HW 1 - Input/Output

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Question 1: Why are we using the 7405-inverter instead of the 7404-inverter?

We use the 7405-inverter because it has an open-collector output and the 7404-inverter has a normal output.

Question 2: How much current will the LED be taking (roughly)?

Ohm’s Law states V=IR, and the 330Ω resistor in this circuit, as well as the resistance from the wires (negligible) and the resistance from the LED’s themselves, each of which is a 1.7 voltage drop. The input voltage is 5 Volts, with each LED forming an independent circuit.

Total resistance is 330, and V = 5-1.7=4.3, so 4.3=I\*330 so the current traveling through each LED is 13.03 milliamps.