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CTSS LISP NOTICE - Supplement to A.I. Memo No. 67

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SYSTEM UPDATE

The LISP system (command version) has been updated. Bugs corrected include:

1. out of pushdown list in compiled function will not transfer to 77777.

2. with compiler printing turned off by comprint, it is truly off.

3. eompiler won't die with "NOPDL - MARKLIST" complaint.

4. "ERROR54A/" when running compiled program no longer occurs.

5. CSET AND CSETQ have their peoper values.

6. the public versions of PRINT DATA and EDIT DATA have been improved. In particular, the function DEFINELIST has been removed from PRINT; EDIT has had a minor bug in filelistadd corrected, and the functions filelistdelete [l; x; y], and extract [l; n; m] added. The former deletes the functions on the list l, from file n m and writes a new file n EDIT with these changes made. The latter extracts the functions l from the file n DATA and adds them to the file m DATA, updating the disc by writing appreopriate EDIT class files.

UTILITY-FILES

Additional utility functions are available in the public files:

1. CHAIN DATA, (Martin) contains primarily the function chain [l] which allows a lisp function to execute CTSS commands. l is a list of command-argument sublists which will be executed in order (a system glitch limits l to a maximum of 5 command - argument lists).

E.G.

```
chain [(save T
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E.g. chain [(SAVE T) (LISTF PRINT DATA) (RESUME T))] will cause the system to act as if LISTF PRINT DATA had been typed at command level, and something like

12/06/64 PRINT DATA P 3

will be typed out. The value of CMain is NIL.

2. CMWRIT DATA and LPREAD DATA (Hart) contain functions more or less analogous fundamap and readlap described in the LISP 1.5 Manual.

Comwrite [fl; name] (found in the file CMWRIT DATA) causes the functions mentioned in the list fl to be compiled and written on the disc as a file named name *LAP*. They are in a form to be read in by lapread. lap is redefined in CMWRIT DATA, so don't try to use it once this file is read in.

lapread [l] (found in LPREAD DATA) reads in all the files whose first name is in the list l and whose second name is *LAP*. The compiler (but not lap) may be excise'ed before using lapread. Beware of lapreading files which have identical gensym names for functional arguments. To help notice this, the value of lapread is a list of sublists whose elements are the names of the functions in the coresponding *LAP* file, including functional arguments.

3. SET DATA (Hart) containing:

union, intersection, setequal which should be obvious, and also:

makeset [l] forms of list with the same elements as l, except that none occurs more than once.

dif [l; m] form a list of all the elements of l which aren't in m.

symdif [l; m] = append[dif [l; m] ; dif [m; l]]

delete [x; l] = dif [l; x]

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forall

forall [l; p] is a predicate which is true iff p[x] (a functional) is true for each element of l.

forany [l; p] similar to forall except read "any" for "each".

mapl [l; fn]l is maplist including that annoying extra car.

mapend [l; fn] is mapcon using append instead of nconc, and including the extra car.

for [l; fn] is map with the extra car.

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put [x; a; i] puts x on the property list of a under the indicator i. Its value is x.

add [x; a; i] corses x onto the list which is already under the indicator i on the property list of a. If nothing is there, it has the effect of:

put [list[x]; a; i]

The value of add is the new entry under i.

4, SUBLIS DATA (McCarthy) contains an improved (does less copying) sublis. (Advantage is realized only when their functions are compiled.