

Lab 3

Logic Implementation Using ICs

Due before your lab period on September 21 or 23

- Look up the data sheet for your 74HC00 and 74LS00 ICs and find V_{OH} , V_{OL} , V_{IH} , and V_{IL}
- Measure V_{OH} and V_{OL} for each IC and compare to the datasheet values
- Generate the truth table for the following Boolean expression

$$ac + a'b + ab'c' \tag{1}$$

- Using the ICs in your kit, implement (1) on your breadboard and verify it using your truth table
 - Use only the 7408, 7432, and 7404 ICs
 - Use switches for inputs and the bar LEDs as outputs
 - Do not simplify the expression
- Demonstrate your complete and functional circuit to your lab TA

The report for this lab should include the following sections:

1. Description/Objectives
2. Procedure, which must include
 - (a) Voltage levels (measured and from the datasheet) for your 7400 ICs
 - (b) The truth table you generated for (1)
3. Observations
4. Conclusions