ASSIGNMENT - 4.3

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Batch-10

Task-1

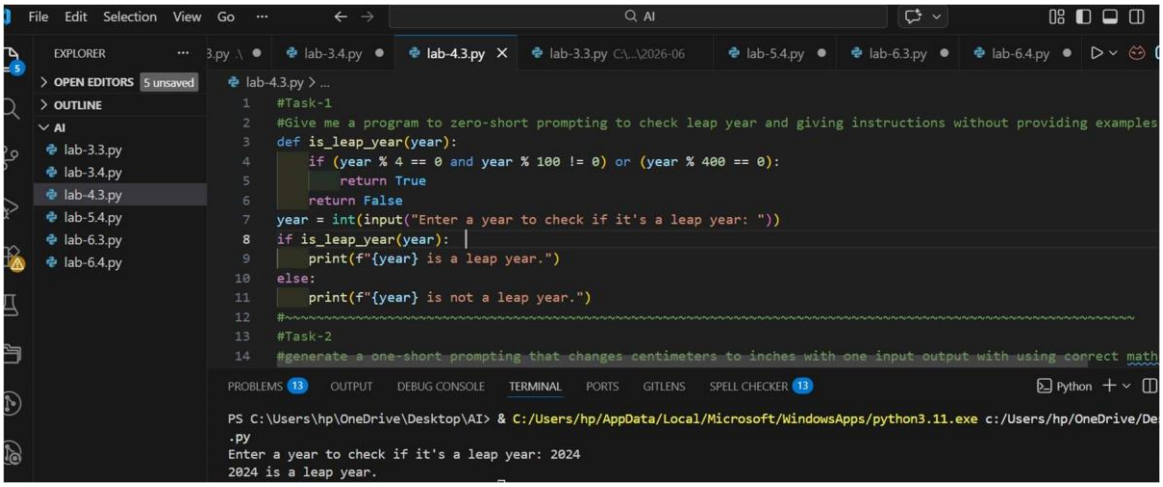
Prompt: Give me a program to zero-short promp ng to check a leap year, and give instructions without providing examples code :

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):

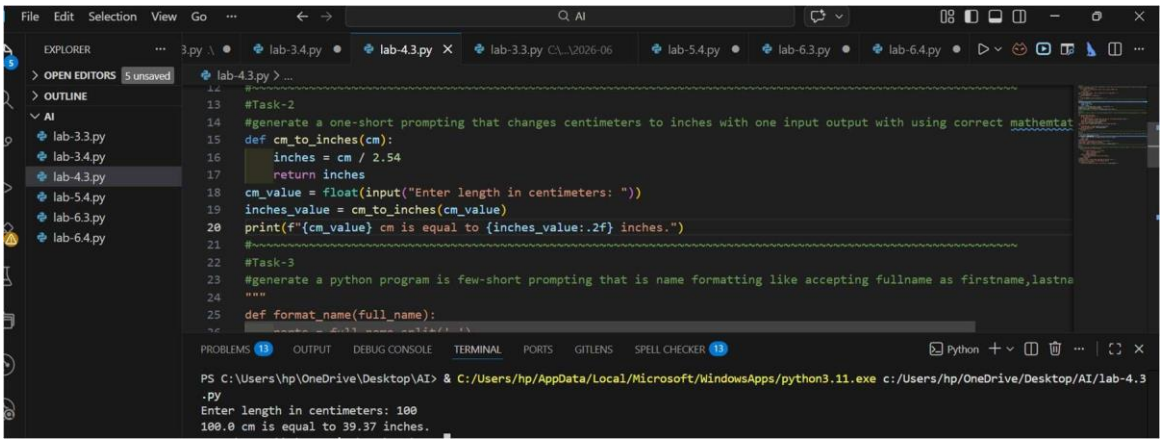
inches = cm / 2.54 return inches cm_value =

float(input("Enter length in cen meters: "))

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 promp ng that is name forma ng like accep ng 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

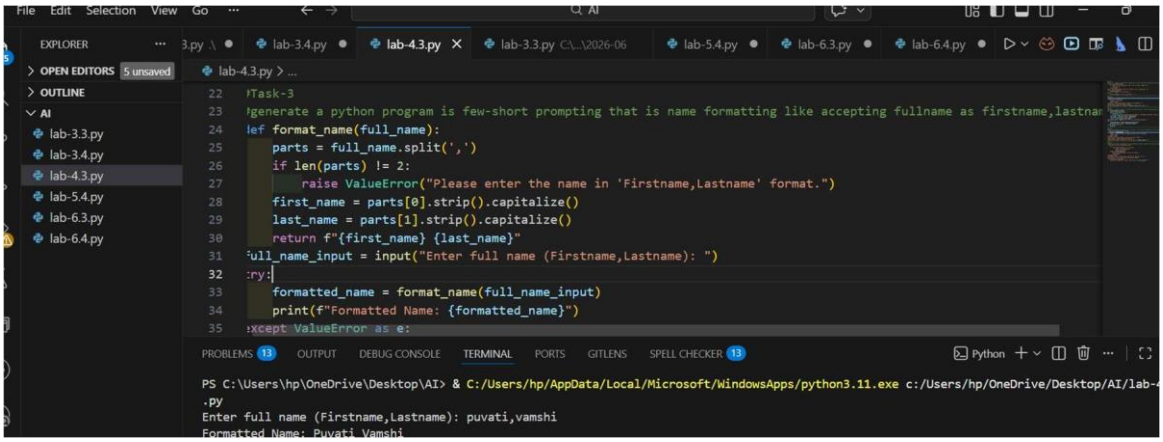
(Firstname,Lastname): ")

try:

forma ed_name = format_name(full_name_input) print(f"Forma

ed Name: {forma ed_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 forma ed full name is then displayed.

Task-4

Prompt: generate a compara ve analysis for zero-short vs few-short promp ng to count vowels in a string using a function:

Code :

def count_vowels(input_string): vowels = 'aeiouAEIOU' count

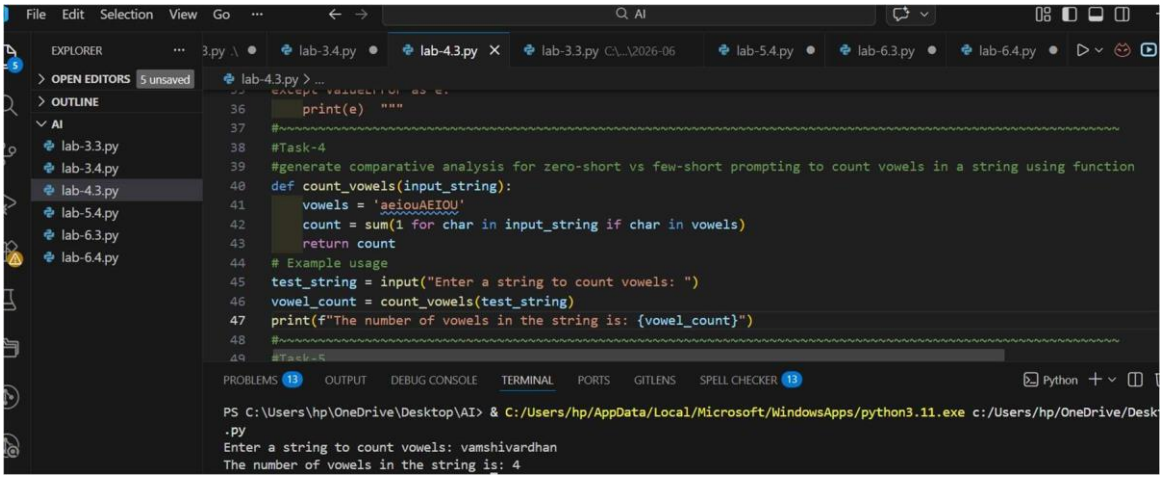
= sum(1 for char in input_string if char in vowels) return count

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

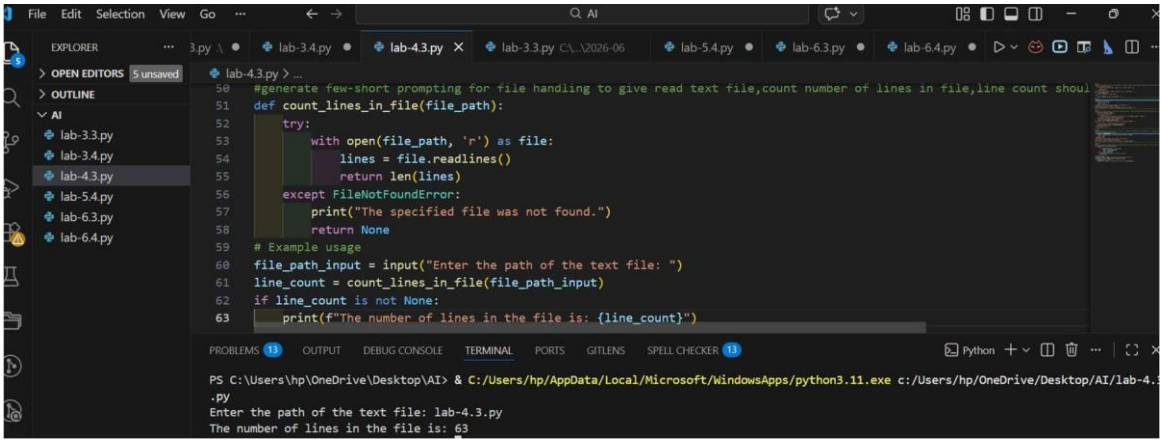
of the text file: ") line_count =

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.