CS 565, Jens Palsberg Nov 23, 1999

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