

CSCE 212
EXTRA CREDIT PROJECT
MIPS Assembler Exercise
“Recursive Subroutines and Fibonacci Numbers”
Due Date: 4/27
No late submissions will be accepted

Introduction

For this assignment, your goal is to write a *subroutine* that computes the *n*th Fibonacci number, along with a “*main*” routine that calls your subroutine.

Background Information

The Fibonacci number sequence is a classical concept in Computer Science. Many patterns in nature have been observed to follow the Fibonacci sequence. Alan Turing, a man who is widely considered to be the father of Computer Science, devoted the latter part of his life to biology and physics research that involved the Fibonacci sequence.

Formerly defined, the *n*th Fibonacci number is:

$$\begin{aligned}F_n &= F_{n-1} + F_{n-2} \\ F_1 &= 1 \\ F_0 &= 0\end{aligned}$$

The sequence is 0, 1, 1, 2, 3, 5, 8, 13, 21, 34... As you can see, you add the last two numbers to get the next number in the sequence.

Input/Output

The input will come from the user in the console window. Here’s an example user interface from the version that I wrote:

Which Fibonacci number do you want?: 5
Answer is: 5

Which Fibonacci number do you want?: 9
Answer is: 34

You may assume that the user will enter a non-negative integer.

Issues to Resolve

You may want to use a recursive subroutine for this assignment (although this is not required).

What to Submit

Submit your code via Dropbox.