

ECE 204L - THE VERY BASICS - LAB 3 INTRODUCTION TO SWITCHING CIRCUITS - PART III

WINTER 2004

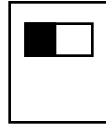
A.P. FELZER

OBJECTIVE

The objective of this lab is to build switching circuits with DIP switches.

LAB

1. The objective of this first problem is to determine how the DIP switch works.
 - a. First draw a picture of your DIP switch like the following

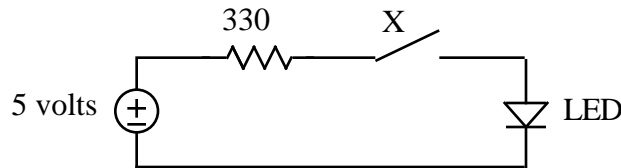


Be sure to add something to your drawing to indicate which way your switch is facing on your board

- b. Then take measurements to complete the following table. **Memorize** your results

Switch	Open/Closed
Left	
Right	

2. Given the following switching circuit



- a. Draw a copy of the circuit for your lab report and then build it with a DIP switch
 - b. Make use of your observations to set up a truth table for the LED for when the DIP switch is CLOSED and when it's OPEN
3. Given the following logic equation

$$\text{LED} = W + X \cdot Y$$

- a. **Prelab** - Calculate the truth table from the logic equation
 - b. **Prelab** - Draw a switching circuit for the logic equation
 - c. Build your circuit with a DIP switch for W, X and Y and then measure its truth table
 - d. Verify that the calculated and measured truth tables for $\text{LED} = W + X \cdot Y$ are the same
4. Repeat Problem (3) for your own logic equation.