



DECUS

PROGRAM LIBRARY

DECUS NO.	8-183
TITLE	The WANG Loader
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SOURCE LANGUAGE	Machine

DECLASSIFIED
PROGRAM 12-1-78



DATE	DESCRIPTION	AMOUNT
12-1-78	[Faint text]	[Faint text]
12-1-78	[Faint text]	[Faint text]
12-1-78	[Faint text]	[Faint text]
12-1-78	[Faint text]	[Faint text]
12-1-78	[Faint text]	[Faint text]
12-1-78	[Faint text]	[Faint text]
12-1-78	[Faint text]	[Faint text]
12-1-78	[Faint text]	[Faint text]
12-1-78	[Faint text]	[Faint text]
12-1-78	[Faint text]	[Faint text]
12-1-78	[Faint text]	[Faint text]
12-1-78	[Faint text]	[Faint text]
12-1-78	[Faint text]	[Faint text]



THE WANG LOADER

DECUS Program Library Write-up

DECUS No. 8-183

DESCRIPTION

The initial instructions are loaded by hand. The tape is placed in the reader, with the special leader section ready to be read first. The reader is turned on and the start key is depressed.

The WANG Loader makes several passes through itself making changes, and building a larger program. Then, it proceeds to load the user program. Finally it changes itself to start the user program at the starting address.

OPERATION

The first section of the program reads one character, rotates 3 right, and DCA's I 17. The leader is such that register 17 is set to 16 each time the leader character is read. The last character of the leader is \emptyset which sets 17 to \emptyset .

The next section of tape loads the Pass 1 Program. When 25 is placed in 17 the next character is put into location 26 which transfers control to the Pass 1 Program at location 2.

The Pass 1 Program makes the changes to the Pass 2 Program. Now there are two read loops. The first reads a character rotates 4 left and saves bits \emptyset -7. The second reads bits 7-11 (bit 6 not used) and adds the saved bits making a 12-bit word. The first word read by the Pass 2 Program changes location 25 to DCA I 1 \emptyset forming the Pass 3 Program. The first word read by the Pass 3 Program is the beginning address of the Program-1, which sets 1 \emptyset to load the User Program.

The next section of tape is the User Program which is loaded by Pass 3 until it wraps around the high-end of core.

Locations \emptyset and 2-7 are set to HLT, 1 is set to the starting address of the User Program, 1 \emptyset is set to 25 (forcing the next word into 26) and 26 is set to JMP I 1 which starts the User Program.

NOTE: The Initial program works by saving links from the previous character. The main program (Pass 1-4) does not need this so the coding of the tape avoids setting links.

LISTING

ADDR	INITIAL	PASS1	PASS2	PASS3	PASS4
0000					7402 HLT
1		24			XXXX START ADDR
2		1002 TAD	2		7402 HLT
3		3024 DCA	24		7402 HLT
4		1001 TAD	1		7402 HLT
5		3017 DCA	17		7402 HLT
6		1012 TAD	12		7402 HLT
7		3026 DCA	26		7402 HLT
10		7			25
11		6031 KSF			
12		5011 JMP	11		
13		6036 KRB			
14		7006 RTL			
15		7006 RTL			
17	16	25	24		
20	6031 KSF				
21	5020 JMP	20			
22	6036 KRB				
23	7010 RAR				
24	7012 RTR		1002 TAD	2	
25	3417 DCA	1 17			3410 DCA 1 10
26	5020 JMP	20 5002JMP	2 5011 JMP	11	5601 JMP I 1

Instructions for using the BIN RIM Boot.

Load the following instructions beginning at location 0017:

0017/	0015
0020/	6031
0021/	5020
0022/	6036
0023/	7010
0024/	7012
0025/	3417
0026/	5020

1. Place the tape in the reader.
2. Load 0020 into the program counter.
3. Set the switch register to 7777.
4. Press start and start the tape reader.
5. When the loader is ready to load a bin tape it will print:

BIN LOADER IS READY
LOCATION 0000-0026 ERASED

6. To load a bin tape, place it in the reader.
7. Start the reader, and press continue.
8. To load a rim tape set PC to 7756.
9. Place tape in reader.
10. Press start.

This tape uses The WANG Loader to load the BIN and RIM Loader and starts the BIN Loader. The BIN Loader loads a program that reads tape and echos. If this echo Program has loaded correctly the message will be typed. When it finishes it sets location 0-26 to HLT. When the Teletype stops typing the BIN Loader will start when the CONTINUE key is depressed.

