Homework, Week 6, part B

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September 29, 2016

Part 1 In your CLISP environment, evaluate `(dribble "arithmetic.txt")` and do some (or all) of the homework assignments for Week 0. When you finish, evaluate `(dribble)`. You will find that a file named "arithmetic.txt" has been written to your directory. Open that file and look at it. What is in the file? How does it help you in testing and debugging a program? This part of the homework is NOT optional!

Part 2 I have copied a file below named *trace-test.lisp*. Load this file in your Lisp environment and evaluate `(trace count-em add-em multiply-em)`. Print (to the screen) the variables `num-list` and `alpha-list`. Then, evaluate the functions `(count-em alpha-list)`, `(count-em num-list)`, `(add-em num-list)`, `(multiply-em num-list)`, and finally `(trace)`, `(untrace)`, and `(trace)`. What does `(trace)` do? How does it help you in testing and debugging a program? Can you see how the functions `(count-em)`, `(add-em)`, and `(multiply-em)` work?

```
1  ;; trace-test.lisp
2
3  (setf num-list '(1 2 3 4 5 6 7 8 9))
4
5  (setf alpha-list '(a b c d e f g))
6
7  (defun count-em (l)
8    (cond
9      ((null l) 0)
10     (t (+ 1 (count-em (cdr l))))))
11
12 (defun add-em (l)
13   (cond
14     ((null l) 0)
15     (t (+ (car l) (add-em (cdr l))))))
16
17 (defun multiply-em (l)
18   (cond
19     ((null l) 1)
20     (t (* (car l) (multiply-em (cdr l))))))
```