

## COS126 Sorting Exercise

- Book Exercise 4.2.20

Write a *linear*-time filter that takes from standard input a sequence of integers that are between 0 and 99 and prints the same set of integers in sorted order on standard output. For example, presented with the input sequence

```
98 2 3 1 0 0 0 3 98 98 2 2 2 0 0 0 2
```

your program should print the output sequence

```
0 0 0 0 0 0 1 2 2 2 2 2 3 3 98 98 98
```

Do not even think about writing code until you have outlined the program and written comments.

Call your program `IntegerSort.java`.

You can either test by making a small text file of integers, or by entering numbers via the keyboard. When you type from the keyboard, you can indicate an end-of-file in Windows Command Prompt by typing `return CTL-z return`. In Mac Terminal an end-of-file is `return CTL-d return`.

If you are stumped, use the comments on the back and fill in the code.

```

/*****
*   Author:
*
*   Program to read in integers between 0 and 99 from standard input
*   and print them out in sorted order.
*
*   Dependencies: StdIn, StdOut
*****/

public class IntegerSort {
    public static void main(String[] args) {
        // Take advantage of fact that they are integers between 0 and 99
        // Set up array for frequency count of values 0 thru 99

        // Loop to process input: don't know how many inputs - must use EOF

        // read input and increment histogram cell

        // loop to go through histogram cells

        // inner loop to print each value correct number of times

        // print out line feed just to be neat

    }
}

```