

**15-348: Embedded Systems**

Fall 2022

**Lab 1: Simple Circuits**

Due: Beginning of lab time on Thursday, August 11, 2022

Part	Quantity
Breadboard	1
5V Power Supply	1
DC Barrel Breakout Adapter	1
LED	3
330 $\Omega$ Resistor	3
Momentary, Push-button switch	2
10 K $\Omega$ Potentiometer	1

## Introduction

The purpose of this lab is to introduce you to the basics of building a circuit on a breadboard. You will construct three different simple circuits.

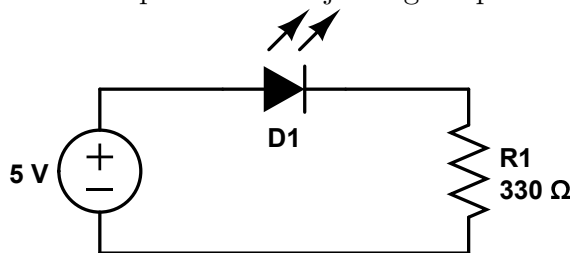
Your final circuits will be evaluated based on both their functionality and the cleanliness of the circuit layout and wiring.

## Circuits

Build the following three circuits. You will need to demonstrate all three at the deadline, so make sure to keep all three working on your breadboard.

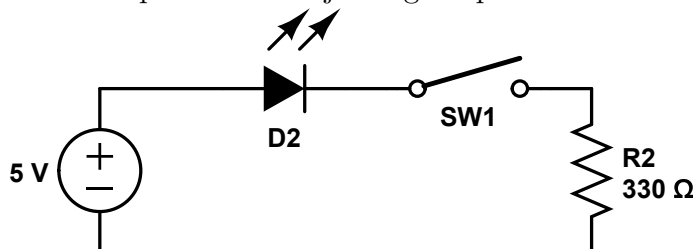
### Circuit 1: Simple LED

Here is a simple circuit to just light up an LED.



### Circuit 2: Simple LED with Switch

Here is a simple circuit to just light up an LED when a button is pushed.



### Circuit 3: Simple LED with Switch and Potentiometer

Here is a simple circuit to just light up an LED when a button is pushed. There is also a potentiometer to let you adjust the LED brightness.

