Numbers in the Fibonacci Sequence Circuit
PC/CP220 Project Phase I

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Description

The Fibonacci sequence is a sequence of numbers that appeared in historical mathematics. It is described as a sequence that starts with the numbers 0 and 1, where each continuing number is the sum of the two previous numbers. The equation to find a number of the sequence can be denoted as:

$F_n = F_{n-1} + F_{n-2},\ where\ F_0 = 0,\ F_1 = 1$

Inputs

The Numbers in the Fibonacci Sequence Circuit will have three inputs, a_0 to a_2, which gives binary representation to the *n*th number of the sequence. (a_0 is the least significant bit)

Outputs

The Numbers in the Fibonacci Sequence Circuit will have four outputs, b_0 to b_3, which gives binary representation to the value of the *n*th number of the sequence. For example, the binary input of 3 (011) will output the 3rd number of the sequence, which is 2 (010).

Notes

Some sources will display that the Fibonacci sequence starts at the values 1 and 1, rather than 0 and 1. For the purposes of this project, the 0th number of the sequence will be 0, and the 1st will be 1.