CS 565, Jens Palsberg Apr 11, 2000

Homework 7:
Java Security Checker

A grammar for Java 1.2 in JavaCC notation is on the CS 565 webpage. The goal of the homework is to write in Java a tool which determines:

1. the largest possible set of types in a Java 1.2 package such that all the types in the set can be viewed as *confined*, and
2. the largest possible set of methods in a Java 1.2 package such that all the methods in the set can be viewed as *anonymous*,

in the sense of Bokowski and Vitek.

Such a tool would be of help to a software engineer whose task is to re-engineer existing Java packages with the goal of achieving better security.

Your main file should be called `CFCheck.java`.

If `javalangpath` is an absolute path to the directory with the source files for the java.lang package, and if `packagepath` is an absolute path to the directory with the source files for a Java package to be analyzed, then

```
java CFCheck javalangpath
             packagepath
             > ConfinedTypes
```

creates the file `ConfinedTypes` with the names of the types described in (1). Moreover, there should be a command-line option `-anon` such that

```
java CFCheck javalangpath
             packagepath
             -anon
             > AnonymousMethods
```

creates the file `AnonymousMethods` with the headers of the methods described in (2), plus the names of the classes to which the methods belong.

The first kind of output should be of a form like:

```
Itr
ListItr
ArrayList
UnmodifiableMap
...
```

The second kind of output should be of a form like:

```
Vector:  capacity()
Vector:  size()
Vector:  elements()
TreeSet:  iterator()
TreeSet:  size()
Date:  setMonth(int month)
Date:  setDate(int date)
...
```

Notice that the modifiers and the return types are *not* part of the output. Grammars in JavaCC notation for these forms of output are on the CS 565 webpage in the javasubsets directory. Your output must be parseable by the parsers generated from these grammars.