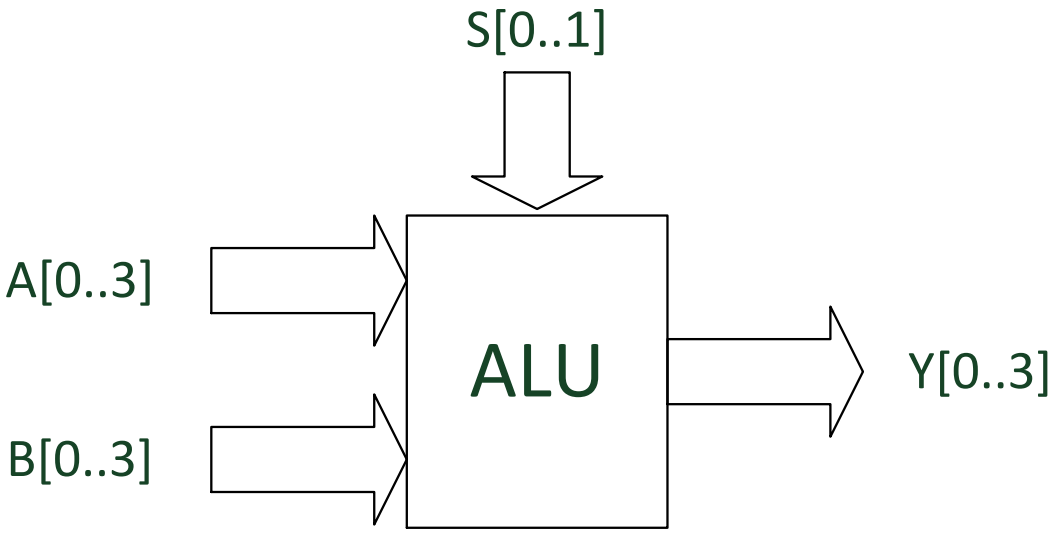

Figure 1: ALU Block Diagram

Using the simulation program (Altera Quartus Prime), it is required to make an 4bit ALU unit that able to do the following operations:

Selector "S"	Operation
00	Pass the 1st operand (Y = A)
01	Pass the 2nd operand (Y = B)
10	Add the 2 operands (Y = A+B)
11	Bit-wise AND the 2 operands (Y = A AND B)

The ALU unit takes **2** 4-bits input (A, B) and **1** 4-bits output (Y), as shown in figure 1. The ALU also takes **1** 2-bit selector (S) to choose the required operations. Make any extra assumptions you need.

Requirements:

1- Create a schematic file and implement the ALU operation
2- Create another schematic file and use the ALU as a component (check slide 31 & 32 in the lab)
3- Create a waveform file and set a test scenario
4- Compile and simulate your design

Deadline:

You will need it in your next assignment, so please