Com Sci 152B Digital Design
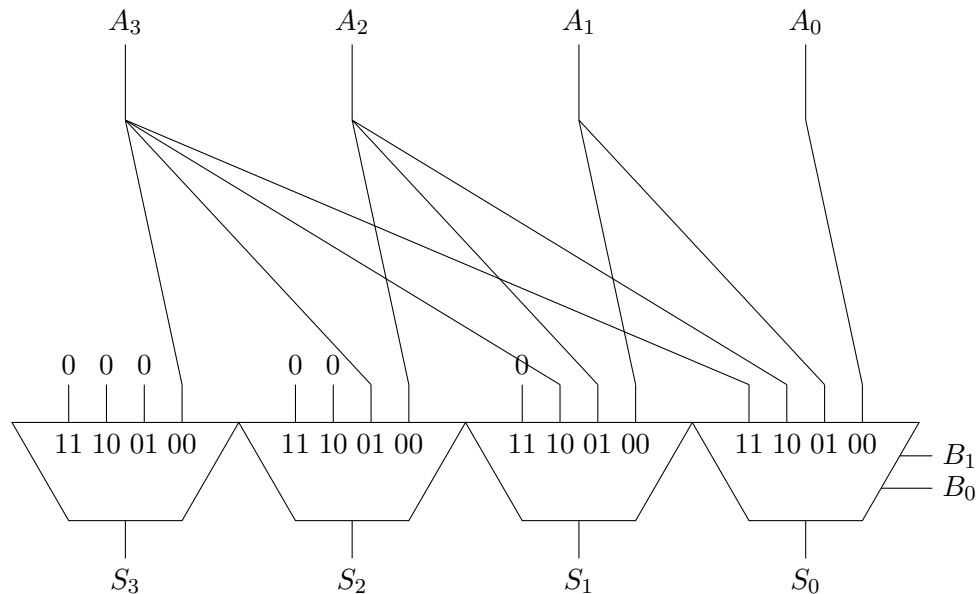# Lab 1: ALU & Register File Implementation

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Overview

In this lab we implemented two key components found in modern processors: the arithmetic logic unit (ALU) and the register file. The purpose of the ALU is to perform a variety of operations on arbitrary 16-bit integers and write the result to an output port. On the other hand, the register file performs no computation and simply reads and writes to a series of internal 16-bit registers.

Shifter

Arithmetic Right Shifter

A_3 A_2 A_1 A_0

11 10 01 00	11 10 01 00	11 10 01 00	11 10 01 00	B_1
				B_0

S_3 S_2 S_1 S_0