



FIBO2.TXT

Program for calculating Fibonacci numbers from rank 1 to 24 (1 to 30 in octal).
The result is obtained in registers R1 and R2, with R1 representing the accumulated carries.

Execution :

- 1) Enter the number of rank n (in octal):
nnn (from 001 to 030)
- 2) Start the calculation: [RESET] [RUN]
- 3) The result is displayed (first part)
OUT: xxx (register R1)
Press [RUN] for the next part
The result is displayed (second part)
OUT: yyy (register R2)

The result (in octal) is equal to:

$$(R1 * 400) + R2$$

Example :

Calculation of the 24th Fibonacci number

- 1) Enter the number of rank n (in octal) :
030
- 2) Start the calculation: [RESET] [RUN]
- 3) The result is displayed (first part)
OUT: 265 (register R1)
Press [RUN] for the next part
The result is displayed (second part)
OUT: 040 (register R2)

the result (in octal) is equal to :

$$(265 * 400) + 40 \rightarrow 132440$$

or in decimal :

$$(181 * 32) + 128 \rightarrow 46368$$

	.org 0	:000	
000	in R0	000 160	
001	ldi R1,0	001 071 000	
003	ldi R2,1	003 072 001	
005	ldi R4,0	005 074 000	
007	dec R0	007 110	
	LOOP:		
008	mov R1,R5	010 027 015	
010	mov R2,R6	012 027 026	
012	add R4,R6	014 020 046	
014	jnc NEXT	016 012 021	
016	inc R5	020 105	
	NEXT :		
017	add R3,R5	021 020 035	
019	mov R1,R3	023 027 013	
021	mov R2,R4	025 027 024	
023	mov R5,R1	027 027 051	
025	mov R6,R2	031 027 062	
027	dec R0	033 110	
028	jnz LOOP	034 006 010	
030	out R1	036 171	
031	halt	037 002	
032	out R2	040 172	
033	halt	041 002	
	.end		