

UNIVERSITY OF ILLINOIS

DIGITAL COMPUTER

Aux.
LIBRARY ROUTINE N 10- 205

TITLE Input a Sequence of Integers with Sum Check
 TYPE Closed
 NUMBER OF WORDS 36
 TEMPORARY STORAGE 0, 1, 2, 3, 4.
 ACCURACY Exact
 DURATION 3 m.s. per digit. The time is determined solely by the
 input speed.
 DESCRIPTION This routine at location r is called into used by the orders

q	50 qF	nF ← n is the first of the sequence of locations at which the integers are stored.
q + 1	26 rF	

Each integer on the tape is preceded by a sign and up to 12 decimal characters. The last number on the tape is terminated by an N, J, F or L. The last number on the tape is a sum check and is the signed sum of all previous integers which have been read in. This sum can be computed by adding all previous numbers regardless of overflow in the accumulator. The sum check is not stored in the memory but is compared with the sum of the previous numbers as computed above. If the sum does not agree control is transferred back to the routine and the computer stops, whereupon the operator may reset the tape and with the black switch input the sequence again. If the sum agrees with the last number then control is transferred to the main routine.

DATE January 12, 1956
 PROGRAMMED BY *W. Scott Bartley*
 APPROVED BY *J. Nash*

1/12/56
 mge

LOCATION	ORDER	NOTES
0	K5 F 42 22L	Link
1	10 20F 40 2F	Store address of 1st location
2	L5 2F 42 15L	Plant address of 1st location
3	81 4F L0 24L	Plant sign of 1st number
4	40 3F 41 4F	Clear sum storage
5	L5 3F 40 1F	Store + or -
6	81 4F 22 8L	read next character.
7	50 F 74 24L	
8	00 39F 40 F	
9	81 4F L0 24L	Form N
10	32 11L L4 24L	
11	26 7L 40 3F	
12	L0 25L 32 18L	Test for terminating symbol
13	L1 1F 36 15L	
14	L1 F 40 F	Reverse sign
15	L5 F 40 ()F	Store

LOCATION	ORDER	NOTES
16	L4 4F 40 4F	Accumulate sum
17	F5 15L 40 15L	Increase store address
18	26 5L L1 1F	get next number
19	32 20L L1 F	
20	40 F L5 F	Reverse sign of sum check number
21	L0 4F 40 3F	Sum check number - sum
22	L3 3F 32 ()F	Sum check link out
23	24 2L 00 F	transfer to do over and stop waste
24	00 F 00 10F	
25	00 F 00 2F	Constants

WSB/mge