ECE 4623/5623
Homework #3 (Due: 10/17/2017)
Arithmetic Logic Unit (ALU)

1. Add an arithmetic logic unit (ALU) to your register transfer structure (HW #2).
2. The ALU should support the following 9 instructions.
   (a) **Add:** add the values stored in two source registers and store the sum in a destination register.
   (b) **Add Immediate:** add a value stored in a source register to a value provided through the switches and store the sum in a destination register.
   (c) **Subtract:** subtract the values stored in two source registers and store the difference in a destination register.
   (d) **Multiply:** multiply the values stored in two source registers and store the product in a destination register.
   (e) **NAND:** compute a bitwise NAND between two source registers and store the logical result in a destination register.
   (f) **AND:**
   (g) **OR:**
   (h) **Generate 8bit PseudoRandom Number:**
   (i) **Create Your Own:**