CS 4100, Fall 2013
Lisp Programming
May 15, 2015

The purpose of this assignment is to get some hands-on experience using Lisp.

At one of the computers in the lab booted into OSX, you should be able to type "clisp" at the command line. If you have problems, check with Julie or me. To get out of clisp type "ctrl d", to backspace you can type "ctrl h".

Please write code for the following problems. This needs to be your own work: you have the tools to do it. Any resources used must be cited. You should upload a text file to the homework submission system that shows your programs and the results of running them.

1. Write "Hello World" using the `print` function.

2. Write a function that computes one root of a quadratic equation using the quadratic formula. In other words use $\dfrac{-b+\sqrt{b^2-4ac}}{2a}$. Test your function on at least:
```
(a b c)  =  (1 2 1);
(a b c)  =  (1 4 4);
(a b c)  =  (1 -4 4).
```

3. Consider the list:
```
((name (light bulb)) (mfgr ge) (watts 60) (id 357)
(quantity 6))
```
write a function to access the `watts` using `car` and `cdr`.

4. Write the recursive `append` function we discussed in class and test it and `cons` on pieces of your favorite quotation (text).

5. Write a recursive function that computes the length of a list.
For example, `(mylen '(1 2 3 4))` should output 4.
And `(mylen '(blue green yellow brown red))` should output 5.

6. Write a recursive function to write a list in reverse order.
For example, `(myrev '(1 2 3 4))` should output `(4 3 2 1)`.
(Hint: there is a built-in function `list(arg)` that turns arg into a list.)