155 HW7, Problem 2**

**OddOrEven** (int N)

```
    if (N % 2 == 0)
        return " is even"
    else
        return " is odd"
    end if-else
```

**end OddOrEven**

**SumOfInts** (int N)

```
    Sum = (N * (1 + N)) / 2
    return Sum
```

**end SumOfInts**

**Main**

```
write "Enter an integer 1 - 100 --> "
read Number

if (Number >= 1 && Number <= 100)
    while (Number >= 100 && Number <= 100)

        write (Number + OddOrEven(Number))
        write "Sum of integers 1 - ", Number, " is: ", SumOfInts(Number)

        write "Enter an integer 1 - 100 --> "
        read Number

        if (Number < 1 || Number > 100)
            write "ERROR: Must enter an integer 1 - 100"
        end if
    end while
else
    write "ERROR: Must enter an integer 1 - 100"
end if-else
```

## src/Problem2.java

```
1  /*
2  Name: Hunter Poole
3  Date: 3/26/25
4  HW #: 7
5  Problem #: 2
6  Source Code: Problem2.java
7  Action: Given an integer 1 - 100, determines if the integer
8           is odd or even via a method that returns to main.
9           Determines sum of integers of 1 - [Input] in the range
10          1 - 100, inclusive, via a method that returns to main.
11          Outputs result. Continues in a loop. Any input outside
12          of 1 - 100 will display an error and exit.
13  */
14
15  import java.util.Scanner;
16
17  public class Problem2
18  {
19
20      /*
21      Action: Determines if a number is odd or even
22      Parameters: int N
23      Returns: String " is even" || " is odd"
24      Precondition: Input must be an integer
25      */
26
27      static String OddOrEven (int N)
28      {
29          if (N % 2 == 0)
30          {
31              return " is even";
32          }
33          else
34          {
35              return " is odd";
36          }
37      }
38
39      /*
40      Action: Computes the sum of all integers up to and including
41             input integer, for starting integer 1
42      Parameters: int N
43      Returns: Sum of all integers from 1 to input integer, inclusive.
44      Precondition: Input must be an integer. Starting range must be 1, inclusive.
45      */
46
47      static int SumOfInts (int N)
```

```
48     {
49         int Sum = (N * (1 + N)) / 2;
50         return Sum;
51     }
52     /*******
53     public static void main(String[] args)
54     {
55         int Number;
56
57         Scanner Input = new Scanner(System.in);
58         System.out.print("Enter an integer 1 - 100 --> ");
59         Number = Input.nextInt();
60
61         if (Number >= 1 && Number <= 100)
62         {
63             while (Number >= 1 && Number <= 100)
64             {
65                 System.out.println(Number + OddOrEven(Number));
66                 System.out.printf("%s %d %s %d %n\n", "Sum of integers 1 - ",
Number, "is:", SumOfInts(Number));
67
68                 System.out.print("Enter an integer 1 - 100 --> ");
69                 Number = Input.nextInt();
70
71                 if (Number < 1 || Number > 100)
72                 {
73                     System.out.println("ERROR: Must enter an integer 1 - 100");
74                 }
75             }
76         }
77         else
78         {
79             System.out.println("ERROR: Must enter an integer 1 - 100");
80         }
81     }
82 }
83 }
84
85 /*
86 Enter an integer 1 - 100 --> 4
87 4 is even
88 Sum of integers 1 - 4 is: 10
89
90 Enter an integer 1 - 100 --> 12
91 12 is even
92 Sum of integers 1 - 12 is: 78
93
94 Enter an integer 1 - 100 --> 100
95 100 is even
```

```
96 Sum of integers 1 - 100 is: 5050
97
98 Enter an integer 1 - 100 --> 0           //In while-loop error
99 ERROR: Must enter an integer 1 - 100
100 */
101
102 /*
103 Enter an integer 1 - 100 --> 101         //Before while-loop error
104 ERROR: Must enter an integer 1 - 100
105 */
```