ASSIGNMENT - 4.3

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Batch-10

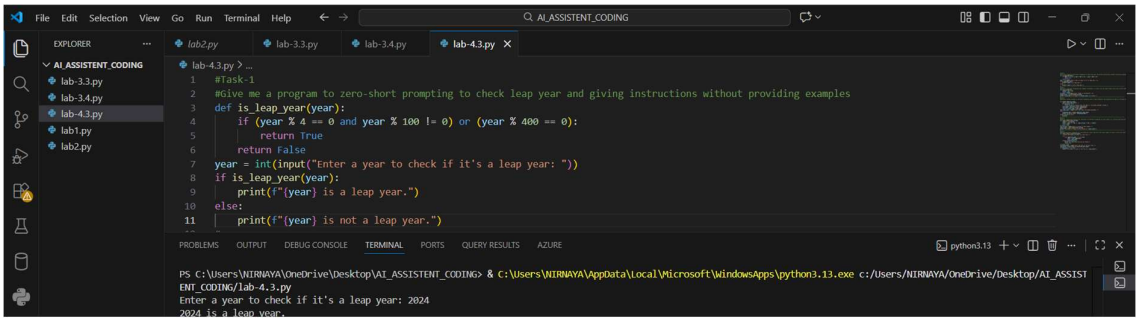
Task-1

Prompt: Give me a program to zero-short prompting to check a leap year, and give instructions without providing examples

code :

```
def is_leap_year(year):
    if (year % 4 == 0 and year % 100 != 0) or (year % 400 == 0):
        return True
    return False
year = int(input("Enter a year to check if it's a leap year: "))
if is_leap_year(year):
    print(f"{year} is a leap year.")
else:
    print(f"{year} is not a leap year.")
```

Output :



Code Analysis:

- This program determines whether a given year is a leap year using a function.
- The function applies standard leap year rules and returns True or False.
- The user inputs a year, which is checked by the function.
- The result is printed as either a leap year or not.

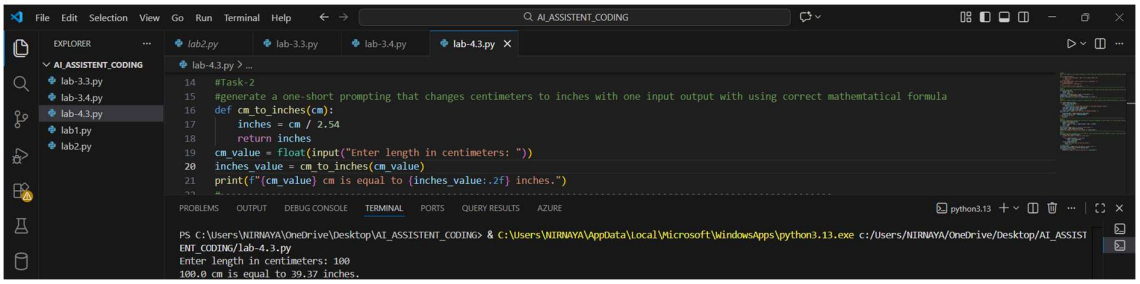
Task-2

Prompt: generate a one-short prompt that changes centimetres to inches with one input and output using the correct mathematical formula

Code :

```
def cm_to_inches(cm):
    inches = cm / 2.54
    return inches
cm_value = float(input("Enter length in centimeters: "))
inches_value = cm_to_inches(cm_value)
print(f"{cm_value} cm is equal to {inches_value:.2f} inches.")
```

Output :



Code Analysis:

- This program converts a length from centimetres to inches using the correct mathematical formula.
- A function performs the conversion by dividing the value by 2.54.
- The user enters a value in centimetres, which is passed to the function.
- The converted result is displayed in inches.

Task-3

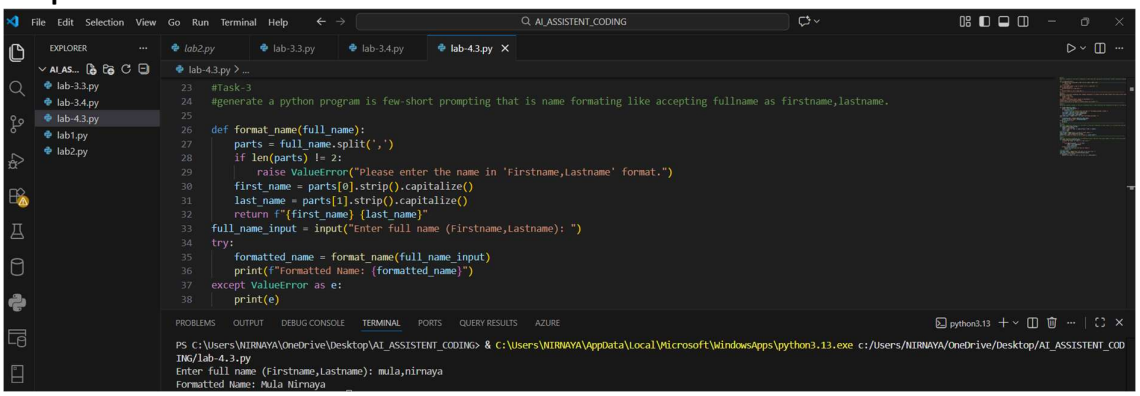
Prompt: generate a python program is few-short prompting that is name formating like accepting fullname as firstname,lastname.

Code :

```
def format_name(full_name):
    parts = full_name.split(',')
    if len(parts) != 2:
        raise ValueError("Please enter the name in 'Firstname,Lastname' format.")
    first_name = parts[0].strip().capitalize()
```

```
    last_name = parts[1].strip().capitalize()
    return f"{first_name} {last_name}"
full_name_input = input("Enter full name (Firstname,Lastname): ")
try:
    formatted_name = format_name(full_name_input)
    print(f"Formatted Name: {formatted_name}")
except ValueError as e:
    print(e)
```

Output:



Code Analysis :

- This program formats a full name entered as first name and last name.
- The input is split and validated to ensure the correct format.
- Each part of the name is cleaned and capitalised.
- The formatted full name is then displayed.

Task-4

Prompt: generate a comparative analysis for zero-short vs few-short prompting to count vowels in a string using a function

Code :

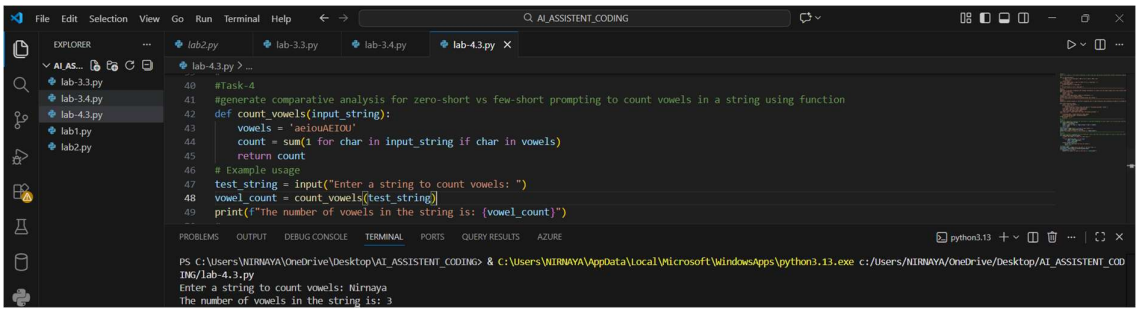
```
def count_vowels(input_string):
    vowels = 'aeiouAEIOU'
    count = sum(1 for char in input_string if char in vowels)
    return count
# Example usage
```

test_string = input("Enter a string to count vowels: ")

vowel_count = count_vowels(test_string)

print(f"The number of vowels in the string is: {vowel_count}")

Output:



Code Analysis :

- The function counts vowels in a given string using a direct logic approach.
- Zero-shot prompting applies the logic without examples.
- Few-shot prompting helps by showing patterns before execution.
- The function returns the total number of vowels in the input string.

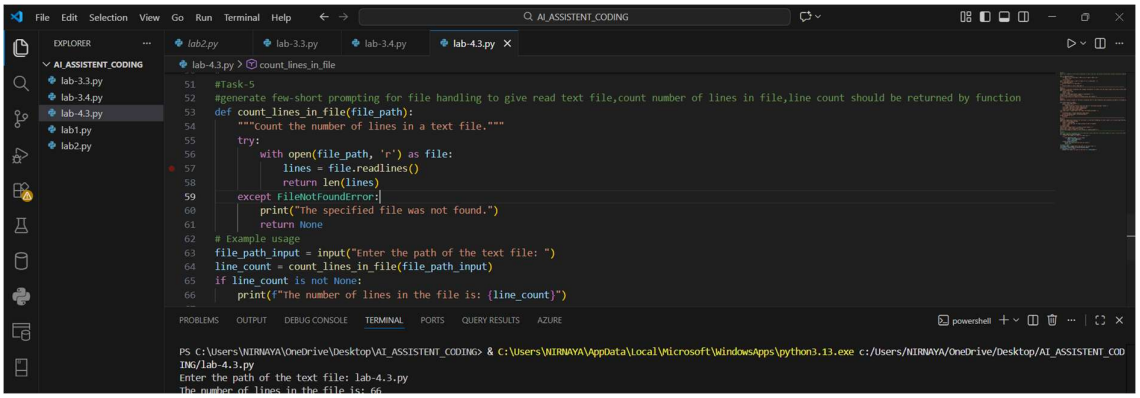
Task-5

Prompt: generate a few short prompts for file handling to give a read text file, count the number of lines in the file, and line count by function

```
def count_lines_in_file(file_path):
    try:
        with open(file_path, 'r') as file:
            lines = file.readlines()
            return len(lines)
    except FileNotFoundError:
        print("The specified file was not found.")
        return None
# Example usage
file_path_input = input("Enter the path of the text file: ")
line_count = count_lines_in_file(file_path_input)
if line_count is not None:
```

print(f"The number of lines in the file is: {line_count}")

Output :



Code Analysis :

- This program reads a text file and counts the number of lines.
- A function opens the file safely and calculates the line count.
- Error handling is used if the file does not exist.
- The final line count is returned and displayed.