



**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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**S 10:00AM – 1:00PM / CPE 412.1-1**

*Date Submitted*  
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*Submitted to:*  
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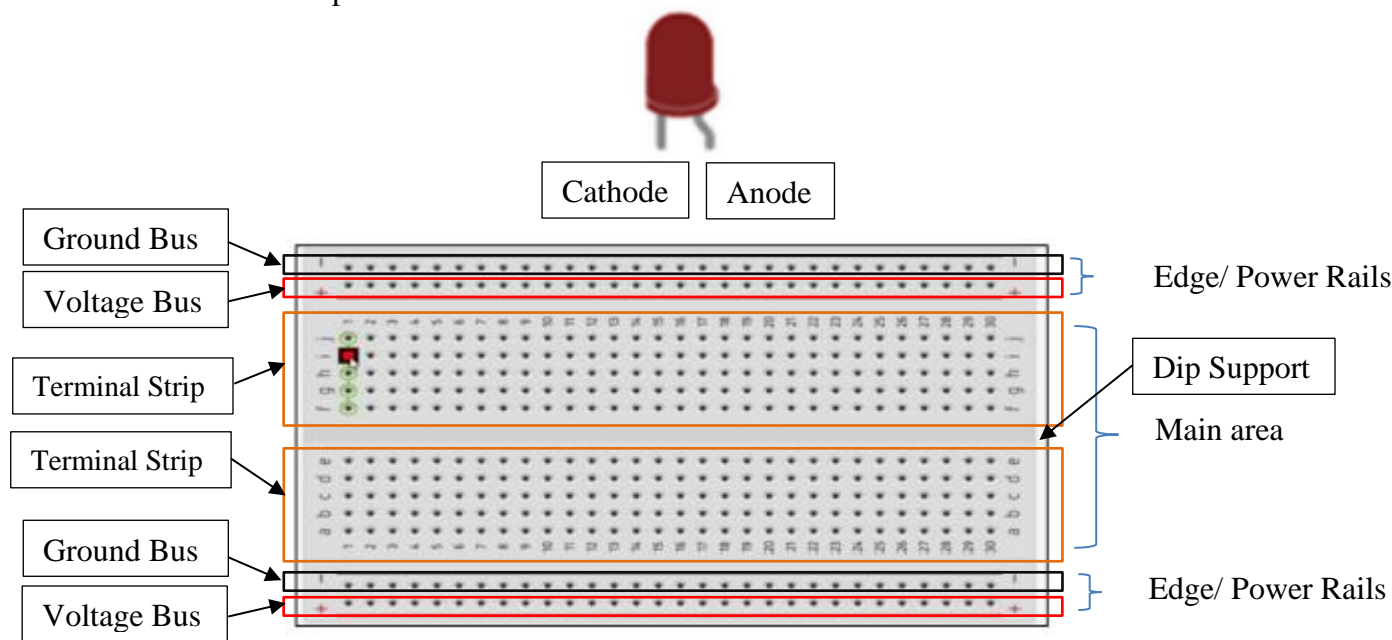
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1. Exercise

- a. A process in Tinkercad where we can develop electronic circuits that can be quickly updated, modified and tested is called Prototyping Process .
- b. In Tinkercad, Start/Stop Simulation tests the working of the circuits and the components.
- c. The device used to assemble and connect the various components is known as breadboard
- d. 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.
- e. A resistor is used to restrict the flow of current to electrical components

2. Label the following:

- a. Anode and Cathode in a LED
- b. Different parts of breadboard



c. List the electronic components used in a circuit assembly

Component	Symbol	Description
Resistor	R	Limits the flow of current in a circuit.
Capacitor	C	Stores and releases electrical energy.
Inductor	L	Stores energy in a magnetic field.
Diode	D	Allows current to flow in one direction only.
Transistor	Q	Amplifies or switches electronic signals.
Integrated Circuit	IC	A compact arrangement of electronic components.
Resistor Network	Rn	Multiple resistors in a single package.
Capacitor Network	Cn	Multiple capacitors in a single package.
Voltage Regulator	VR	Maintains a stable output voltage.
LED (Light Emitting Diode)	LED	Emits light when current flows through it.
Transformer	T	Changes voltage levels in AC circuits.
Relay	K	Electrically controlled switch.
Oscillator	Xtal	Generates a precise frequency signal.
Potentiometer	Pot	Adjustable resistor for voltage control.
Fuse	F	Protects the circuit by breaking when overloaded.
Switch	S	Opens or closes a circuit to control current.
Connector	Conn	Provides a physical connection point.

Component	Symbol	Description
Header	H	Used for connecting wires or components.
Crystal Oscillator	Crystal	Produces a highly stable clock signal.
Battery	Bat	Provides electrical energy for portable devices.
Arduino Uno	-	A popular microcontroller board for prototyping.
Microbit	-	A pocket-sized microcontroller for education.
Servo Motor	-	Precise motor for controlled angular movement.
DC Motor	-	Rotates when voltage is applied.
Photoresistor	-	Light-sensitive resistor that changes resistance with light.
Piezoelectric Buzzer	-	Produces sound when voltage is applied.
Temperature Sensor	-	Measures temperature in the environment.
Ultrasonic Sensor	-	Measures distance using sound waves.
PIR (Passive Infrared) Sensor	-	Detects motion by sensing changes in infrared radiation.
Soil Moisture Sensor	-	Measures moisture content in soil.