Fibonacci.m

function F = Fibonacci(n)
    % function F = Fibonacci(n)
    %
    % Computes the first n Fibonacci numbers and returns them as a vector F.
    %
    % F(1) = 0, F(2) = 1, and, thereafter, F(k) = F(k-1)+F(k-2).
    %
    % Note: n should be 2 or larger.

    % Initialize the sequence with the first 2 Fibonacci numbers.
    F(1) = 0;
    F(2) = 1;

    % Now compute the remaining Fibonacci numbers up to n.
    for k = 3:n
        F(k) = F(k-1) + F(k-2);
    end

    % return to where the function was called

    return

FibonacciDemo.m

% Script for calling the function Fibonacci and plotting the results.
% (Or just type the commands into the MATLAB command window.)

% Get the first 10 Fibonacci numbers:
% Call Fibonacci and assign the result to a vector F.
% (The vector does not have to be called F.)

F = Fibonacci(10);

% Plot the vector F.

plot(F);
Figure 1: Screen output from FibonacciDemo.m which uses Fibonacci.m.