UNIVERSITY OF NEVADA LAS VEGAS. DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING LABORATORIES.

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Instructor's comments:

Introduction / Theory of operation

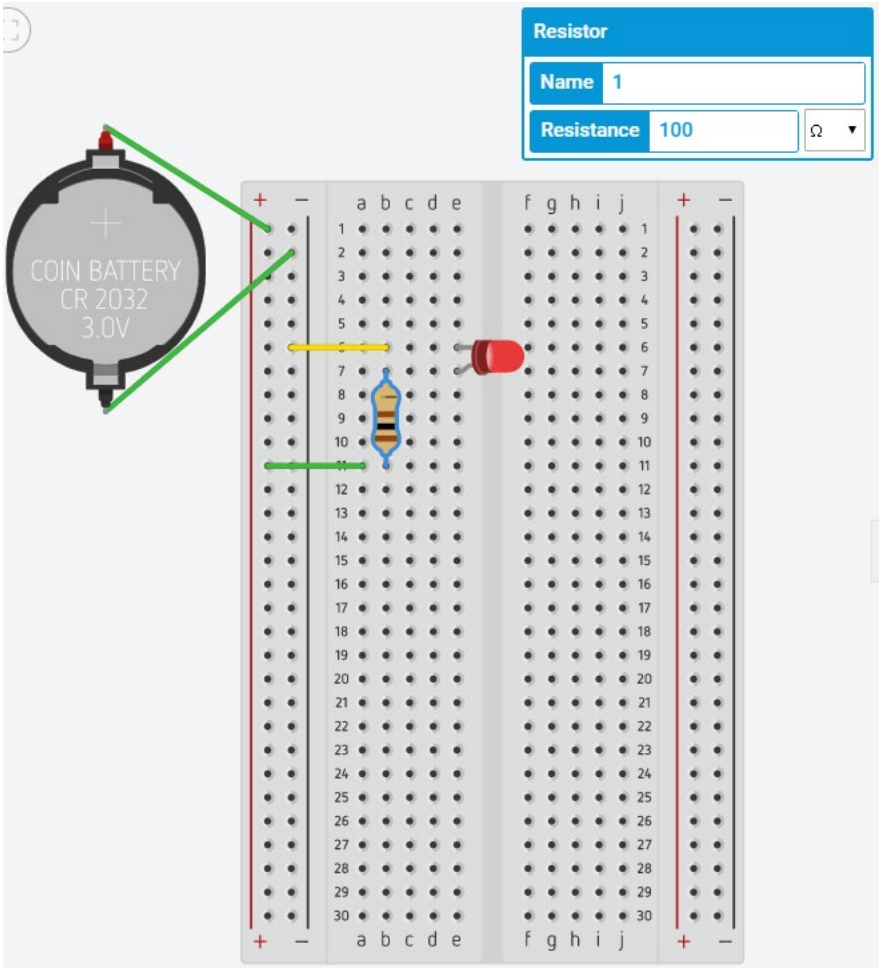
Lab 2 is an introduction to hardware, specifically getting familiar with breadboards, circuits testing, and debugging and multimeter continuity test. This would allow us to build simple circuits and learn about the setup of IC chip and reading the result.

Prelab main content

1) An electronic breadboard is used for those new to electronics and is the best way to start building simple or complex circuits. The anatomy of a breadboard involves binding posts, DIP support, terminal strips, and power rails. The terminal strips are located at the bottom of the breadboard underneath the adhesive. The metal rows have little clips hiding underneath the holes that allow you to stick a wire into the holes on a breadboard. The power rails run vertically along the sides of the breadboard and provides a way to access power in your circuit. The DIP support is a ravine that isolates the two sides of a breadboard so that we can connect components of the integrated circuit without interfering with the functionality on either side of the breadboard. Lastly, the binding posts allow you to connect power sources to the breadboard.

2) A power supply is a hardware component that supplies power. The power supply receives power from an outlet and converts the power from one form to another. Its function is to deliver a constant supply of voltage to an electronic device.

3) A multimeter is used to measure electrical voltage, current, resistance, and other values. It is an instrument that is widely used for testing equipment. It can also be used to test continuity between two points in a circuit.

4) 

5) Explain:

   a. The group of pins on row 6, 7, and 11 are connected together.

   b. The 3V coin battery delivers the voltage to the pin of the LED with the wires. The positive end of the battery connects to the positive rail power rail and the negative end of the battery connects to the negative power rail. The positive power rail powers the green wire on row 11, transfers to terminal 1 and resists the power to the resistor, and then powers the anode from terminal 2. The negative power rail powers the yellow wire on row 6, and then powers the cathode of the LED.