**src/Problem1.java**

```
 1 /*
 2 Name: Hunter Poole
 3 Date: 3/17/25
 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 HW9, 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” | **if** (Number >= 1 && Number <= 100)<br>  **while** (Number >= 100 && Number <= 100)<br>  [code, etc]<br>  **if** (Number < 1 \|\| Number > 100)<br>  **write** “ERROR”<br>  **end if**<br>  **end while**<br>**else**<br>  **write** “ERROR”<br>**end if-else** |
| | Sum of integers up to and including entered integer | **if** ((N / 2) == 0)<br>  **return** “ is even” |
| | “ERROR” | **write** (Number + OddOrEven) |
| | | 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

**Hunter Poole**
**CSCI 155 HW9, 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**

```java
/*
Name: Hunter Poole
Date: 3/17/25
HW #: 7
Problem #: 2
Source Code: Problem2.java
Action: Given an integer 1 - 100, determines if the integer
        is odd or even via a method that returns to main.
        Determines sum of integers of 1 - [Input] in the range
        1 - 100, inclusive, via a method that returns to main.
        Outputs result. Continues in a loop. Any input outside
        of 1 - 100 will display an error and exit.
*/

import java.util.Scanner;

public class Problem2
{

/*
Action: Determines if a number is odd or even
Parameters: int N
Returns: String " is even" || " is odd"
Precondition: Input must be an integer
*/

    static String OddOrEven (int N)
    {
        if (N % 2 == 0)
        {
            return " is even";
        }
        else
        {
            return " is odd";
        }
    }

/*
Action: Computes the sum of all integers up to and including
        input integer, for starting integer 1
Parameters: int N
Returns: Sum of all integers from 1 to input integer, inclusive.
Precondition: Input must be an integer. Starting range must be 1, inclusive.
*/

    static int SumOfInts (int N)
```

```
    {
        int Sum = (N * (1 + N)) / 2;
        return Sum;
    }
//****************************************
    public static void main(String[] args)
    {
        int Number;

        Scanner Input = new Scanner(System.in);
        System.out.print("Enter an integer 1 - 100 --> ");
        Number = Input.nextInt();

        if (Number >= 1 && Number <= 100)
        {
            while (Number >= 1 && Number <= 100)
            {
                System.out.println(Number + OddOrEven(Number));
                System.out.printf("%s %d %s %d %n%n","Sum of integers 1 -",
Number, "is:", SumOfInts(Number));

                System.out.print("Enter an integer 1 - 100 --> ");
                Number = Input.nextInt();

                if (Number < 1 || Number > 100)
                {
                    System.out.println("ERROR: Must enter an integer 1 - 100");
                }
            }
        }
        else
        {
            System.out.println("ERROR: Must enter an integer 1 - 100");
        }

    }
}

/*
Enter an integer 1 - 100 --> 4
4 is even
Sum of integers 1 - 4 is: 10

Enter an integer 1 - 100 --> 12
12 is even
Sum of integers 1 - 12 is: 78

Enter an integer 1 - 100 --> 100
100 is even
```

```
Sum of integers 1 - 100 is: 5050

Enter an integer 1 - 100 --> 0              //In while-loop error
ERROR: Must enter an integer 1 - 100
*/

/*
Enter an integer 1 - 100 --> 101              //Before while-loop error
ERROR: Must enter an integer 1 - 100
*/
```