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PROGRAM LIBRARY

DECUS NO.	8-768
TITLE	EDAS - EDITING AND ASSEMBLING SYSTEM
AUTHOR	Melvyn George Fishel
COMPANY	Free University Brussels Brussels, Belgium
DATE	April 16, 1975
SOURCE LANGUAGE	PAL III, PAL-8

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GENERAL INFORMATION

Object Computer(s) PDP-8 Source Computer (if different) _____
File Name EDAS Version No. _____
Title EDAS - Editing and Assembling System
Author Melvyn George Fishel
Submitter (if other than author) _____
Affiliation Laboratorium Fysische Chemie, Free University Brussels
Address 105 Ave. Buyl
B1050 Brussels Country Belgium
Monitor/Operating System _____ DEC No. _____
Core Storage Required 8K Starting Address 00200
Peripherals Required TTY
Other Software Required _____ DEC or DECUS No. _____
Source Language PAL III, PAL-8 Category Programming System; Editing
Restrictions, Deficiencies, Problems _____
Date of Planned or Possible Future Revisions _____

TAPES AVAILABLE

Paper Tapes Object Binary Object ASCII Source Other _____
DECtape LINtape Format _____ Magtape: 7 Track 9 Track BPI _____
Object Files Source Files Documentation Files Other _____

ABSTRACT

See page 1 of write-up

EDAS - EDITING AND ASSEMBLING SYSTEM

DECUS Program Library Write-up

DECUS NO. 8-768

Author: Melvyn George Fishel,
Laboratorium Fysische Chemie,
Free University Brussels, Belgium.
Date: April 16, 1975.
Assembler: PALIII, PAL8.
Hardware: PDP8 (8K core), ASR33.

Write-Up:

EDAS is an editing and assembling system, based on Symbolic Editor (DEC-08-ESAC) and PALIII Assembler (DEC-08-LPALA). EDAS requires 8K of core memory. PALIII programs are edited with the text editor residing in field 0 and can be immediately assembled from Editor's text buffer with the assembler residing in field 1. After each assembly pass the program returns control to Symbolic Editor so that modifications or corrections can be entered without time-consuming paper tape handling. EDAS does not require more core storage than the two separate DEC programs. All previously available editor and assembler options are retained except the paper tape reader input to PALIII (not needed anyway as input is from Editor's text buffer). EDAS is supplied as one binary paper tape containing Editor, PAL and all the necessary modifications.

Loading EDAS:

The Binary Loader must reside in the upper page of either field 0 or field 1. Load the EDAS paper tape using Bin Loader. Editor loads automatically in field 0, PAL in field 1.

Running EDAS:

Set the switch register (SR) to 0200, press "Extended Address Load" and "Load Address". Press "Clear" and "Continue". Editor starts in command mode. Set the SR to the desired editor options. The editor operates almost identically to DEC's Symbolic Editor, including the options. The only difference is that if SR9 is set after a P command is given (the computer halts to allow entering the options) Editor will not punch a source paper tape but control will be given to PAL. The setting of SR0 and SR1 indicates which pass of assembly is to be done. After each assembly pass PAL returns command to the editor. This procedure enables the user to correct eventual errors immediately and assemble the program again. Of course EDAS can only handle programs that fit entirely in Editor's text buffer. The Pause pseudo-op is interpreted as a \$.

New or altered SR options:

<u>Editor:</u>	SR9 = 0	punch a source tape after a P command
	SR9 = 1	start assembly pass after a P command
<u>PAL:</u>	SR2 = 0	continue assembly
	SR2 = 1	interrupt assembly and return control to Editor
	SR3 = 0	output symbol table
	SR3 = 1	suppress output of symbol table

EDAS can be restarted at 00200.

```

1
2
3      /EDAS
4      //
5
6      /EDITING AND ASSEMBLING SYSTEM
7      /EDITOR IN LOWER CORE, PALIII IN UPPER
8      /START SYSTEM AT 00200
9      /SR 9: ASSEMBLE AFTER P-COMMAND (EDITOR)
10     /SR 3: SUPPRESS SYMBOL TABLE (PAL)
11     /SR 2: RETURN COMMAND TO EDITOR (PAL)
12     /PAPER TAPE READER NOT AVAILABLE IN PAL !
13     /NOT NEEDED WITH EDAS ANYWAY !
14     /SYMBOLIC EDITOR: DEC-08-ESAC-LA
15     /PALIII: DEC-08-LPALA-A-LA
16     /M.G.FISHEL
17     /LABORATORIUM FYSISCHIE CHEMIE
18     /FREE UNIVERSITY BRUSSELS, BELGIUM
19     /APRIL 16, 1975.
20
21     /MODIFICATIONS TO PALIII
22     //////////////////////////////////
23         0001             FIELD 1
24
25         0000             *0
26     10000  1476         1476
27
28         0240             *240
29     10240  5641         JMP I 241      /RETURN TO
30     10241  1427         1427          /EDITOR AFTER
31                                     /EACH PASS.
32         0604             *604
33     10604  5400         JMP I 0      /CHANGE DOLLAR ROUTINE.
34
35         0610             *610
36     10610  7012         RTR
37
38         1401             *1401
39     11401  7300         CLA CLL
40     11402  1244         TAD CHAR1     /I IF FIRST CHARACTER,
41     11403  5233         JMP 1433     /TO BE READ BY PAL.
42
43         1427             *1427
44     11427  7300         CLA CLL      /CLEAR ALL
45     11430  3257         DCA PUNORA   /BEFORE RETURN
46     11431  6203         CIF CDF 00   /TO EDITOR.
47     11432  5522         JMP I SL7
48     11433  7640         SZA CLA      /0 IF NOT FIRST CHARACTER.
49     11434  5237         JMP .+3
50     11435  6203         CIF CDF 00
51     11436  5643         JMP I INOUTL /CONTINUE "PUNCH"
52     11437  3244         DCA CHAR1   /NOT FIRST CHARACTER.
53     11440  6203         CIF CDF 00
54     11441  5642         JMP I IPUNCN /START "PUNCH".
55     11442  1214         IPUNCN, 1214

```

56	11443	1152	INOUTL,	1152	
57	11444	0000	CHARI,	0	
58	11445	7602		HLT CLA	/SET SR NOW!
59	11446	7404		OSR	
60	11447	0260		AND C4	/ENTER BIT 9 OPTION
61	11450	3257		DCA PUNORA	/IN PUNORA.
62	11451	1257		TAD PUNORA	
63	11452	7650		SNA CLA	
64					
65	11453	5240		JMP 1440	/PUNCH AS USUAL.
66	11454	7301		CLA CLL IAC	
67	11455	3244		DCA CHARI	/FIRST CHARACTER.
68	11456	5465		JMP I C200	/START PALIII.
69	11457	0000	PUNORA,	0	
70	11460	0004	C4,	4	
71	11461	3275	CHARIN,	DCA ASCII	/SAVE CHARACTER.
72	11462	1257		TAD PUNORA	/PUNCH OR ASSEMBLE?
73	11463	7640		SZA CLA	
74	11464	5273		JMP .+7	
75	11465	1275		TAD ASCII	
76	11466	6041		TSF	/PUNCH THIS
77	11467	5266		JMP .-1	/CHARACTER
78	11470	6203		CIF CDF 00	/WITH ROUTINE
79	11471	5672		JMP I INED	/OUTL.
80	11472	1151	INED,	1151	
81	11473	1275		TAD ASCII	/TRANSFER CHARACTER
82	11474	5204		JMP 1404	/TO PALIII LOREAD.
83	11475	0000	ASCII,	0	
84	11476	7006		RTL	/BIT 3 OPTION: SUPPRESS
85	11477	7004		RAL	/SYMBOL TABLE.
86	11500	5701		JMP I DOLLR	
87	11501	0605	DOLLR,	605	
88	11502	1234		TAD 1434	
89	11503	4430		JMS I EEE	
90	11504	5705		JMP I .+1	
91	11505	1767		1767	
92					
93		1537		*1537	
94	11537	1103		TAD M1	/CTRL K?
95					
96		1554		*1554	
97	11554	7734	M44A,	-44	
98					
99		1726		*1726	
100	11726	1103		TAD M1	/CTRL X?
101					
102		1731		*1731	
103	11731	1073		TAD M2	/CARRIAGE RETURN?
104					
105		1765		*1765	
106	11765	5766		JMP I .+1	
107	11766	1502		1502	
108					
109		2341		*2341	
110	12341	0600		600	/PAUSE=3

```

111
112          0030   EEE=30
113          0122   SL7=122
114          0065   C200=65
115          0103   M1=103
116          0073   M2=73
117
118
119          /MODIFICATIONS TO EDITOR
120          ///////////////////////////////////////////////////
121
122          0000          FIELD 0
123
124          0000          *0
125
126          00000  1632          TSTPUN          /PALIII ?
127
128          0057          *57
129          00057  1640          1640          /BUFFER STARTS AT 1640
130
131          0115          *115
132          00115  1640          1640          /BUFFER AT 1640
133
134          0663          *663
135          00663  5664          JMP I SUPPR          /SUPPRESS OUTPUT?
136          00664  1624  SUPPR,  1624
137
138          1213          *1213
139          01213  5400          JMP I 0          /STOP TO SET SR.
140
141          1147          *1147
142          01147  5750          JMP I .+1          /FROM OUTL INTO CHARIN
143          01150  1635          OUTED
144
145          1624          *1624
146          01624  7710          SPA CLA          /SOME BUFFER SPACE LOST.
147          01625  5230          JMP .+3
148          01626  5627          JMP I .+1
149          01627  0665          665
150          01630  6213          CIF CDF 10
151          01631  5422          JMP I C240
152          01632  6213  TSTPUN,  CIF CDF 10          /FREE CORE IN HIREAD.
153          01633  5634          JMP I .+1
154          01634  1445          1445
155          01635  6213  OUTED,  CIF CDF 10          /SAME.
156          01636  5637          JMP I .+1
157          01677  1461          CHARIN
158
159          0022   C240=22
160
161
162
163
164          SSSSSS

```

ASCII	71	75	81	83#	
CHARIN	71#	157			
CHARI	40	52	57#	67	
C200	68	114#			
C240	151	159#			
C4	60	70#			
DOLLR	86	87#			
EEE	89	112#			
INED	79	80#			
INOUTL	51	56#			
IPUNCN	54	55#			
M1	94	100	115#		
M2	103	116#			
M44A	97#				
OUTED	143	155#			
PUNORA	45	61	62	69#	72
SL7	47	113#			
SUPPR	135	136#			
TSTPUN	126	152#			

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