ELIZABETHTOWN COLLEGE
DEPARTMENT OF COMPUTER SCIENCE

Assembly Lab #1: Basic Operations

Student name:

Course: *Digital Design II* – Professor: *Professor X*
Due date: *March 28th, 2025*

Lab Objective

To obtain the basics of assembly such as moving data around, doing basic arithmetic, and jumps.

Prelab.

- Set up the Cosmic environment and assembler. (Make sure you have Python 3.x installed)
- Familiarize yourself with the documentation of the opcodes, labels, and variables.
- In particular, pay attention to the following opcodes: MOV, ADD, INC, JMP, CMP.

During Lab

You will write a simple program that will take a number from a position in memory, calculate the correlating Fibonacci number, and put it in another position of memory.

- Store a number, $1 \leq n \leq 13$, in an arbitrary position of general memory (you may use a variable for this).
- Based on that number, calculate the correlating nth Fibonacci number.
- You will do this with a loop, you must use labels and the JMP instruction for this.
- Once the number is calculated, store it elsewhere in memory (you may use a variable for this)

Grading

30% - Program assembles
40% - Program calculates Fibonacci number
10% - Proper memory space is used
10% - Comments added
10% - Loop runs in less than 30 cycles

Helpful Links

Fibonacci Numbers
Cosmic Documentation