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 7:00 am – 1:00 pm / CPE 0412

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Submitted to:

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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**.

b. In Tinkercad, **Start/Stop Simulation** tests the working of the circuits and the components.

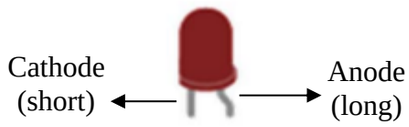
c. The device used to assemble and connect the various components is known as **breadboard** .

d. In an electronic circuit with LED, the positive end of the circuit should be connected to **positive terminal** and negative end should be connected to **negative terminal** of the LED.

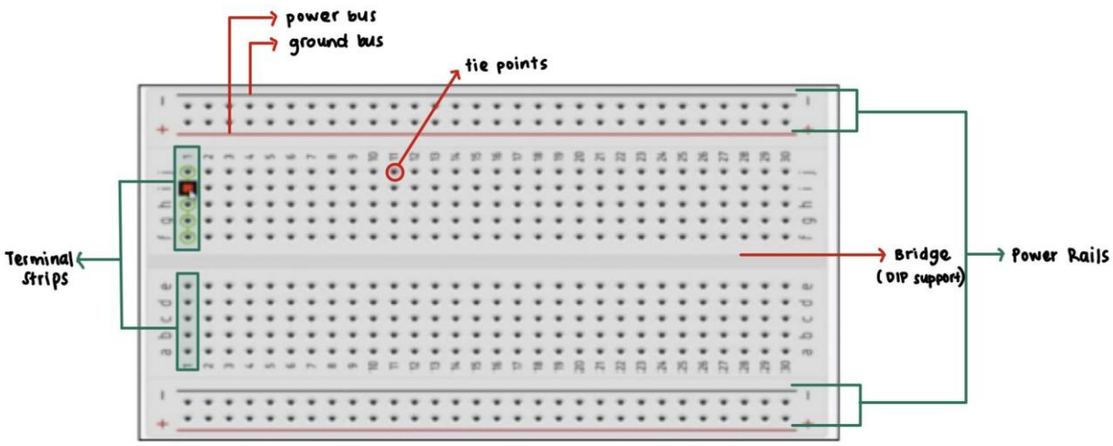
e. A **resistor** is used to restrict the flow of current to electrical components.

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.

1. Resistors – used to limit the flow of current in a circuit and to set specific resistance values.
2. Capacitors – stores and releases electrical energy; used for filtering or timing purposes.
3. Inductors – used as filters or energy storage; stores energy in magnetic field.
4. Diode – allows current to flow in one direction only; used in rectification, voltage regulation, and signal clipping.
5. Transistors – used to amplify or switches electronic signals.
6. Light Emitting Diode (LED) – used to indicate the state of current at any point in a circuit; emits light when current flows through it.
7. Integrated Circuit (IC) – miniaturized electronic circuit that can perform functions such as amplification, logic, or signal processing.
8. Circuit Breaker – mechanical switching device that protects the electrical equipment from short circuit and power surges.
9. Fuse – protects a circuit by breaking the connection when excessive current flows, preventing damage to components.
10. Switch – controls the flow of current in a circuit by either allowing or blocking when toggled.

11. Potentiometer – variable resistor that has an adjustable knob that is used to vary resistance in a circuit.
12. Transformer – it converts voltage levels in AC circuits; used in power supplies and voltage regulation.
13. Electrical Wires and Power Cables – used to make electrical connections between a circuit and electronic devices.
14. Battery – a source of direct current electrical energy used to power portable and off-grid electronic devices.
15. Relay – electromechanical switch that can control a higher power circuit with a lower power input; used for remote control or automation.
16. Motor – converts electrical energy into mechanical energy.
17. Terminals and connectors – components to make electrical connection.