CS 408 Programming Languages
Program assignment with LISP

Due Date: 11/13/06

1. A **palindrome** is a list that has the same sequence of elements when read from right to left that it does when read from left to right. Define function palindrome such that it takes a list as its argument and returns a palindrome that is twice as long

- (setf alist '(a b c d))
- (palindrome alist)

(A B C D D C B A) ;; expecting output

2. Define **palindromep**, a predicate that tests its argument to see whether it is a list that has the same sequence of symbols when read from right to left as when it is read from left to right.

> (setf alist '(abccba))
> (setf blist '(a b c a))
> (palindromep alist) ;; expecting output is T
T
> (palindromep blist) ;; expecting output is NIL
NIL

3. Define **divisible_by_n** , a predicate that determine whether an integer is divisible by n.

> (devisible_by_n 12 3) ;; expecting output is T
T
> (divisible_by_n 10 3) ;; expecting output is NIL
NIL

4. Define **squash**, a procedure that takes an expression as its argument and returns a non-nested list of all atoms found in the expression.

> (squash '((a) (b (c) (d)) (f (g (h i))) j)) ;; expected output is
(A B C D E F G H I J)

5. Define **count_atomes**, a procedure that counts the atoms in a given expression.

> (count_atomes '((a) (b (c) (d)) (f (g (h i))) j));; expected output is
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