CSE 3302 Lab Assignment 3

Due July 30, 2014

Goal:

Understanding of Scheme and elementary functional programming concepts.

Requirements:

1. Write a Scheme function to implement a general `overlap` function. The format of an application of the `overlap` function will be:

   (`overlap` *pattern-lat text-lat*)

   where *pattern-lat* and *text-lat* are unnested lists whose atoms are of type `symbol`.

   `overlap` searches *text-lat* for occurences of *pattern-lat*. Occurences may overlap. The result will be the *text-lat*, but with a `*` following each occurence.

2. Email your program to `sourabh.bose@mavs.uta.edu` by 12:45 p.m. on July 30.

Getting Started:

1. Don't be concerned about efficiency.

2. Some examples:

```
> (overlap '(a b a c) '(a b a c))
'(a b a c *)
> (overlap '(a b a c) '(a a b a b a c a c a b a c d e g a b a b a c a c))
'(a a b a b a c * a c a b a c * d e g a b a b a c * a c)
> (overlap '(a a a b) '(c c c c a a b a a a a a a a b a a a a a a a b a a))
'(c c c c a a b a a a a a a a b * a a a a a a a b * a a)
> (overlap '(a b r a c a d a b r a) '(a b r a b r a c a d a b r a c a b r a c a))
'(a b r a b r a c a d a b r a * c a b r a c a)
> (overlap '(a b r a c a d a b r a) '(a b r a b r a c a d a b r a c a d a b r a c a d
    a b r a c a b r a c a))
'(a b r a b r a c a d a b r a * c a d a b r a * c a d a b r a * c a b r a c a)
> (overlap '(a b a c d a b a c e) '(a b a b a c d a b a c d a b a c e g g))
'(a b a b a c d a b a c d a b a c e * g g)
> (overlap '(a a a) '(a a a a a a ))
'(a a a * a * a * a *)
```

3. The Ten Commandments and The Five Rules from *The Little Schemer* will lead you to many days of happiness.

4. `set!` will lead to nights of suffering (and loss of points).