

CS 371
Assignment #6
ALU

Due 11/11/09, in class

Do both the lab and book work for this assignment individually.

Lab Work

The goal of the lab part of this assignment is to build and play with an ALU! Using problem 7 from Chapter 9 as a guide, build a 4 bit ALU. The A and B inputs come from two banks of 4 switches. Connect each bank and the output to a 7-segment display. The ALU should support the following functions:

FSEL	Output
00	$A = B$
01	0
10	B
11	$A + B$

What to hand it

- 1) Top level schematic with your name on it.
- 2) Email me the .ms8 file.

Notes

Within reason, the fewer components (gates / chips) the better.

Extras Credit

[5 points] Add the status bits N, Z, O, and C to the ALU.

Book Work

- (1) Do problems 1 and 8 from Chapter 8, and problems 11, 21, and 29 from from Chapter 3 of Mano and Kime 4th edition.
- (2) Then do the following:
Implement a binary full added with a dual 4-to-1-line multiplexer and a single inverter.