CS 2200 Homework 2

Fall 2017

Rules:

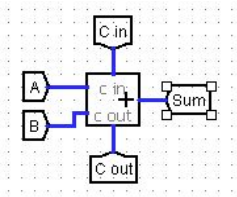
- This assignment has two parts, a **written portion** and a **programming assignment**.
- Please print this sheet and handwrite your answers. No electronic submissions are allowed on the written portion. **Please print as one double-sided page.**
- You may discuss concepts with your classmates but not the answers.
- Written portion due date: **September 13th – 6:05 PM** . Bring your BuzzCard.

Name:_____ GT Username:_____ Section: ____

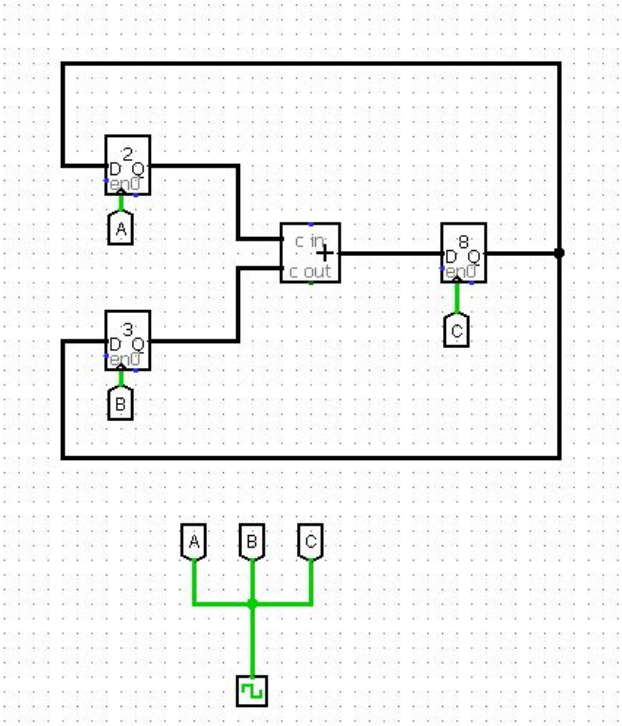
1. Fill in the following truth table for this **1-bit Full Adder**:

A	B	Carry In	Result	Carry Out

2. Using only 1-bit adder blocks (similar to the one pictured below) and XOR gates, build a 4-bit adder-subtractor. You are adding two positive 2's complement integers, a and b, that are each 4-bits. Add input for whether the **operation is addition or subtraction** (1-bit) and output for **carry-out** and **result**.



3. The following circuit contains three 8-bit registers A, B, and C, each initialized with 0x02, 0x03, and 0x08, respectively, as well as a clock and an adder. Fill in the table below to indicate the values for A, B, and C across 3 clock cycles



Register	Clock Cycle 0	Clock Cycle 1	Clock Cycle 2	Clock Cycle 3
A	0x02			
B	0x03			
C	0x08			

4. For the coding portion of this assignment, see the directions under the **T-Square Assignments Tab**. You will be writing an LC-2200 assembly program that complies with the calling convention presented in lecture. Your program must be submitted to T-Square by **Friday, September 15th** at **11:55pm**.