CS 565 Out: February 19, 1998
Jens Palsberg Due: February 26, 1998

Homework 5:

Extend the Interpreter

1. In Lecture Note 5, Section 9, there is an interpreter for a subset of Java called MiniJava. The interpreter and the grammar for MiniJava in on the CS 565 webpage in the code/mjava directory. The interpreter is not complete: it does not handle `extends`, constructors, and `super`. Moreover, the interpreter is based on a representation of programs (via a list of `define-record`)'s that is different from what you get by running `jtb` with the `-scheme` option.

Extend the MiniJava interpreter to handle all of MiniJava, and at the same time change the interpreter such that it handles programs that are represented via the `define-record`'s produced by running `jtb` with the `-scheme` option. In outline:

```
jtb -scheme mjava.input.jj   -- produces records.scm,
                             -- SchemeTreeBuilder.java (a visitor),
                             -- and jtb.out.jj.
javacc jtb.out.jj
javac Main.java              -- Change Main.java such that it calls
                             -- SchemeTreeBuilder
```

If the file `Test.java` contains an mjava program, then you can build a syntax tree by:

```
java Main < Test.java > Test.scm
```

The syntax tree will be in the file `Test.scm`.

Now start the Scheme system and load the files

```
recscm.scm    -- is in the parent directory
records.scm
interpreter.scm
Tree.scm
```