

Due: Friday, 18 March 2005

General instructions about homework. Use the command `'submit hw5'` to submit your homework. We will not accept homework in any other form.

1. Fill in the skeleton in `~cs164/hw/hw5/unify.y` to get a program that reads in a number of type equations, and produces their solution. The solution takes the form of a list of all the bound type variables with its binding, where any variables remaining in the binding are themselves unbound. Express type variables in ML notation (e.g., `'a`). The possible types, in order of increasing precedence, are

- Primitive types `int` and `bool`.
- Type variables `'x` where x is a string of letters and digits.
- List types `T list`, where T is a type expression.
- Function types $T_1 \rightarrow T_2$, where T_1 and T_2 are type expressions (right associative).
- (T) , where T is a type expression.

Type equations have the form

$$T_1 = T_2 ;$$

where T_1 and T_2 are type expressions.

For example, given input file

```
'a list = 'c ;  
'c -> 'd = 'e list -> 'b ;  
'e -> 'e = int -> 'f
```

Your program might print something like

```
'a = int  
'c = int list  
'e = int  
'f = int  
'd = 'b
```