Learning Outcomes

Upon completing this assignment, students should be able to

- **Program** a *recursive* function to calculate the values in a Fibonacci sequence.
- **Loop** to print out the first 15 elements.

Overview

Write a program that uses a loop to generate the first 15 elements in a Fibonacci sequence. Terms in the sequence will be generated by calling a *recursive* function, `fibonacci` with the index in the sequence.

Initial Values

Traditionally, **the** Fibonacci sequence is the recurrence:
$f_n = f_{n-1} + f_{n-2}$
$f_1 = 1$
$f_0 = 0$
With first several terms then being: 0, 1, 1, 2 ,3, 5, 8, 13, 21, 35, 56, 91, 147, 238.

Changing the initial values without changing the recurrence produces a different Fibonacci sequence. Each student will use their initials, translated according to A=1, B=2, *etc.*, as the initial values. Thus Dr. Ladd (**B**rian **L**add) would use $f_0 = 2$ and $f_1 = 12$.

Procedure

Write a function of one integer parameter, `fibonacci` that returns the nth Fibonacci number in your, personal, sequence.

Write a `main` program that runs a *count-controlled* loop from 0 to 14 (inclusive), printing the vaule of `i` and `fibonacci(i)`, one such pair per line.

Program in *commented* MIPS assembly language that loads and runs in MARS. Make sure to include an appropriate ID block in the code.

`README` documents what the code should do and how to rerun any test cases you used.

Submit into Gitea `https://cs-devel.potsdam.edu` with the MIPS and `README` files.