LISP Programming Standards

*Last update: 10/16/2018*

1. Indentation.

LISP code is very difficult to read without good indentation.

1.1 COND function

* Each condition pair should begin in the same column.
* Place a space after the left parenthesis and before the right parenthesis marking the pair.

(COND ( cond1 res1 )

( cond2 res2 )

…

( condN resN )

)

1.2 IF function

* The true and false parts should be in the same column. (Exception: if the entire IF can fit easily on one line, you can place the entire function on a line.

(IF *cond*

*truePart*

*falsePart )*

1.3 defun function

* List the parameters on the same line as the defun. If there are too many to fit on a line, align them in the same column.
* The body of the function should be indented at least 4 spaces.

;;; SETUNION

;;; Parameters:

;;; set1 - a list of items without embedded lists

;;; set2 - a list of items without embedded lists

;;; Purpose:

;;; Returns the union of the two sets. Each entry

;;; from both sets is included; however,

;;; an entry which is in both sets, only appears once.

(defun SETUNION (set1 set2)

(cond ( (NULL set1) set2 )

( (MEMSET (CAR set1) set2 )

(SETUNION (CDR set1) set2) )

( T (CONS (CAR set1)

(SETUNION (CDR set1) set2) ) )

)

)

1.4 Other functions

* If the arguments cannot fit on a line, align the arguments in the same column. In the example for 1.3, notice that the two arguments to CONS were placed in the same column.

2. Function Documentation

* Document each function with one or more sentences describing what it does:
  + Provide "Parameters:" followed by a separate line for each paramter. If there aren't any, show "n/a"
  + Provide "Purpose:" which should describe the functions purpose.
  + Provide "Notes:" which should tell about special cases, important assumptions, andor explain important points about the algorithm
  + See the example for 1.3.

3. Macro Documentation

* Like functions, describe what it does and the arguments.
* Also, document an example and its expansion.