

Warmup

Due Date:

This assignment is due Friday, January 11 *at the beginning of lecture*.

Purpose:

This laboratory assignment is warmup for the rest of the semester.

This is likely the last laboratory assignment to be focussed solely on static methods. Use this assignment to practice good functional decomposition.

Numbers to Strings

- ⇒ Implement a static `String numberToString(int n)` that converts a integer n between 1 (inclusive) and one billion (exclusive) into a `String`. The `numberToString` method can cover a larger range if you wish. It should take appropriate action if the argument is out of range.

For instance `numberToString(312000789)` should return three hundred twelve million seven hundred eighty-nine.

Carefully think about how to decompose this problem. For instance, if you have a method that can handle the range 1–999, how can you use that method to create another method that handles the range 1–999 999?

Aim to create methods that have well-defined purposes, but which have no more than around twenty lines of code each. Exploit small private static arrays of `Strings` if you can.

- ⇒ Implement a test method that provides *automated* testing of the `numberToString` method. Here, “automated” means that the test method does not require human input. Think carefully about what test cases provide good automated testing.
- ⇒ Determine the total number of ‘w’*s* in the words “one, two, three, . . . , thirty-four million nine hundred ninety-nine thousand nine hundred ninety-eight, thirty-four million nine hundred ninety-nine thousand nine hundred ninety-nine, thirty-five million.”