LE 2.1 – DA32435 – Dyab Asdi – 19305

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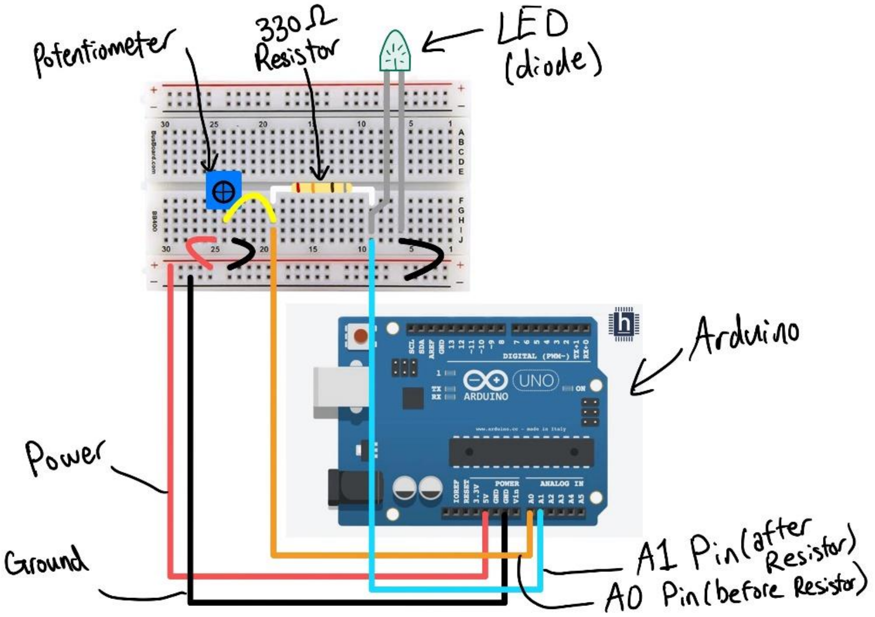
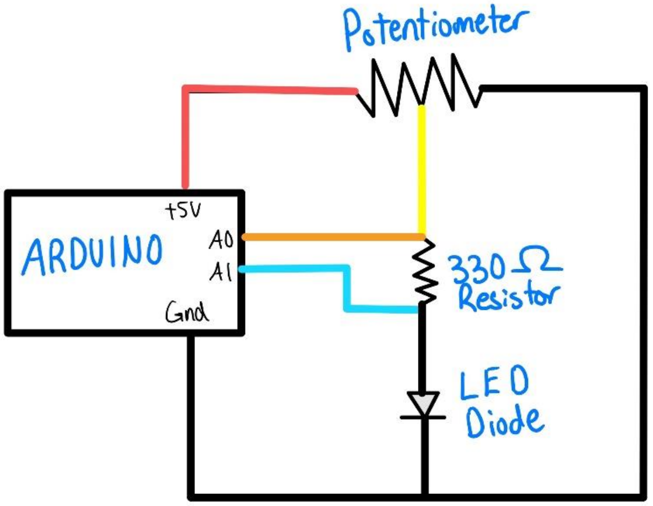
1)

Visual Diagram



Circuit Diagram



2)

LED Color	A0 Voltage	A1 Voltage	Current [mA]	Diode Power [mW]
Red	4.54 V	2.05 V	7.50 mA	15.42 mW
Blue	4.77 V	2.84 V	5.85 mA	16.60 mW
Green	4.66 V	2.05 V	7.91 mA	16.21 mW

Conclusion: Color can be roughly guessed through this method when the current is high enough, but the voltage does not exactly correspond to the color, so it is not an adequate method of discerning the LED color.

Special Considerations: Make sure to add a ";" at the end of each line in C++. The pins on the potentiometer can be easily bent, so place it on the breadboard carefully. Add a delay() function after displaying the values for A0 or A1 so that the data isn't being refreshed so fast that you can't read the values.

Procedure:

1. Designed and created circuit to read voltage before and after resistor (so we can find voltage drop through resistor)
2. Connected Arduino to PC, wrote script to find the voltage drop, current, and diode power
3. Adjusted the potentiometer until the currents were similar to yield the most accurate results and adequate differences in each of the Diode's Power Consumptions
4. Recorded data from Arduino in Table above

3) Arduino/C++ Syntax:

- Void: used for functions that don't return anything
- Int: used to denote an integer data type
- Float: used to denote a float data type, meaning the number can have decimals
- Char: used to denote a string data type, meaning the variable has text
- Bool: used to denote a Boolean data type, meaning that it's value is either True or False
- If: used as a conditional statement with a Boolean indicating whether something is True or False, and the statement inside the "If" will be performed if the Boolean returns True
- Const: used for variables whose values will not be changed after created
- Print: used to display a value, variable, or text
- analogRead: reads value from a determined analog Pin
- analogWrite: writes a value to a determined analog Pin