ASSIGNMENT 1 - PROGRAMMING TECHNIQUE 1 (SECJ1013)
SECTION 07, SEM 1 (2024/2025)

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1. OHM'S LAW CALCULATOR

The purpose of this calculator is to solve calculations related to The Ohm's Law whether to find the voltage (V), current (I), resistant (R) or power (P). These are the following formulas related to the law:

V = IR	P = I^2 x R
R = I/V	P = IV
I = V/R	P = V^2 /R

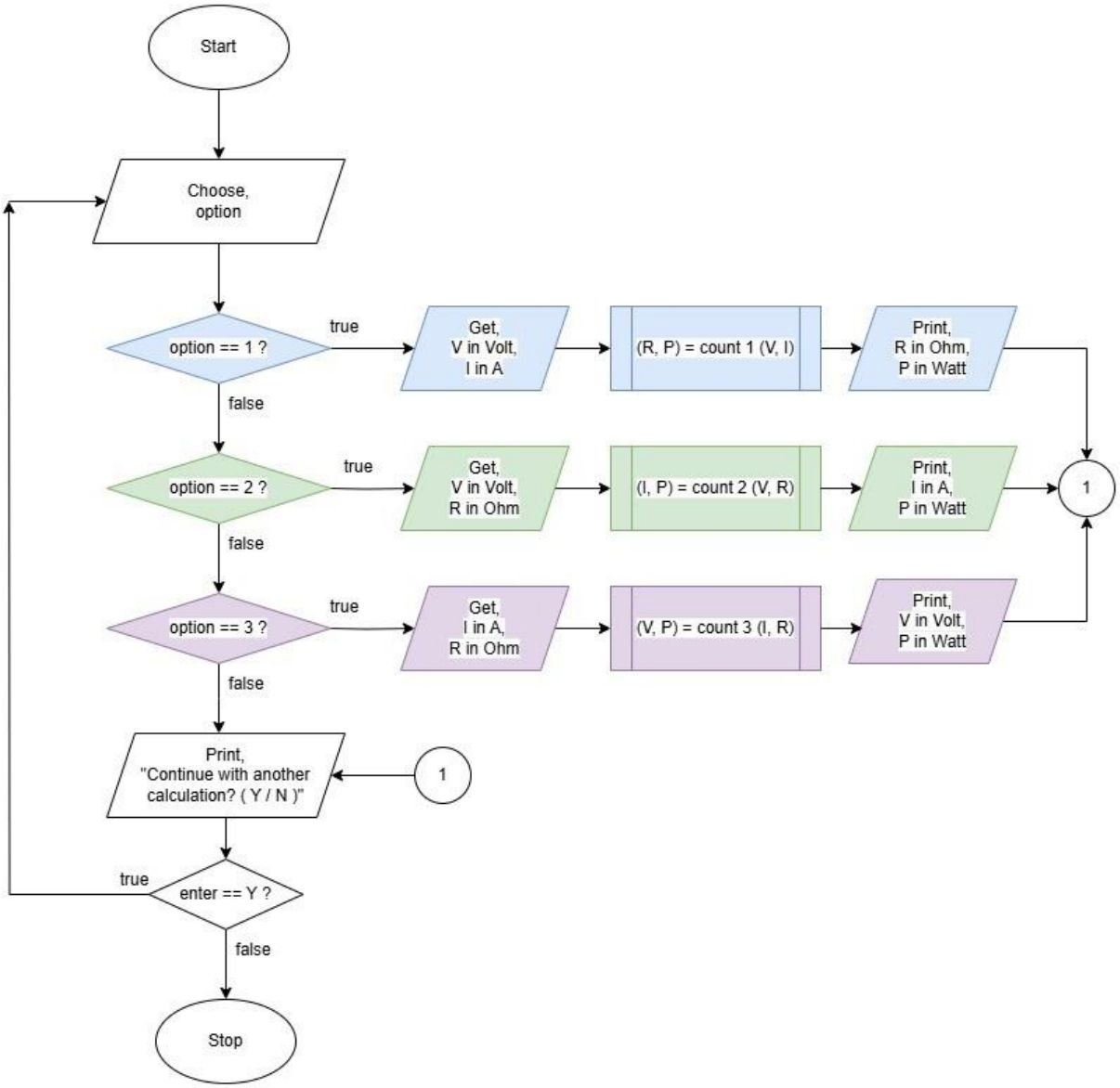
For this calculator specifically, only the SI unit will be used to express each value. Thus, the user must give the input in SI unit as the output will be display in SI unit.

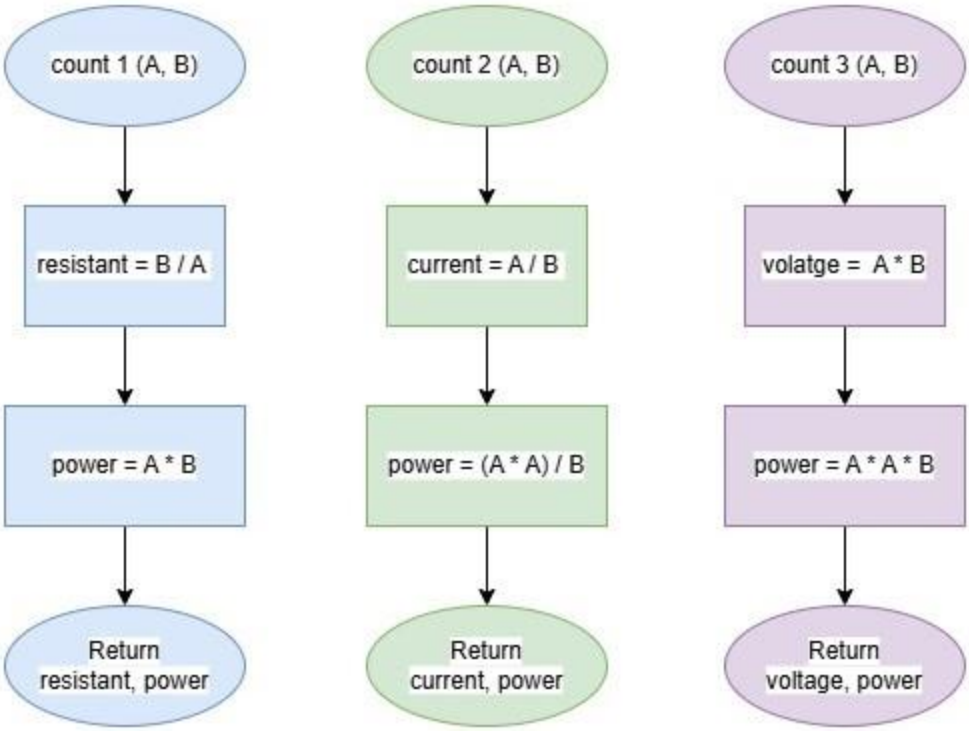
Voltage: Volts
Current: Ampere/A
Resistant: Ohm
Power: Watt

There are three options for the user to choose based on the calculation that they wanted to solve.

Option 1 – To find the resistant and power
Option 2 – To find the current and power
Option 3 – To find the voltage and power

2. FLOWCHART


Start
Choose, option
option == 1 ?
true
Get, V in Volt, I in A
(R, P) = count 1 (V, I)
Print, R in Ohm, P in Watt
false
option == 2 ?
true
Get, V in Volt, R in Ohm
(I, P) = count 2 (V, R)
Print, I in A, P in Watt
1
false
option == 3 ?
true
Get, I in A, R in Ohm
(V, P) = count 3 (I, R)
Print, V in Volt, P in Watt
false
Print, "Continue with another calculation? (Y / N)"
1
true
enter == Y ?
false
Stop


count 1 (A, B)
resistant = B / A
power = A * B
Return
resistant, power
count 2 (A, B)
current = A / B
power = (A * A) / B
Return
current, power
count 3 (A, B)
volatge = A * B
power = A * A * B
Return
voltage, power

3. EXAMPLE

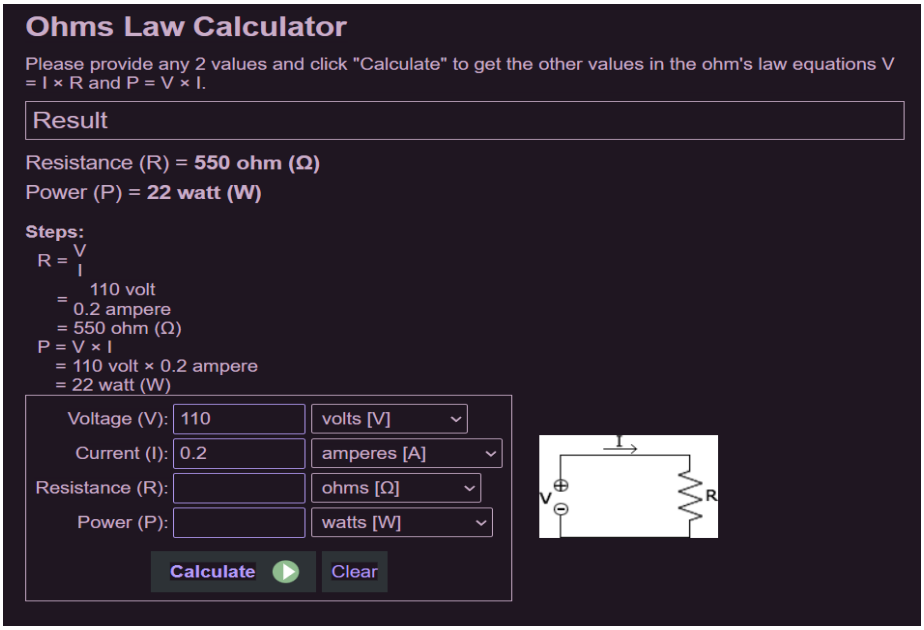


Figure 1: Ohm's Law Calculator application
(***Source***: *https://www.calculator.net/ohms-law-calculator.html*)

```
Ohm's Law Calculator

    1.  Find resistant and power
    2.  Find current and power
    3.  Find voltage and power

Select Option [1 @ 2 @ 3]: 1

Voltage (Volts): 240
Current (A): 5

R=V/I
   =240/5
   =48

Resistant= 48 Ohm

P=V x I
  =240 x 5
  =1200

Power= 1200 Watt

Continue with another calculation? [Y @ N]: N

Thank you!
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Figure 2: The example of inputs and outputs