# # Fast Algorithm to find out Fibonacci numbers by using **Using power of the matrix {{1,1},{1,0}} and power of a any matrix can be calculated by Fast exponentiation.**

**(Refer this code for fast exponentiation:** <https://ide.codingblocks.com/s/122836> )

IMG_256

If we n times multiply the matrix M = {{1,1},{1,0}} to itself (in other words calculate expo(M, n )), then we get the (n+1)th Fibonacci number as the element at row and column (0, 0) in the resultant matrix..

You can find code on Coding Blocks IDE :

<https://ide.codingblocks.com/s/122895>