

CPS 104 Homework-2:

Due: Monday September 28, 11:59pm.

(100 pts.)

Write a MIPS assembly program that reads an integer n $1 < n < 16$, and computes the first $n+1$ terms of the sequence: F_0, F_1, \dots, F_n defined by:

$$F_0 = -2, F_1 = 2;$$

$$F_{k+1} = F_k + F_{k-1}; \quad k = 1, \dots, n-1$$

The program should store the numbers F_k starting at address $0x10000100$ (including F_0 and F_1). Print to the terminal the value of n the last number F_n and the sum of the numbers F_0 to F_n . Use **spim** or **xspim** to run and debug your program. You must use the MIPS register convention (names and use). You *must comment* your program so we could grade it. Submit your program through **Eclipse** into **HW2** folder.

Included is the assignment-program written in **Java**. Please use it as a reference. The output from your assembler program should match the output of the **Java** program.

Hint: To store the array of values in memory at the specified location look at `.data` and `.space` directives.

```

import java.io.*;
import java.util.Scanner;

public class Fibo{
    public static void main(String[] args) {
        // TODO Auto-generated method stub
        // Create a scanner to read from keyboard
        Scanner scn = new Scanner (System.in);
        int n;
        int sum;
        int i;
        int [] f = new int[17];

        while(true){
            System.out.printf ("Input please: \n") ;
            n = scn.nextInt() ;
            if((1 < n) && (n < 16)) break;
            System.out.printf ("wrong input \n");
        }
        f[0] = -2;
        f[1] = 2;
        sum = 0;

        for(i = 2; i<=n; i++) {
            f[i] = f[i-1] + f[i-2] ;
            sum = sum + f[i];
        }
        System.out.printf ("The last number is: %d\n", f[n]);
        System.out.printf ("The sum is: %d\n", sum);

    }
}

```