FIBONNACCI NUMBERS

PURPOSE
Generate a sequence of Fibonacci numbers of length N where N is specified by the user.

DESCRIPTION
The Fibonacci sequence is defined by:

\[
\begin{align*}
Fib(i) &= Fib(i-1) + Fib(i-2) \quad \text{for } i > 1 \\
&= 1 \quad \text{for } i = 1 \\
&= 0 \quad \text{for } i = 0
\end{align*}
\]

SYNTAX

LET <resp> = FIBONNACCI NUMBERS FOR I = <start> <inc> <stop>

where <resp> is a variable where the Fibonacci numbers are stored;
<start> is a number or parameter that is the first element of <resp> in which the Fibonacci numbers are stored (it is almost always 1);
<inc> is a number or parameter that specifies the row increment in <resp> for storing the Fibonacci numbers (it is almost always 1);
and <stop> is a number or parameter that specifies the last row of <resp> in which to store the Fibonacci numbers.

EXAMPLES

LET YFIB = FIBONNACCI NUMBERS FOR I = 1 1 100

DEFAULT
None

SYNONYMS
None

RELATED COMMANDS

SEQUENCE = Generate a sequence of numbers.
PATTERN = Generate numbers with a specific pattern.
PRIME NUMBERS = Generate prime numbers.
DATA = Place numbers in a variable.

APPLICATIONS
Mathematics

IMPLEMENTATION DATE
87/10

PROGRAM

LET YFIB = FIBONNACCI NUMBERS FOR I = 1 1 20
PRINT YFIB