

# CSCI 3210 Program 1

Program Assigned: September 4, 2008  
Program Due: September 9, 2008 (midnight)

1. ~~[DO NOT DO THIS]~~ Students need to complete Cultural Survey at:  
<http://zeus.csci.unt.edu/surveys.jsp>

2. Write combinations of FIRSTs and RESTs (or CARs and CDRs) to pull the X out of the following expressions.

For example (first (rest (first (rest '(a (b X) (d e)))))) => X

(bill bob jane X fred carl)  
(bill (bob jane) (X fred) carl)  
(bill (88 (jane (33 X fred ))) hillary)  
(bill hillary chelsea (monica (ken X)))

3. Write corresponding lisp functions for the following arithmetic functions:

$1 + 2 * 3$

$(1 + 2) * 3$

$2 * 4 + (6 - 8)$

$5 + (- 3 + 4)$

-----  
 $6 + 2/5$

4. Define a function average with two arguments which returns the average value.

Example: (average 3 7) returns 5, (average 1 1) returns 1

5. Define a function that returns 'Waldo' if it is anywhere in the list.

Example: (where-is '(Ralph Sam Waldo)) returns Waldo

6. Define a function that returns:

- the word 'baby' if the age of the person is less than 2
- the word 'child' if the age of the person is less than 18
- the word 'adult' if the age of the person is less than 120
- the word 'dead' if the age of the person is more than 120

### **Submitting programs for this course:**

The first three lines of any LISP program should be comments containing your name, and an identification of assignment being solved. For example:

```
;;; Henry M. Walker  
;;; Assignment First
```

Also, a comment is needed for every procedure, stating in English what that procedure is supposed to do.

1. You will need to submit a LISTING of your program(s)
2. Use the University's "project" program to turn in your programs. We will create a project name called "**first**" for you to submit your programs. The "project" program is ONLY AVAILABLE ON THE CSP machines. You will need to obtain an account number from Matt Duncan (on the fifth floor). Instructions for using "project" can be obtained by typing "man project" when you are on one of the unix systems.