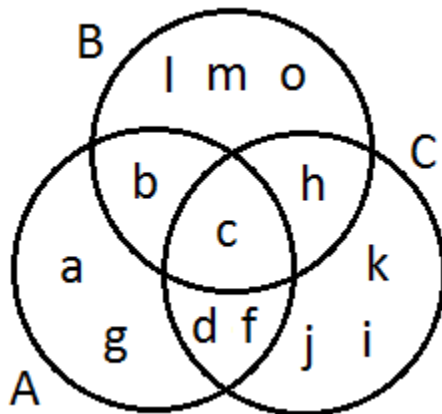


<b>Name:</b> Julius Francis G. De Leon	<b>Laboratory Activity 4B:</b> Set and Dictionary
<b>Section:</b> TW24	<b>Date:</b> March 04, 2025

1. Use set operations to write the equivalent syntax that will show the needed output as given from the following statements given the figure below.



# These are the sets of elements in PROBLEM 1

A = {'a', 'b', 'c', 'd', 'f', 'g'}

B = {'b', 'c', 'h', 'l', 'm', 'o'}

C = {'c', 'd', 'f', 'h', 'i', 'j', 'k'}

- a. How many elements are there in set A and B?

**Input:**

```
# How many elements are there in set A and B?
print(f"Number of elements in A and B: {len(A & B)}")
```

**Output:**

```
Number of elements in A and B: 2
```

- b. How many elements are there in B that is not part of A and C?

**Input:**

```
# How many elements are there in B that are not part of A and C?
print(f"Number of elements in B that are not part of A and C: {len(B - (A | C))}")
```

**Output:**

```
Number of elements in B that are not part of A and C: 3
```

c. Show the following using set operations

**Input:**

```
# Show the following using set operations
# [h, i, j, k]
print(f" 1. {sorted(C - A)}")

# [c, d, f]
print(f" 2. {sorted(A & C)}")

# [b, c, h]
print(f" 3. {sorted(B & (A | C))}")

# [d, f]
print(f" 4. {sorted((A & C) - B)}")

# [c]
print(f" 5. {sorted(A & B & C)}")

# [l, m, o]
print(f" 6. {sorted(B - (A | C))}")
```

**Output:**

```
1. ['h', 'i', 'j', 'k']
2. ['c', 'd', 'f']
3. ['b', 'c', 'h']
4. ['d', 'f']
5. ['c']
6. ['l', 'm', 'o']
Press ENTER to continue...
```

2. Given the file `currency.csv` (currency exchange from 1 USD), create a program that will convert a certain input currency given the dollar to be converted.

### Example Output

How much dollar do you have? 100

What currency you want to have? PHP

Dollar: 100 USD

Philippine Peso: 5481.472580697

### Source Code:

```
# =====
# PYTHON PROGRAMMING (Laboratory Activity 4B: Set and Dictionary)
# Submitted by: JULIUS FRANCIS DE LEON
# Date: March 04, 2025
# =====

# Code starts HERE!!!
import csv

# Define the filename for the currency exchange rates
filename = "currency.csv"

# Print the program header
print("
>>> CURRENCY EXCHANGE CALCULATOR <<<
by Julius Francis De Leon
")

# Load currency exchange rates from the CSV file
exchange_rates = {}
try:
    with open(filename, mode='r', encoding='latin-1') as file:
        reader = csv.reader(file)
        next(reader) # Skip the header row
        for row in reader:
            if len(row) == 3: # Ensure the row has exactly 3 columns
                code, name, rate = row
                exchange_rates[code.strip().upper()] = {
                    "name": name.strip(),
                    "rate": float(rate),
                }
            else:
                print(f"Warning: Skipping invalid row: {row}")
except FileNotFoundError:
    print(f" Error: The file '{filename}' was not found.")
    exit()
except Exception as e:
    print(f" An error occurred while reading the file: {e}")
    exit()

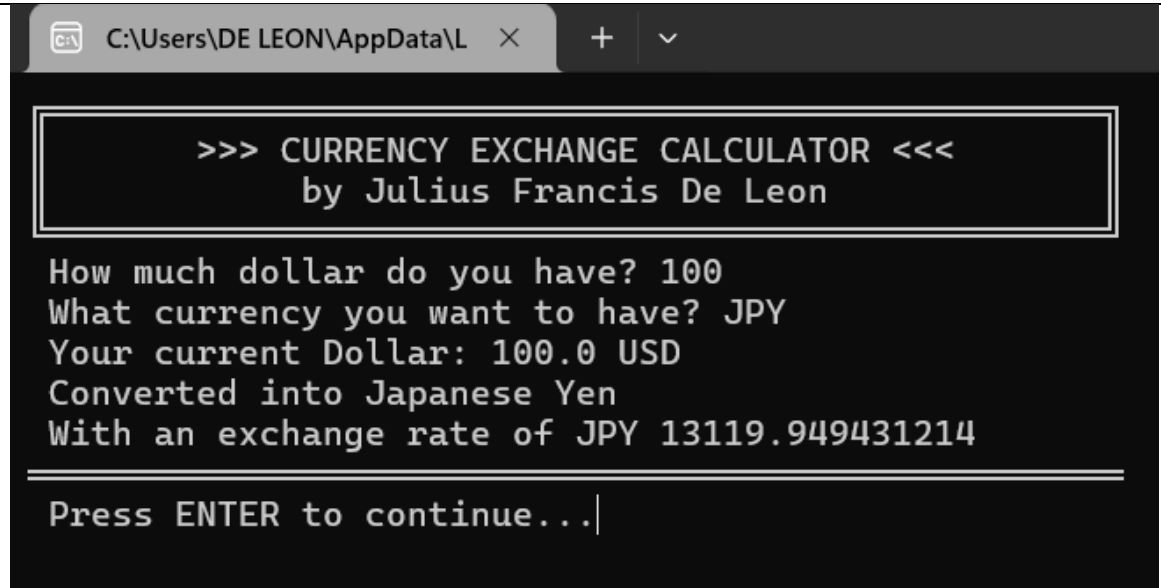
# Get user input for the amount and target currency
try:
    amount = float(input(" How much dollar do you have? "))
    currency = input(" What currency you want to have? ").strip().upper()

    # Perform the conversion
    if currency in exchange_rates:
        converted_amount = amount * exchange_rates[currency]["rate"]
        currency_name = exchange_rates[currency]["name"] # Retrieve currency name
        print(f" Your current Dollar: {amount} USD")
```

```
print(f" Converted into {currency_name} \n With an exchange rate of {currency}
{converted_amount:.2f}")
print("=====")
else:
    print(f"\nError: Currency '{currency}' is not supported.")
except ValueError:
    print("Error: Please enter a valid number for the dollar amount.")

input(" Press ENTER to continue...")
```

## Output



The screenshot shows a Windows command prompt window with a single tab titled "C:\Users\DE LEON\AppData\L". The window has a dark background and white text. The output of the program is as follows:

```
>>> CURRENCY EXCHANGE CALCULATOR <<<
      by Julius Francis De Leon

How much dollar do you have? 100
What currency you want to have? JPY
Your current Dollar: 100.0 USD
Converted into Japanese Yen
With an exchange rate of JPY 13119.949431214

=====
Press ENTER to continue...|
```