Introduction to Digital Logic
EECS/CSE 31L

Assignment 1 Design Report Sample
Designing Combinational Circuits

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November, 11, 2014

1 BLOCK Description

This 32-bit ALU is designed to accept two 32-bits and depending on the mode and the opsel selected, it will perform a series of operations to the two 32-bit numbers. The operations include arithmetic operations such as addition, subtraction, increment, decrement, etc. It can also perform logical operations such as AND, OR, XOR, shifts, etc.

2 Input/Output Port Description

Port Name	Port Size	Port Type	Description
A	32	IN	1st 32-Bit Number
B	32	IN	2nd 32-Bit Number
opsel	3	IN	Operation Selection
mode	1	IN	Mode Selection (0=Arithmetic, 1=Logical)
output	32	OUT	Output of the operation
cout	1	OUT	Carry out bit

3 Design Schematic