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:
Fisalbon, Niccole D.
S 7am-1pm / CPE 0412-1

Date Submitted
16-09-2023

Submitted to:

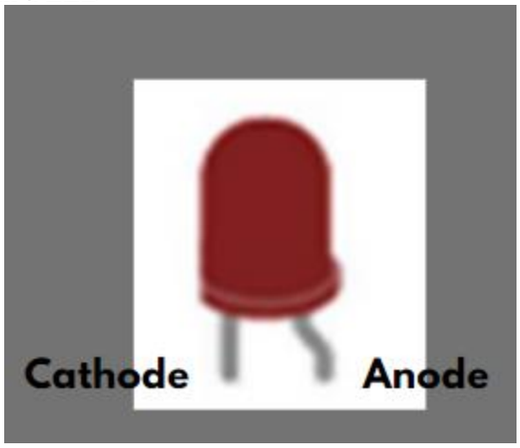
Engr. Maria Rizette H. Sayo

1. Exercise

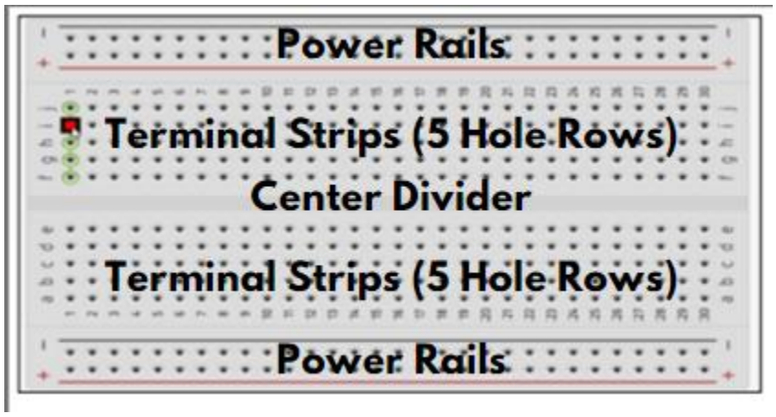
a. A process in Tinkercad where we can develop electronic circuits that can be quickly updated, modified and tested is called Prototyping Process.
b. In Tinkercad, Start/Stop Simulation tests the working of the circuits and the components.
c. The device used to assemble and connect the various components 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

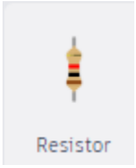


b. Different parts of breadboard



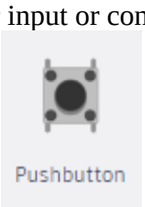
c. List the electronic components used in a circuit assembly

- Resistor- A resistor is an electronic component used to limit the flow of electrical current in a circuit. It is often used to control the brightness of LEDs or set the bias point in transistors.

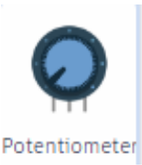


- Led- A LED is a semiconductor device that emits light when current flows through it. LEDs are commonly used for visual indicators and lighting in electronic projects.

- Pushbutton- A pushbutton is a momentary switch that makes or breaks an electrical connection when pressed. It is used for input or control in circuits.



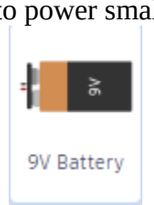
- Potentiometer- A potentiometer, often called a "pot," is a variable resistor with a knob or slider that can be adjusted to change its resistance. It is used for tasks such as volume control and adjusting voltage levels.



- Capacitor: A capacitor is an electronic component that stores and releases electrical energy. It is commonly used to smooth voltage fluctuations and as a timing element in circuits.

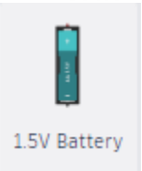
- Slide Switch: A slide switch is a mechanical switch that can be slid into one of two positions to open or close an electrical circuit.

- 9V Battery: A 9V battery is a portable power source that provides 9 volts of direct current (DC) electricity. It is commonly used to power small electronic devices.

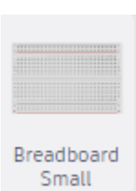


- Coin Cell 3V Battery: A coin cell battery is a small, flat, button-shaped battery typically used in devices like watches and small electronic gadgets. They usually provide 3 volts of power.

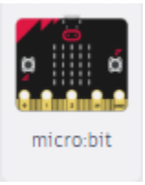
- 1.5V Battery: A 1.5V battery is a common household battery that provides 1.5 volts of DC power. Examples include AA and AAA batteries.



- Breadboard (small): A small breadboard is a platform for prototyping electronic circuits. It allows you to quickly connect and disconnect components and wires for testing and experimentation.

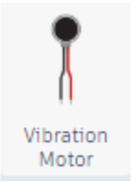


- Micro:bit: The Micro:bit is a small programmable microcontroller board designed for education. It can be programmed to control various components and sensors.

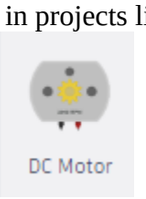


- Arduino UNO R3: The Arduino UNO R3 is a popular microcontroller board used for creating interactive electronic projects. It can be programmed to perform a wide range of tasks.

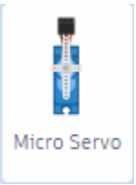
- Vibration Motor: A vibration motor is a small motor that generates vibrations when powered. It is often used for haptic feedback in devices like smartphones and game controllers.



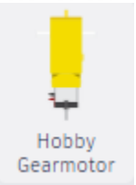
- DC Motor: A DC motor is an electric motor that runs on direct current (DC) and is commonly used for mechanical motion in projects like robotics.



- Micro Servo: A micro servo is a small motor with precise control over its position. It is often used for tasks like controlling the movement of robotic arms and vehicles.



- Hobby Gearmotor: A hobby gearmotor is a type of motor combined with a gearbox to provide specific torque and speed characteristics.



- NPN Transistor: An NPN transistor is a type of bipolar junction transistor used for amplification and switching in electronic circuits.

- LED RGB: An RGB LED is a special type of LED that can emit multiple colors by combining red, green, and blue light.

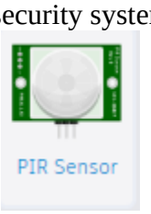
- Diode: A diode is a semiconductor device that allows current to flow in one direction only. It is often used to protect circuits from reverse voltage or as a rectifier.

- Photoresistor: A photoresistor, or LDR (Light-Dependent Resistor), is a resistor whose resistance changes with the amount of light it is exposed to.

- Soil Moisture Sensor: A soil moisture sensor measures the moisture content in soil, commonly used for automated plant watering systems.

- Ultrasonic Distance Sensor: An ultrasonic distance sensor uses sound waves to measure distances and is often used for obstacle detection and distance measurement.

- PIR Sensor: A Passive Infrared (PIR) sensor detects changes in infrared radiation, typically used for motion detection in security systems and automation.



- Piezo: A piezo element is a device that generates vibrations or sounds when an electrical signal is applied to it.

- Temperature Sensor: A temperature sensor measures ambient temperature and can be used for environmental monitoring and climate control.

- Multimeter: A multimeter is a versatile testing tool used to measure various electrical properties, including voltage, current, and resistance.