

## Lab 4 LEDs

1. Assemble the circuit in Fig. 1:

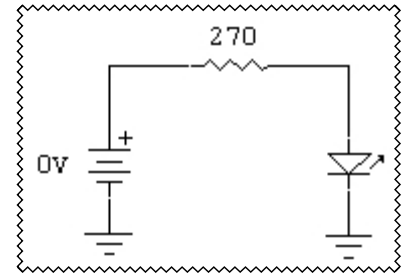


Fig.1

2. Slowly increase the supply voltage to create the currents listed in Table 1 and then complete the table for a Red and Green LED.

3. Table 1 found the typical values for Red and Green LEDs. Find a new value for R1 in the circuit in Fig.2 for both Red and Green LEDs so that the current through the circuit is limited to 10mA. Notice that the supply voltage is 15V.

I mA	V <sub>RED</sub>	V <sub>GREEN</sub>
5mA		
10mA		
15mA		
20mA		

Table 1

4. What is the closest value of current that was achieved in the modified circuit?

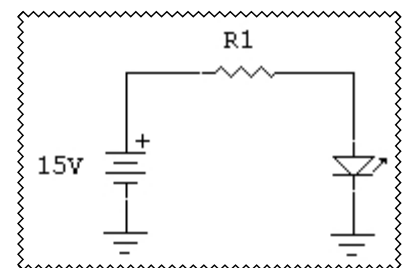


Fig. 2

Seven Segment Display

5. Fig. 3 shows a “typical” common anode 7-segment display. Ground all the segments so that all segments are on. Measure the total current for the circuit. (If the segments are too dim, lower total resistance.)

$I_T =$  \_\_\_\_\_

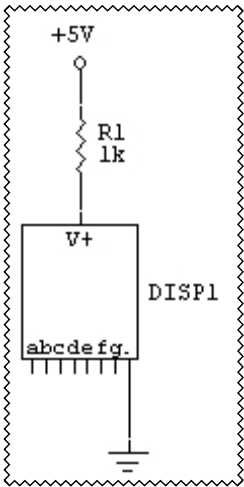


Fig. 3

6. Ground the appropriate segments so that the following hexadecimal symbols are created as in Table 2. Use wire to ground each segment.

Symbol	Segments Grounded
A	
b	
c	
d	
E	
F	

Table 2