

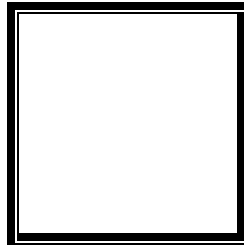


**PAMANTASAN NG LUNGSOD NG MAYNILA**  
(University of the City of Manila)  
Intramuros, Manila

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**Microprocessor Lab**

Laboratory Activity No. 1  
**Familiarization with TinkerCAD**



Score

*Submitted by:*  
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**Sat 10:00AM – 1:00PM / CPE 0412 – 1.1**

*Date Submitted*  
**16-09-2023**

*Submitted to:*  
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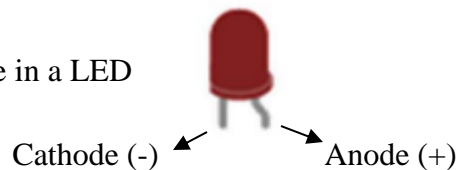
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## 1. Exercise

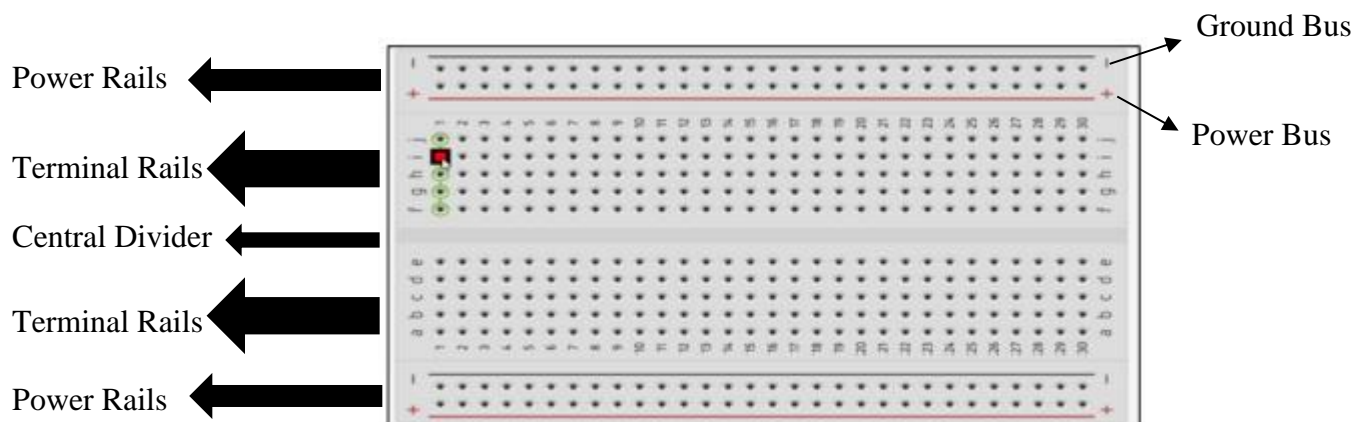
- A process in Tinkercad where we can develop electronic circuits that can be quickly updated, modified and tested is called prototyping.
- In Tinkercad, simulation tests the working of the circuits and the components.
- The device used to assemble and connect the various components is known as breadboard.
- In an electronic circuit with LED, the positive end of the circuit should be connected to anode and negative end should be connected to cathode of the LED.
- A resistor is used to restrict the flow of current to electrical components

## 2. Label the following:

- Anode and Cathode in a LED



- Different parts of breadboard



- List the electronic components used in a circuit assembly
  - Resistor - A component designed to impede or regulate the flow of electrical current.
  - LED - A light source made of semiconductor material that emits light when an electrical current passes through it.
  - Push button - A switch that completes an electrical circuit when pressed and often breaks the circuit when released.
  - Potentiometer - A variable resistor utilized to control the current within a circuit.
  - Capacitor - An electronic component that stores electrical energy in an electric field.
  - Slideswitch - A switch whose handle can be slid into various positions to control the circuit.
  - 9V Battery - A battery supplying an electrical potential of 9 volts.
  - Coin Cell 3V Battery - A compact battery commonly used in small electronic devices, providing 3 volts.
  - 1.5V Battery - A battery offering an electrical potential of 1.5 volts.
  - Breadboard - A tool enabling circuit prototyping without the need for soldering.
  - Micro:bit - A small, versatile microcontroller designed for educational purposes and beginners in electronics.
  - Arduino Uno R3 - An open-source microcontroller board used for creating digital devices and interactive projects.
  - Vibration Motor - A motor that generates vibrations, often used in mobile devices for alerts.
  - DC Motor - A device converting direct current electrical energy into mechanical energy.
  - Micro Servo - A small, motorized device with a controllable output shaft position.

16. Hobby Gearmotor - A motor suitable for hobbyist projects, converting electrical energy into motion.
17. NPN Transistor (BJT) - A type of bipolar junction transistor that permits current flow when a positive voltage is applied to its base.
18. RGB LED - A light-emitting diode capable of producing a range of colors by combining red, green, and blue light.
19. Diode - A semiconductor allowing current flow in only one direction.
20. Photoresistor - A resistor whose resistance changes based on the amount of light it receives.
21. Soil Moisture Sensor - A device measuring the moisture content in soil.
22. Ultrasonic Distance Sensor - A sensor determining distance using ultrasonic waves.
23. PIR Sensor - A motion sensor detecting moving objects, particularly humans, through infrared radiation.
24. Piezo Buzzer - A device generating sound through the piezoelectric effect.
25. Temperature Sensor - A sensor measuring temperature and producing an analog voltage.
26. Multimeter - An instrument used to measure voltage, current, and resistance in electronic circuits.