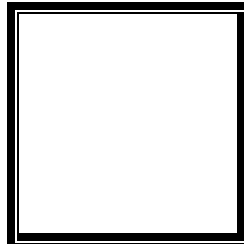




PAMANTASAN NG LUNGSOD NG MAYNILA
(University of the City of Manila)
Intramuros, Manila

Microprocessor Lab

Laboratory Activity No. 1
Familiarization with TinkerCAD



Score

Submitted by:
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<S 10:00am-1:00pm> / <Section 1>

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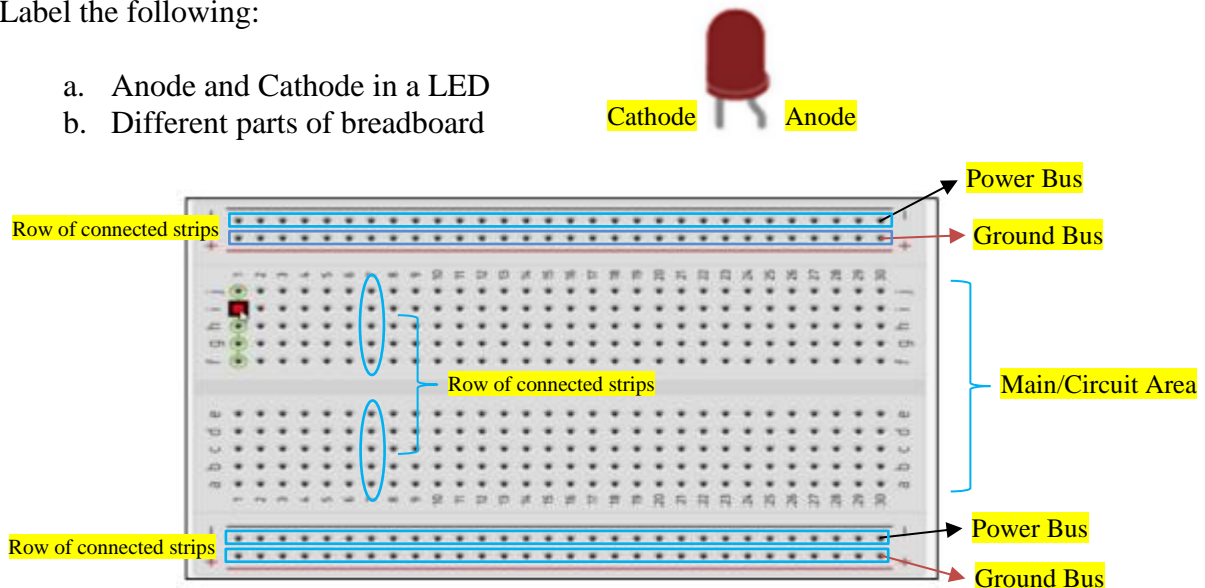
Submitted to:
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1. Exercise

- A process in Tinkercad where we can develop electronic circuits that can be quickly updated, modified, and tested is called a **prototyping process**.
- In Tinkercad, **the Start/Stop 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 device that opposes or limits the flow of electrical current.
 - LED** - A semiconductor light source that emits light when current flows through it.
 - Pushbutton** - A switch that closes a circuit when pressed and often opens it when released.
 - Potentiometer** - A variable resistor used to adjust the current flowing in a circuit.
 - Capacitor** - A component that stores electrical energy in an electric field.
 - Slideswitch** - A switch that operates by sliding its handle into one of several positions.
 - 9V Battery** - A battery that provides 9 volts of electrical potential.
 - Coin Cell 3V Battery** - A compact battery typically used in small electronic devices, delivering 3 volts.
 - 1.5V Battery** - A battery that provides 1.5 volts of electrical potential.
 - Breadboard Small** - A tool that allows for the prototyping of circuits without soldering.
 - Micro:bit** - A compact and versatile microcontroller designed for education and beginners in electronics.
 - Arduino Uno R3** - An open-source microcontroller board used for building digital devices and interactive projects.
 - Vibration Motor** - A motor that creates vibration, commonly used in mobile devices for alerts.
 - DC Motor** - A device that converts direct current electrical energy into mechanical energy.
 - Micro Servo** - A small motor device with an output shaft whose position can be controlled precisely.
 - Hobby Gearmotor** - A motor used for hobbyist projects that turns electrical energy into motion.
 - NPN Transistor (BJT)** - A type of bipolar junction transistor that allows current to flow when a positive voltage is applied to its base.

18. **LED RGB** - A light-emitting diode that can produce a range of colors by combining red, green, and blue light.
19. **Diode** - A semiconductor that allows current to flow in one direction only.
20. **Photoresistor** - A resistor whose resistance changes based on the amount of light it is exposed to.
21. **Soil Moisture Sensor** - A device that measures the moisture content in soil.
22. **Ultrasonic Distance Sensor** - A sensor that measures distance using ultrasonic waves.
23. **PIR Sensor** - A motion sensor that detects moving objects, particularly humans, using infrared radiation.
24. **Piezo Buzzer** - A device that produces sound based on the piezoelectric effect.
25. **Temperature Sensor (TMP36)** - A sensor that measures temperature and outputs an analog voltage.
26. **Multimeter** - An instrument used to measure voltage, current, and resistance in electronic circuits.

REFERENCES:

- Das, S. (2023, August 17). *Electronic components function: Basic components / parts & function*. Electronics Tutorial | The Best Electronics Tutorial Website. <https://www.electronicssandyou.com/blog/electronic-components-parts-and-their-function.html>
- *14 essential electronic components and their functions*. Allied Components International. (n.d.). <https://www.alliedcomponents.com/blog/essential-electronic-components-functions>
- Powerpoint Presentation of Engr. Sayo titled “*Tinkercad 3D Design and Circuit Modelling*”.