

## CS211 Assignment 4 Readme

NOTE: run mystery.y86.txt with y86emul.out

### y86emul

This program reads y86 directives from a file line by line and executes them, setting up a stack in memory and placing the instructions listed in the .text directive within memory. It then goes through each instruction, keeping track of the current place using a program counter, until it reaches either an error or a halt instruction. I have checked extensively to catch every possible error case.

### Challenges:

- Each character within the instructions represents half of a byte, which lead to numerous issues initially.
- Things such as displacements within the instructions had to be reversed.
- Having to mask in order to convert between an int and 4 chars was very time consuming to write correctly.
- Whether or not to cast things as unsigned was sometimes confusing.
- The expectations for readX and writeX were very unclear and led to many problems.

### y86dis

This program reads y86 machine instructions from a text file, printing the hex address of the instruction, its x86 equivalent, and its y86 machine code. It does this using formatted prints and keeping track of the initial hex address of the text and the current offset within it. The only

real challenge with this program was the fact that x86 assembly doesn't appear to have print or scan instructions, so I left a placeholder message in their stead.