CS 565 Out: April 4, 1997
Jens Palsberg Due: April 10, 1997

Homework 10:

Java Programming

Implement the following two algorithms in Java. For each one, submit three testcases together with your solution.

1. Implement the solver from Homework 8.2. Note: part of the problem is to find suitable representations of the constraints.

2. Implement the algorithm from *Efficient Recursive Subtyping*. Use the following grammar:

```
t ::=  top
       bot
       ( t -> t )
       mu u.(t -> t)
       u
```

For a given subtype problem, your solution must output true or false. Here are two examples taken from *Efficient Recursive Subtyping*.

```
mu u.((u -> u) -> bot) <=
mu v.((v -> bot) -> top)

gives true


mu v.(v -> bot) <=
mu u.(u -> top)

gives false
```

Note: part of the problem is to figure out how to translate a type expression into an automaton. Suggestion: use Lex and Yacc. For an example of how to use Lex and Yacc, see the directory `code/lambda` on the CS 565 homepage.