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, 10:00 AM – 1:00 PM / CPE 0412.1-1

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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**.

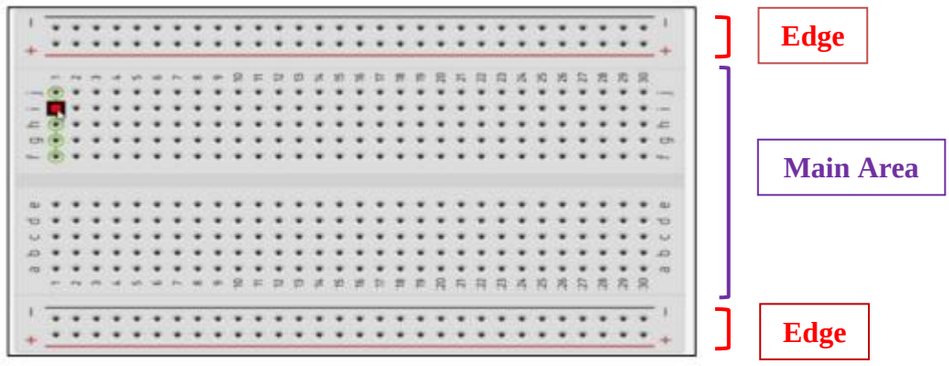
d. In an electronic circuit with LED, the positive end of the circuit should be connected to **anode** and negative end should be connected to **cathode** of the LED.

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

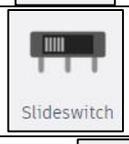
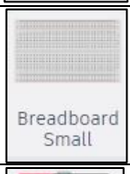
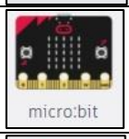
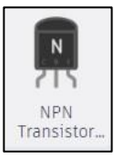
b. Different parts of breadboard

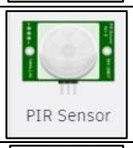
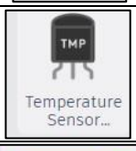


c. List the electronic components used in a circuit assembly

Components labeled under “Basic” category in Tinkercad include:

Component	Description	Tinkercad
Resistor	- Resists the flow of current, resulting in decrease in voltage and current.	
LED	- Produces light upon passing of electricity in right direction.	
Pushbutton	- Connects two points upon pressing.	

Potentiometer	- A type of resistor that makes use of a knob to vary resistance.	
Capacitor	- Stores and releases energy.	
Slideswitch	- A switch that can be assigned either open or closed.	
Battery (1.5V, Coin Cell 3V, 9V)	- 9V: supplies energy for higher power applications - Coin Cell 3V: for low power components such as LEDs - 1.5V: also referred to as standard AA or AAA batteries	  
Breadboard	- Allows assembly and connection of various electrical components.	
micro:bit	- A programmable board utilize in creation of interactive circuits.	
Arduino Uno R3	- A board that can load programs to incorporate with circuits.	
Vibration Motor	- A motor that vibrates when energy pass through.	
DC Motor	- Motor that converts electrical energy to mechanical energy.	
Micro Servo	- A motor that can be rotated using a microcontroller.	
Hobby Gearmotor	- A geared motor that offers torque at low speed to drive robot wheels.	
NPN Transistor (BJT)	- Used to amplify or switch or switch electronic signals; transfers weak signal from low to high resistance circuit.	
LED RGB	- Combination of Red, Green, and Blue to produce any color,	
Diode	- Conducts electricity in only one direction.	

Photoresistor	- Sensor that varies its resistance depending on detected amount of light.	
Soil Moisture Sensor	- Measures water content present in the soil.	
Ultrasonic Distance Sensor	- Emits ultrasonic sound waves to measure distance from target.	
PIR Sensor	- Component used to detect motion through reception of infrared radiation.	
Piezo	- A buzzer that produces noise at varying frequencies.	
Temperature Sensor (TMP 36)	- Produces voltage output proportional to the Celsius temperature.	
Multimeter	- Used to measure voltage, resistance, and current in a circuit.