

COMP 3315 Pre-Lab 8: SMIPS 8-bit Adder Design

Number and Name:

1. **Object:** Design and implement a 8-bit Adder

2. **Procedure:** We will build the 8-bit adder of SMIPS.

a) Construct a 1-bit Half Adder (HA) that has the following truth table. (HA circuit)

A	B	Sum	Cout
0	0	0	0
0	1	1	0
1	0	1	0
1	1	0	1

b) Build a 1-bit Full Adder (FA) with using HA subcircuit. (FA circuit)

FA's Truth Table				
A	B	Cin	Sum	Cout
0	0	0	0	0
0	0	1	1	0
0	1	0	1	0
0	1	1	0	1
1	0	0	1	0
1	0	1	0	1
1	1	0	0	1
1	1	1	1	1

c) Enlarge the HA and FA to 8 bits. The LSB of the 8-bit adder is a HA and the remaining 7 bits are FAs. (8bitadder circuit)

Upload .circ file for your pre-lab.

