Report

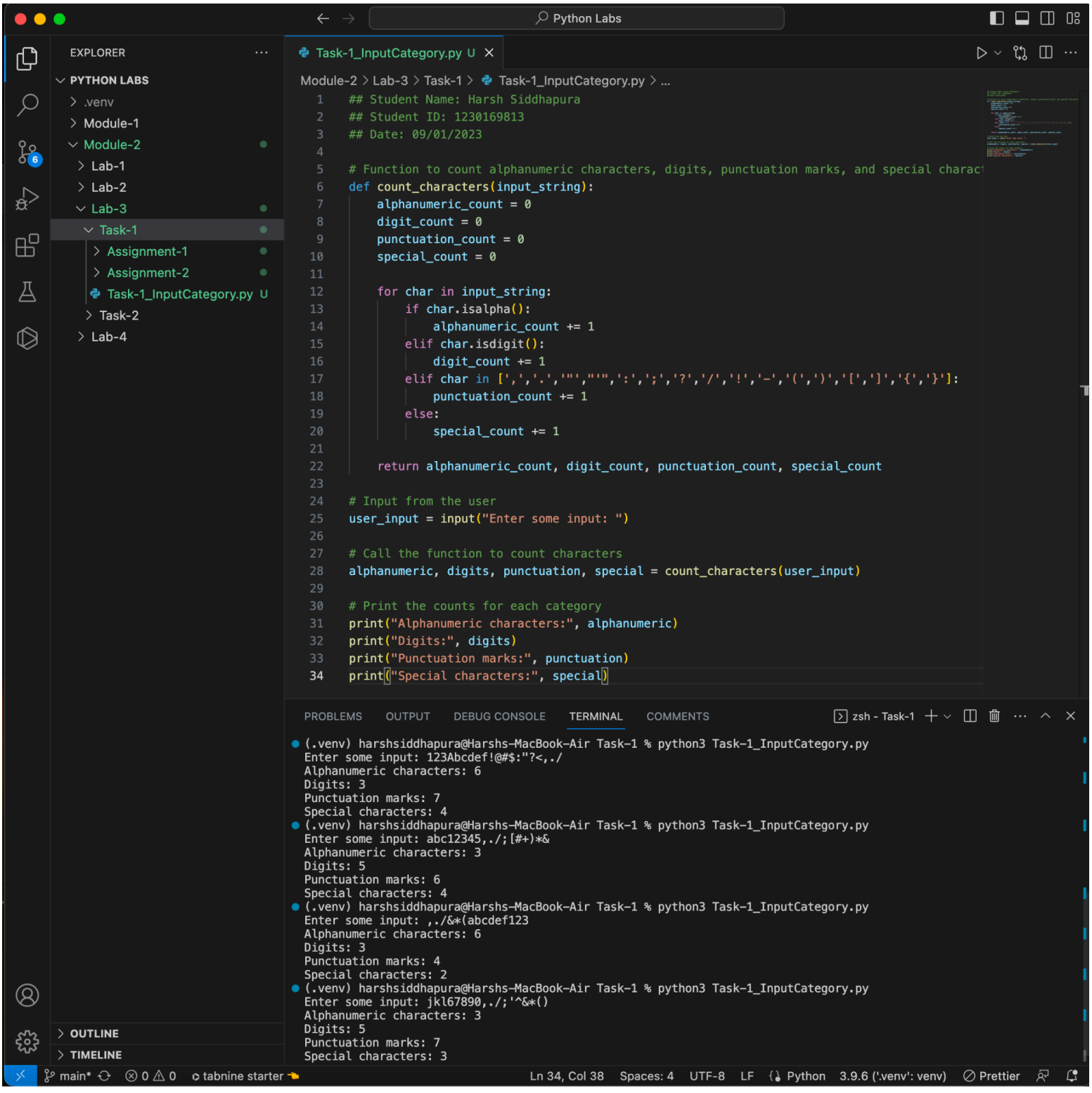
Character Categorization

This report presents an overview of a Python program designed to categorize characters within a given input string into four distinct categories: alphanumeric characters, digits, punctuation marks, and special characters. The program's purpose is to provide insights into the composition of a text string, making it a valuable tool for various applications, including data analysis and text processing. The Python program consists of several key components:

- **count_characters:** This function accepts a user-input string and employs a series of conditional statements to categorize each character based on its type. Here is a breakdown of each category:
    - **Alphanumeric Characters:** Characters that are part of words, such as letters (both uppercase and lowercase).
    - **Digits:** Numeric characters (0-9).
    - **Punctuation Marks:** This category includes common punctuation marks, such as commas, periods, quotation marks, colons, semicolons, question marks, slashes, exclamation marks, hyphens, and various brackets and parentheses.
    - **Special characters:** Any characters that do not belong to the aforementioned categories.

The function maintains counters for each category and updates them accordingly as it processes each character in the input string. The program begins by soliciting user input through the input() function, inviting the user to enter a string of their choice.

In summary, the Python program presented in this report provides a valuable tool for character categorization within text data. By breaking down characters into four categories—alphanumeric, digits, punctuation, and special characters—it assists users in gaining a deeper understanding of the composition of text strings. This program's simplicity and ease of use make it a versatile tool for a wide range of applications, from data analysis to text processing and beyond. Its capability to quickly provide counts for each character category empowers users to make informed decisions and take appropriate actions based on their specific needs.


Python Labs
EXPLORER
PYTHON LABS
.venv
Module-1
Module-2
Lab-1
Lab-2
Lab-3
Task-1
Assignment-1
Assignment-2
Task-1_InputCategory.py U
Task-2
Lab-4
OUTLINE
TIMELINE
Task-1_InputCategory.py U
Module-2 > Lab-3 > Task-1 > Task-1_InputCategory.py > ...
1 ## Student Name: Harsh Siddhapura
2 ## Student ID: 1230169813
3 ## Date: 09/01/2023
4
5 # Function to count alphanumeric characters, digits, punctuation marks, and special charac
6 def count_characters(input_string):
7 alphanumeric_count = 0
8 digit_count = 0
9 punctuation_count = 0
10 special_count = 0
11
12 for char in input_string:
13 if char.isalpha():
14 alphanumeric_count += 1
15 elif char.isdigit():
16 digit_count += 1
17 elif char in [',','.','"',"'",':',';','?','/','!','-','(',')','[',']','{','}']:
18 punctuation_count += 1
19 else:
20 special_count += 1
21
22 return alphanumeric_count, digit_count, punctuation_count, special_count
23
24 # Input from the user
25 user_input = input("Enter some input: ")
26
27 # Call the function to count characters
28 alphanumeric, digits, punctuation, special = count_characters(user_input)
29
30 # Print the counts for each category
31 print("Alphanumeric characters:", alphanumeric)
32 print("Digits:", digits)
33 print("Punctuation marks:", punctuation)
34 print("Special characters:", special)
PROBLEMS
OUTPUT
DEBUG CONSOLE
TERMINAL
COMMENTS
zsh - Task-1
(.venv) harshsiddhapura@Harshs-MacBook-Air Task-1 % python3 Task-1_InputCategory.py
Enter some input: 123Abcdef!@#$:"?<,./
Alphanumeric characters: 6
Digits: 3
Punctuation marks: 7
Special characters: 4
(.venv) harshsiddhapura@Harshs-MacBook-Air Task-1 % python3 Task-1_InputCategory.py
Enter some input: abc12345,./;[#+)*&
Alphanumeric characters: 3
Digits: 5
Punctuation marks: 6
Special characters: 4
(.venv) harshsiddhapura@Harshs-MacBook-Air Task-1 % python3 Task-1_InputCategory.py
Enter some input: ,./&*(abcdef123
Alphanumeric characters: 6
Digits: 3
Punctuation marks: 4
Special characters: 2
(.venv) harshsiddhapura@Harshs-MacBook-Air Task-1 % python3 Task-1_InputCategory.py
Enter some input: jkl67890,./;'^&*()
Alphanumeric characters: 3
Digits: 5
Punctuation marks: 7
Special characters: 3
main*
tabnine starter
Ln 34, Col 38
Spaces: 4
UTF-8
LF
Python
3.9.6 ('.venv': venv)
Prettier