

```
1 import components.simplereader.SimpleReader;
2
3 /**
4  * Put a short phrase describing the program here.
5  *
6  * @author Put your name here
7  */
8
9 public final class Hailstone4 {
10
11     /**
12      * Private constructor so this utility class cannot be instantiated.
13      */
14     private Hailstone4() {
15     }
16
17     /**
18      * Generates and outputs the Hailstone series starting with the given
19      * integer.
20      *
21      * @param n
22      *         the starting integer
23      * @param out
24      *         the output stream
25      */
26     private static void generateSeries(int n, SimpleWriter out) {
27         int count = 0;
28         int max = n;
29         int x = n;
30         out.print(n + ", ");
31         while (x != 1) {
32             if (x != 1) {
33                 if (x % 2 == 0) { // when even
34                     x /= 2;
35                 } else { // when odd
36                     x = 3 * x + 1;
37                 }
38             }
39             if (x == 1) {
40                 out.println(x);
41             } else {
42                 out.print(x + ", ");
43             }
44         }
45         count++; // length of series
46         if (x > max) {
47             max = x;
48         }
49     }
50     out.println("Length of series: " + count);
51     out.println("The maximum value is: " + max);
52 }
53
54 /**
55  * Main method.
56  *
57  * @param args
58  *         the command line arguments
59  */
60 }
```

```
61     */
62     public static void main(String[] args) {
63         SimpleReader in = new SimpleReader1L();
64         SimpleWriter out = new SimpleWriter1L();
65         /*
66          * Put your main program code here; it may call myMethod as shown
67          */
68         char repeat = 'y';
69         int input;
70
71         while (repeat == 'y') {
72             out.println("Enter a positive number: ");
73
74             input = in.nextInt();
75             generateSeries(input, out);
76
77             out.println(
78                 "Would you like to calculate a new series? If so, please enter y.");
79             repeat = in.read();
80         }
81
82         /*
83          * Close input and output streams
84          */
85         in.close();
86         out.close();
87     }
88 }
89
```