ICS-365 HW7

\* Due Date – See Class Schedule \*

1. Find definitions of the Scheme functions EVAL and APPLY, and explain

their actions.

Eval() takes a representation of a function in a text format than evaluates it. It’s used when the programmer need to build a function dynamicly at run time then run it. The same function exists in javascript as well.

Apply() applies a procedure to a list of arguments. For example, (apply + (2 6)) => 8.

1. If Scheme were a pure functional language, could it include DISPLAY?

Why or why not?

Scheme cannot be a pure functional language if it includes DISPLAY, because DISPLAY has the side effect of producing output.

1. What does the following Scheme function do?

(define (x lis)

(cond

((null? lis) 0)

((not (list? (car lis)))

(cond

((eq? (car lis) #f) (x (cdr lis)))

(else (+ 1 (x (cdr lis))))))

(else (+ (x (car lis)) (x (cdr lis))))

)

)

x returns the number of non-#f (or non-nill) atoms in the given list.

4- Write a Scheme function that returns the reverse of its simple list parameter

(DEFINE (reverse lis)

(COND

((NULL? lis) '())

(ELSE (APPEND (reverse (CDR lis)) (CONS (CAR lis) '() )))

)

)