

UNIVERSITY OF ILLINOIS
DIGITAL COMPUTER

LIBRARY ROUTINE N 15 - 271

TITLE: Mixed Number Input
TYPE: Closed with standard entry
NUMBER OF WORDS: 44
ACCURACY: Machine capacity
SPEED: Input time
TEMPORARY STORAGE: 0, 1, 2
USE: Enter with link address in Q. Number to be read must be punched on tape as a sign digit, up to twelve decimal digits as the integer part, a decimal point, up to twelve digits as the fraction part, a carriage return and line feed symbol to indicate the end of the number. Fifth hole characters other than decimal point and carriage return are ignored, so that typing errors may be punched out. On exit from this routine, the number is contained in AQ scaled by 2^{39} with $q_0 = 0$. (i.e. $N \cdot 2^{-39}$ is in AQ where N is the number on the tape).

e.g.

-3.65(c.r.) on tape

-3.65 x 2^{-39} in AQ

Zero may be punched as sign, decimal point, carriage return.

DATE	November 3, 1959
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APPROVED BY	<i>J. Snyder</i>

LOCATION	ORDER	NOTES	PAGE 1	N 15
0	K5 F	} Link		
	42 1L			
1	26 2L	}		
	22 F			
2	41 1F	Clear 1		
	41 2F	Clear 2		
3	81 4F	Read sign		
	50 1F	digit		
4	00 39F	}		
	40 26L		Set 26L to 0 or -1	
5	91 4F	Read next character		
	32 8L	5th hole?		
6	10 27L	}		
	40 F		Check for	
7	L3 F	}	decimal point	
	36 12L			
8	26 5L	}	repeat if not.	
	40 F			
9	50 28L	}		
	75 1F		treat number	
10	00 4F		as integer	
	14 F			
11	40 1F	}		
	26 5L		repeat.	
12	91 4F	}	Read in next character	
	32 15L		5th hole?	
13	10 29L	}		
	40 F		Check for	
14	L3 F	}	carriage return	
	36 20L		and line feed	
15	26 12L	}	repeat if not.	
	40 F			
16	50 F	}		
	75 32L			
17	00 39F	}	treat number	
	14 2F		as fraction	

LOCATION	ORDER	NOTES	PAGE 2 N 15
18	40 2F	}	
	F5 16L		
19	42 16L	}	
	26 12L		repeat
20	L5 30L	}	reset
	42 16L		
21	L5 26L	}	Check sign
	32 24L		
22	F1 1F	}	
	40 1F		
23	F1 2F	}	assemble
	L4 31L		number
24	40 2F	}	in AQ
	50 2F		
25	L5 1F	}	
	22 1L		exit
26	00 F	}	(0 or -1)
	00 F		sign digit
27	80 F	}	decimal point
	00 10F		
28	50 F	}	10
	00 F		16
29	80 F	}	Carriage return
	00 2F		and line feed
30	00 F	}	reset
	00 32L		constant
31	80 F	}	
	00 F		-1
32	00 F 00	}	
	1000 0000 0000 J		10^{-1}
33	00 F 00	}	
	100 0000 0000 J		10^{-2}
34	00 F 00	}	
	10 0000 0000 J		10^{-3}
35	00 F 00	}	
	1 0000 0000 J		10^{-4}

LOCATION	ORDER	NOTES
36	00 F 00 1 000 0000 J	10^{-5}
37	00 F 00 1 00 0000 J	10^{-6}
38	00 F 00 10 0000 J	10^{-7}
39	00 F 00 1 0000 J	10^{-8}
40	00 F 00 1000 J	10^{-9}
41	00 F 00 100J	10^{-10}
42	00 F 00 10J	10^{-11}
43	00 F 00 LJ	10^{-12}