CG1108 – Lab 2 : KVL and KCL Verification

	Activities Completed	Verified By	Marks From 3
Name:_____	**a**		
	b		
Matric. No._____	**c**		
	d		
Group:_____	**e**		

1. Objectives of the Experiment

a) To build circuits on breadboard from circuit schematics.
b) To apply and verify KVL and KCL.

2. Equipment to be used

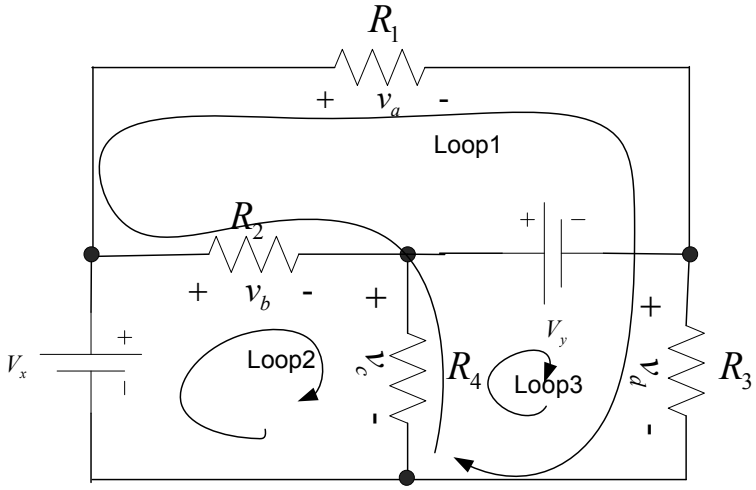
- Lab DC power supply
- Digital multi-meter
- Breadboard

3. Components

- Resistors

In-lab activities

a) **Pick four resistors from the component rack and build the circuit on the bread-board according to the schematic**. You may choose the source voltages yourself. (Please ask the GA to check your circuit after you have completed the circuit.)



Note down the values of the voltage sources and the resistors :

V_x = V_y =

R_1 = R_2 = R_3 = R_4 =

Measure the voltages using the multimeter and note down below**:**

V_a = V_b = V_c = V_d =

Write <u>KVL</u> equations for the following loops and verify that KVL is satisfied.

Loop 1:

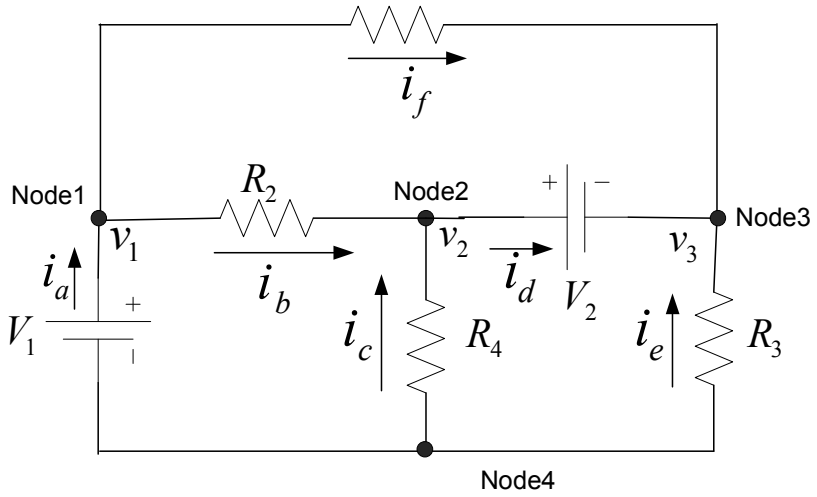
Loop 2:

Loop 3:

<u>Conclusion:</u>

b) For the same circuit as in (a), **measure the current in each branch using the multimeter**.

(Connect the ammeter and ask the GA to check before you power up the circuit.)



i_a= i_b= i_c=

i_d= i_e= i_f=

Write <u>KCL</u> equations for the following loops and verify that KCL is satisfied.

Node 1:

Node 2:

Node 3:

Node 4:

<u>Conclusion:</u>

c) **Measure the node voltages v1, v2, v3 with respect to ground** and note them down. (Assume Node 4 is ground.)

v_1= v_2= v_3=

Calculate the currents using the node voltages and the resistor values.

I_a= I_b= I_c=

I_d= I_e= I_f=

Conclusion:

(Compare the calculated currents in part (c) with the measured currents in part (b).)