**Homework 7**

**Computer Architecture**

1. A majority function is generated in a combinational circuit when the output is equal to 1 if the input variables have more 1’s than 0’s. The output is 0 otherwise. Design a three-input majority function.
2. Design a 2-bit count-down counter. This is a sequential circuit with two flip-flops and one input x. When x = 0, the state of the flip-flops does not change. When x = 1, the state sequence is 11, 10, 01, 00, 11, and repeat.