

DECUS

PROGRAM LIBRARY

DECUS NO.	8-81
TITLE	A BIN or RIM Format Data or Program Tape Generator
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FORMAT	

A BIN OR RIM FORMAT DATA OR PROGRAM TAPE GENERATOR

Program Library Write-up

DECUS No. 8-81

ABSTRACT

This program enables the PDP-8 operator to generate tapes under Teletype control in RIM or PAL BIN format without formal assembly, assuming the operator knows the octal codes corresponding to each instruction. This is particularly useful when dealing with small programs for testing interface equipment or making small modifications to large programs when one does not wish to spend time reassembling the whole program. Often during program debugging, changes are repeatedly toggled into core manually which leaves no permanent record of the changes made and is prone to error. Tapes generated using this program can be appended to existing BIN or RIM tapes and can then be loaded with the original tape into core with the appropriate loader. Another use of this program is in the preparation of data tapes in RIM or BIN format so that data can be loaded straight into PDP-8 core via the usual loaders. The program also generates leader/trailer code and a checksum under program control.

REQUIREMENTS

Storage: Program occupies locations 6000_g - 6077_g.
Equipment: PDP-8 with ASR-33

USAGE

Loading: The program is loaded with the Binary Loader (Digital-8-2-U)
Switch settings: None

1. Start up/Entry
2. Load binary tape
3. Set C (SR) = 6000_g
4. Press Load address
5. Turn on punch with ASR-33 on line
6. Press Start

Program will cycle awaiting first character from ASR-33.

RESTRICTIONS

Program is not relocatable. There is no recovery from typing incorrect characters on the keyboard.

DESCRIPTION

The tape generator uses a fixed algorithm which is explained in the flow diagram. Typing a B on the Teletype causes a leader to be punched. Typing a C is used to punch the checksum on binary tapes and a trailer. A is typed to specify origin setting. Numbers 0 through 7 are used to punch the corresponding numbers on tape. No returns or line feeds are required.

For example, to generate a program tape of this program from the listing for:

1. a BIN format tape one would type

BA600060323277-----0000C

2. a RIM format tape one would type

BA60006032A60013277A6002 -----A60770000B

No checksum is required when preparing RIM format tapes.

FORMAT

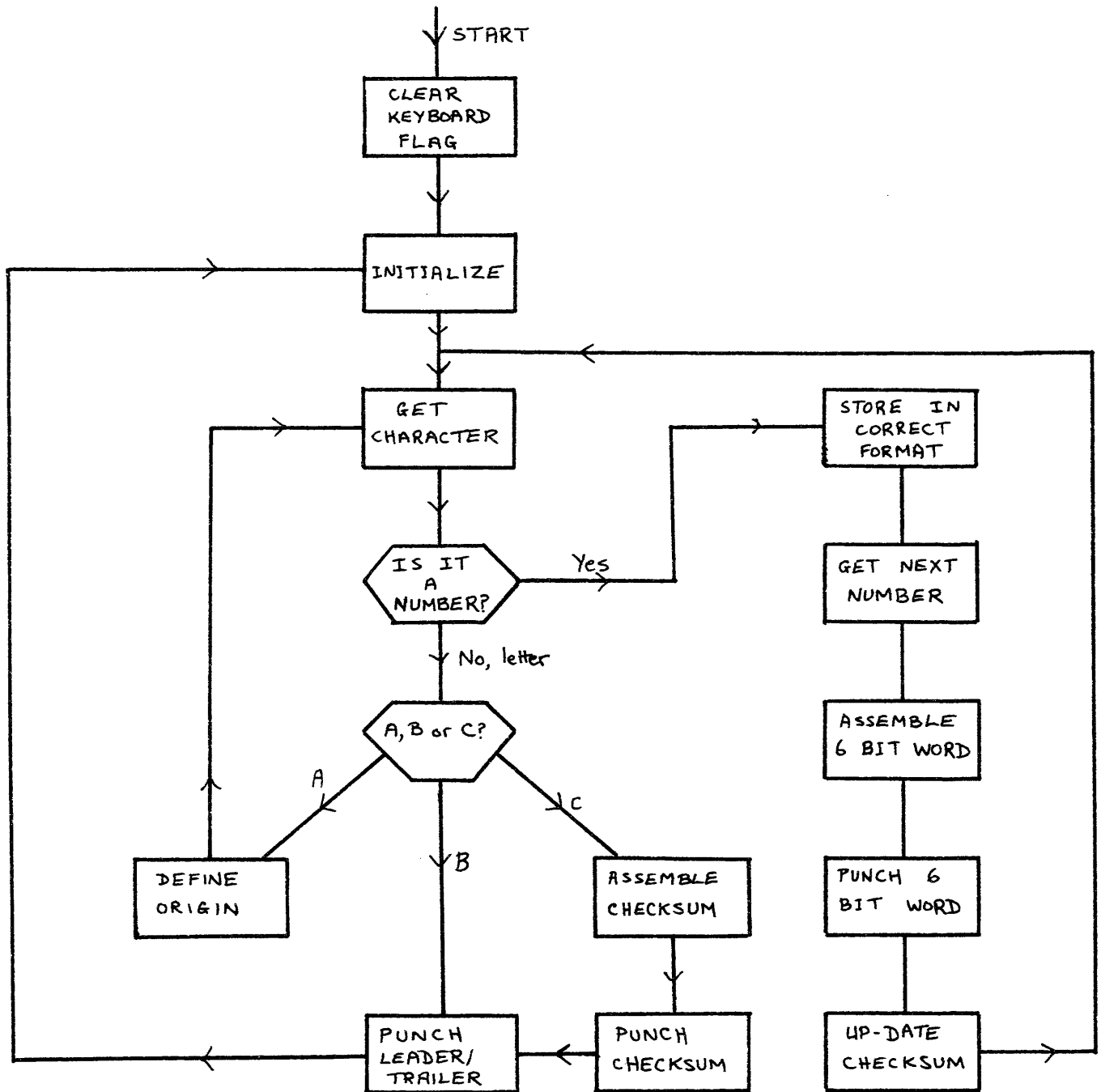
Input format is given in above example.

Output format is RIM or BIN as required.

EXECUTION TIME

Limited by input/output time.

FLOW DIAGRAM



		*6000		
6000	6032		KCC	/INITIALISATION
6001	3277		DCA CHKSUM	
6002	1274		TAD K100	
6003	7040		CMA	
6004	3275		DCA P	
6005	3276	BEGIN,	DCA DMP	
6006	6031		KSF	/ GET CHARACTER
6007	5206		JMP .-1	
6010	6036		KRB	
6011	1272		TAD M272	
6012	7500		SMA	/IS IT LETTER OR NUMBER?
6013	5232		JMP INST	/LETTER
6014	1271		TAD K12	/NUMBER
6015	7104		RAL CLL	
6016	7006		RTL	
6017	1276		TAD DMP	
6020	3276		DCA DMP	/STORE MOST SIG. HALF
6021	6031		KSF	
6022	5221		JMP .-1	
6023	6036		KRB	
6024	0273		AND M7	
6025	1276		TAD DMP	/ASSEMBLE WORD
6026	6046		TLS	
6027	1277		TAD CHKSUM	/UPDATE CHECKSUM
6030	3277		DCA CHKSUM	
6031	5205		JMP BEGIN	
6032	1267	INST,	TAD KON	/WHICH LETTER?
6033	3234		DCA .+1	
6034	0000		0	
6035	5251		JMP ORIGIN	/A
6036	5253		JMP LEADER	/B
6037	1277		TAD CHKSUM	/C
6040	7112		CLL RTR	/OUTPUT CHECKSUM
6041	7012		RTR	
6042	7012		RTR	
6043	0270		AND M77	
6044	4261		JMS PUNCH	
6045	1277		TAD CHKSUM	
6046	0270		AND M77	

6047	4261		JMS PUNCH	
6050	5253		JMP LEADER	/ PUNCH TRAILER
6051	1274	ORIGIN,	TAD K100	/DEFINE ORIGIN
6052	5205		JMP BEGIN	
6053	1274	LEADER,	TAD K100	/PUNCH LEADER
6054	1274		TAD K100	
6055	4261		JMS PUNCH	
6056	2275		ISZ P	
6057	5253		JMP LEADER	
6060	5201		JMP BEGIN-4	
6061	0000	PUNCH,	0	
6062	6046		TLS	
6063	6041		TSF	
6064	5263		JMP .-1	
6065	7200		CLA	
6066	5661		JMP I PUNCH	
6067	5226	KON,	5226	
6070	0077	M77,	77	
6071	0012	K12,	12	
6072	7506	M272,	7506	
6073	0007	M7,	7	
6074	0100	K100,	100	
6075	0000	P,	0	
6076	0000	DMP,	0	
6077	0000	CHKSUM,	0	

BEGIN	6005
CHKSUM	6077
DMP	6076
INST	6032
KON	6067
K100	6074
K12	6071
LEADER	6053
M272	6072
M7	6073
M77	6070
ORIGIN	6051
P	6075
PUNCH	6061