```
 1 /* Sum and Average ArrayList Entries
 2
 3    This program will read integer values from the console
 4    and add the value to an array list until the user inputs
 5    a zero.
 6
 7    After zero is pressed, the program will calculate the
 8    total number of values entered, calculate the average of
 9    the values entered, and will output these values to the
10    console.
11
12    Zachary Stall
13    Program #11, CS 1050, Section 2
14    JGrasp, Custom PC, Windows 10
15
16    Redact - Edit somthing: to edit, revise, or delete content
17    in preparation for publication.
18
19    "A friendship founded on business is better than a business founded
20    on friendship."
21    -John D. Rockefeller (July 1839 - May 1937)
22
23 */
24
25 import java.util.Scanner;
26 import java.util.ArrayList;
27 import java.util.InputMismatchException;
28
29 public class ZacharyStall_2_11 {
30
31    // Establish tools to format average
32    static Toolkit tools = new Toolkit();
33    // Establish console to get numbers from user
34    static Scanner console = new Scanner(System.in);
35
36    public static void main (String [] args) {
37
38
39        int oneNumber;                // To get values from console
40        int total = 0;                // Number of values processed
41        int sum = 0;                  // Sum of all numbers entered
42        boolean error = false;        // To make sure integers are input
43
44        double avgNumbers = 0.0;    // Average of numbers entered
45
46        // The ArrayList to store all numbers
47        ArrayList<Integer> theList = new ArrayList<Integer>();
48
49        // Start program and promtp user
50        System.out.println("This program will store the numbers " +
51                           "that you enter, \nit will print how " +
52                           "many numbers you entered and return " +
53                           "the average.\n To exit the program and " +
54                           "get your results, press 0.");
55
56        // Try/Catch to catch if user puts something other than an
57        // integer into the console. If they do program is terminated
58        try {
59            // Do/while loop, will enter inputs from console to ArrayList
60            // until user enters a '0'. do/while loop also totals the numbers
61            // input
62            do {
63                System.out.print ("Number " + (total + 1) + " Enter:");
64                oneNumber = console.nextInt();
65
66                if (oneNumber != 0) {
67                    theList.add(new Integer(oneNumber));
68                    total++;
```

```java
69                }
70              } while (oneNumber != 0); // End do while
71          } // End Try
72          catch (InputMismatchException e) {
73
74              System.out.println("This Program can only use integer numbers.");
75              System.out.println("Program Exit");
76              System.exit(0);
77          } // End catch
78
79          // Calculates the sum of the ArrayList
80          sum = getSum(theList, total);
81
82          // Checks that there are inputs to average, if not then program
83          // is terminated. If numbers have been entered, average is calculated
84          // and total numbers, sum, and average are printed to console.
85          if(sum == 0) {
86              System.out.println("No numbers to average, program exit.");
87              System.exit(0);
88          }
89          else {
90              avgNumbers = (double)sum / total;
91              System.out.println("Zero Entered, calculating..." + "\n");
92              System.out.println("Total numbers: " + total);
93              System.out.println("Sum of all number: " + sum);
94              System.out.println("Average: " + tools.leftPad(avgNumbers, 0, "##0.00"));
95          }
96
97          System.exit(0);
98      } // End Main
99
100     // Methods
101     // ***************************************************
102     // Ask user for inputs
103     public static int getSum(ArrayList<Integer> list, int N) {
104         int sum = 0;   // var for sum of ArrayList
105
106         for (int i = 0; i < N; i++) {
107             sum += list.get(i);
108             } // End for loop
109
110         return sum;
111     } // End getSum
112 } // End Class
```