Translator Assignment #2: Statements

Issued: Tuesday, October 21
Due: Thursday, November 13

Purpose

This assignment asks you to extend your solution to Translator Assignment #1, to interpret and compile a much more realistic programming language.

If you have not completely finished TA1, please stop reading this handout, and continue working on TA1.

Begin, by copying the directory containing your TA1 solution (e.g., `ta1`) into a sibling directory, maybe named `ta2`. Develop your TA2 solution in this new directory.

As before, your translator employs an ad-hoc scanner and a recursive-descent parser. The parser builds a strongly typed parse tree, which is then traversed and processed. A grammar for the extended source language is:

```
pub/ta1/Grammar2
```

Assignment

There are several parts:

- Extend your scanner to recognize the new keywords and operators.
- Extend your parser to recognize the new statements and expressions.

- Extend your evaluator/generator to translate the new constructs.
  - You can represent boolean values as double values (e.g., 1.0 and 0.0);
  - To interpret I/O statements, read from `System.in` (hint: use a JDK `Scanner`) and write to `System.out`.
  - To compile I/O statements, read with `scanf` and write with `printf`.
- Test your solution thoroughly. Add tests to your test suite. The quality of your suite will influence your grade.