DATE April 11, 1961

SUBJECT FRAPCORRECTOR 1

TO PDP Distribution List

FROM Adams Associates, Inc.

AREA: 0000-1377
        7500-7777

START: 0000

RESTART: 7777

PURPOSE:

To provide a convenient means of making symbolic changes to a Frap language source tape. The corrections (in a fixed format) are punched on paper tape. The first pass of Frapcorrector reads this tape and stores all information in core memory. During the second pass the Frap language tape is read, corrections applied, and a new Frap input tape is produced.

Three types of correction operations are available; namely, delete, insert, and replace. Each correction statement requires some descriptive information such as number of corrections, addend (same as symbol +n as used Frap), and type of statement.

Corrections will be applied in the order presented and, therefore, they must be ordered by symbol and addend to correspond with the tape to be corrected.

For purposes of comparison in the second pass, only those characters which precede the first Frap delimiter (per line) will be considered to be a symbol. For example: STARTtabJMPspGO. The string of characters "START" are considered to constitute the symbol. In the next example the routine will not find a symbol: tabLACspCOUNT.

The end of the Frap language tape is always considered to be the line "ENDcr". This will always be placed directly after the normal Frap ending symbol (on a new line).

PREPARATION OF CORRECTION TAPES:

All correction statements have the following general format:

where "C" is the control character. It can be any one of the four characters listed below:

    i for insert
    d for delete
    r for replace
    e for end of correction tape

"NN" is the number of corrections (in octal notation) to be applied and its value may range from 01 to 77. In the case of both inserts and replacements the routine will expect to find "NN" correction lines following this control information (and symbol).

"AA" is the addend (in octal notation) which is added to the symbolic address to determine the correct starting point. For example, using the symbol "stop" and an addend of 01, this starting point would be the line following the symbol "stop". The value of the addend may range from 00 to 77.

"SS. . .SS" is the symbol to which the addend is added to determine the proper starting location. If the symbol in the prior correction statement is the same as the symbol to be used in this correction statement, the symbol must be omitted. In this case, instead of the carriage return following the symbol, it will follow the "AA" field.

The correction lines follow directly after the control information just described. Each line may contain any information desired such as symbolic address, operation, and comments, etc. Each line will be treated as a complete entity and its bounds will be determined by the carriage return at the end of the line. Needless to say, correction lines are not used when the control character signifies that this is a delete statement.

The "e" control character signifies the end of the correction tape and, therefore, it is always the last valid character on tape.

EXAMPLE OF A CORRECTION TAPE:

IO1sp00spSTARTcr	Insert on word following
FLIPtab JMPspGOcr	symbol "START"
cr	
cr	carriage returns betw :n
cr	correction statements
cr	are ignored
cr	
DO2sp01spXYZ	delete two lines
cr	starting with XYZ+1
cr	
IO3sp01sp	insert three new lines
tab LACspGOcr	at XYZ+1
tab LIOspGO&1cr	

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XYZA       IDXspXYZcr
cr
cr
RO1sp10sp                              replace one line at
Asp, COUNTERspAcr                      XYZ+ 10$_8$
E                                      End of correction tape
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USE:

      Start at location 0000. Routine will type "FRAPCORRECTOR" and halt. At this point, turn the punch on and load the paper tape reader. Select the correct options as listed in the table below and depress the "continue" button. The computer will halt (at location 0267). Again select the correct sense switch options, load the paper tape reader and depress "continue". A new program tape will now be produced on the paper tape punch and when completed, the computer will halt (at location 0426). If another program tape follows (which is to be merged with the first), select the options and depress "continue". If no more program tapes follow, depress "continue" and the ending sentinel and final leader will be punched. The computer will stop at the final halt in location 7754.

NORMAL HALTS:

LOCATION	REASON	ACTION
0025	beginning	Set SS. 1 and 2
0267	end of first pass	Set SS. 1 and 4
0426	end of program	Set SS. 1, 3 and 4
7754	end of routine	None. (see below)
7642	sense switch 6 on	Set SS. 4 as desired
7664	sense switch 5 on	Set 5 continue. Pass 1
7657	sense switch 5 on	Set 5 continue. Pass 2

ABNORMAL HALTS:

LOCATION	REASON	ACTION
0121	1st character of correction statement NOT e, i, d, or r (Character in last 8 bits of AC).	
0147	No space following number of corrections	If space was left out start at 0150.

7622	Addend to small	Enter correct value into middle two octal positions of 1267 (xx xx) and jump to 7612.

END OF FRAPCORRECTOR:

Prior to the computer's stopping at 7754, one of the two following type-outs will occur:

"ONLY NN
 CORRECTIONS APPLIED"

or

"CORRECTIONS APPLIED".

The first indicates that due to some error in the control statement, all corrections were not applied. The octal number NN indicates the bad statement, but this number may be plus or minus one from the actual statement in error. The second type-out indicates that all corrections have been properly applied.

If FRAPCORRECTOR is to be run again, depress the continue switch and type a "1". The computer will then halt at 0025 as described under normal halts.

RESTART:

To restart at any time, transfer to 7777.
To restart part 1, type "1". To restart part 2, type a "2".
Typing either will result in the computer's halting to allow sense switch
    manipulation.
Depress continue to proceed with processing.

SENSE SWITCHES		PURPOSE	WHEN AVAILABLE
1	ON	Tape in Adams Associates Flexowriter Code.	At all normal halts
	OFF	Tape in DEC Flexowriter Code.	
2	ON	Perform a convert only function. Will read a tape and produce a DEC Flexowriter tape.	0024 Halt
	OFF	Normal	

SENSE SWITCHES		PURPOSE	WHEN AVAILABLE
3	ON	A second (or nth) program tape follows.	0425 Halt
	OFF	No more program tapes follow.	
4	ON	Print each character on the on-line typewriter as it is punched.	At any time
	OFF	No printing.	
5	ON	To provide a halt when an "e" is found in either pass one or two. If used, a second e must be provided on the last correction tape. Depress continue to proceed with routine.	
	OFF	No effect.	
6	ON	Stop when equality of symbols is found. This is useful to provide manipulation of SS 4. Depress continue to proceed.	
	OFF	No stop provided.	