CS 565 Out: October 9, 1996
Jens Palsberg Due: October 16, 1996

Homework 7:

Inheritance

For this problem you will modify the interpreter that was presented in Lecture note 7. This interpreter is in `classes.scm` on the CS 565 homepage.

1. Extend the language with inheritance. Use the following syntax:

⟨class-decl⟩::= `derive class` ⟨identifier⟩ `from` ⟨identifier⟩⟨method-decl⟩*

Terminology: when writing `derive class B from A ...`, then `A` is said to be the *superclass* of `B`, and `B` is said to be a *subclass* of `A`. In C++ terminology, `A` is the *base* class, and `B` is the *derived* class.

The derived class is like its base class, except that the methods declared in the derived class may override those declared in the base class.

Examples:

```
class c(i)
  var x
  method get() self<-goget();
  method goget() x;
  init { x = i };

derive class d from c
  method goget() 2*x

var o p
{o new c(5);
 p new d(5);
 print o<-get();
 print p<-get()}
```

would print `5 10 #t`.

```
class c(i)
  var x
  method get() self<-goget();
  method goget() x;
  method myget() self<-goget()
  init { x = i };

derive class d from c
  method goget() 2*x

derive class e from d
  method goget() 3*x
  method get() self<-myget()

var o p q
 {o new c(5);
  p new d(5);
  q new e(5);
  print o<-get();
  print p<-get();
  print q<-get()}
```

would print `5 10 15 #t`.