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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10:00am-1:00pm / CPE 0412.1-1

Date Submitted
16-09-2023

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 process.

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

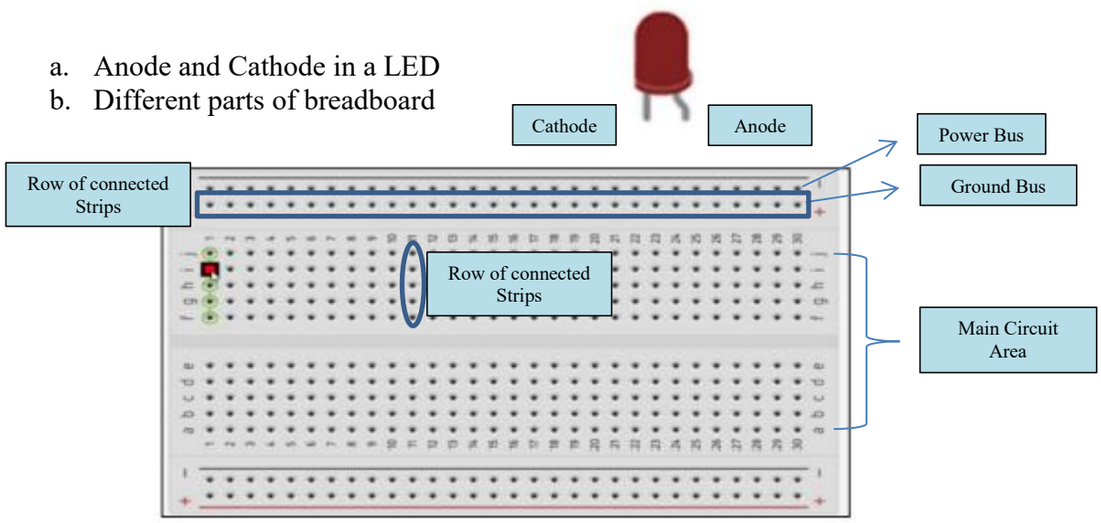
c. The device used to assemble and connect the various components is known as breadboard.

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

1. Resistor: Used to limit the flow of current in a circuit.
2. Capacitor: Stores electrical energy and can release it when needed.
3. Diode: Allows current to flow in one direction only, commonly used in rectification.
4. LED (Light-Emitting Diode): Emits light when current flows through it.
5. Transistor: Amplifies or switches electronic signals.
6. Integrated Circuit (IC): A chip containing multiple interconnected electronic components, often performing complex functions.
7. Inductor: Stores energy in a magnetic field and resists changes in current.
8. Potentiometer: Adjustable resistor used for controlling voltage or current.
9. Switch: Allows you to open or close a circuit manually.
10. Fuse: Protects a circuit by breaking the connection if there is excessive current.
11. Relay: An electromechanical switch controlled by an electrical signal.
12. Transformer: Changes the voltage level of AC (Alternating Current) signals.
13. Battery: Provides a source of electrical energy.
14. Connector: Used to physically join components and wires.
15. Sensor: Detects changes in the environment (e.g., temperature sensor, light sensor).
16. Crystal Oscillator: Generates precise frequencies for timing in digital circuits.
17. Switching Regulator: Converts one voltage level to another efficiently.
18. Fuse: Protects circuits by breaking the connection in case of overcurrent.
19. Voltage Regulator: Maintains a stable output voltage despite variations in input voltage or load.
20. Microcontroller or Microprocessor: A small computer on a chip, used for controlling and processing data in many electronic devices.
21. Resistor Arrays: Multiple resistors packaged together in one component.
22. Capacitor Arrays: Multiple capacitors packaged together in one component.
23. Connector Headers: Used to connect wires and other components on a circuit board.

24. Circuit Board (PCB): Provides a platform for mounting and interconnecting electronic components.
25. Speaker or Buzzer: Produces sound when an electrical signal is applied.
26. LCD Display: Used for visual output in various devices.
27. Photodetector/Photodiode: Converts light into an electrical current.
28. Thermistor: A resistor whose resistance changes with temperature.
29. Pushbutton - A switch that closes a circuit when pressed and often opens it
30. Slideswitch - A switch that operates by sliding its handle into one of several
31. 9V Battery - A battery that provides 9 volts of electrical potential.
32. Coin Cell 3V Battery - A compact battery typically used in small electronic devices, delivering 3 volts.
33. Micro:bit - A compact and versatile microcontroller designed for education
34. Arduino Uno R3 - An open-source microcontroller board used for building digital devices and interactive projects.
35. Vibration Motor - A motor that creates vibration, commonly used in mobile
36. DC Motor - A device that converts direct current electrical energy into mechanical energy.
37. Micro Servo - A small motor device with an output shaft whose position can
38. Hobby Gearmotor - A motor used for hobbyist projects that turns electrical energy into motion.
39. NPN Transistor (BJT) - A type of bipolar junction transistor that allows current to flow when a positive voltage is applied to its base.
40. Photoresistor - A resistor whose resistance changes based on the amount of light it is exposed to.
41. Soil Moisture Sensor - A device that measures the moisture content in soil.
42. Ultrasonic Distance Sensor - A sensor that measures distance using ultrasonic waves.
43. PIR Sensor - A motion sensor that detects moving objects, particularly humans, using infrared radiation.
44. Piezo Buzzer - A device that produces sound based on the piezoelectric effect.
45. Temperature Sensor (TMP36) - A sensor that measures temperature and outputs an analog voltage.
46. Multimeter - An instrument used to measure voltage, current, and resistance in electronic circuits.