ASSIGNMENT 3.1

Name:T.Rakshitha

Hall Ticket No:2303a51172

Batch:18

Question 1: Zero-Shot Prompting (Palindrome Number Program)

Write a zero-shot prompt (without providing any examples) to generate a Python function that checks whether a given number is a palindrome.

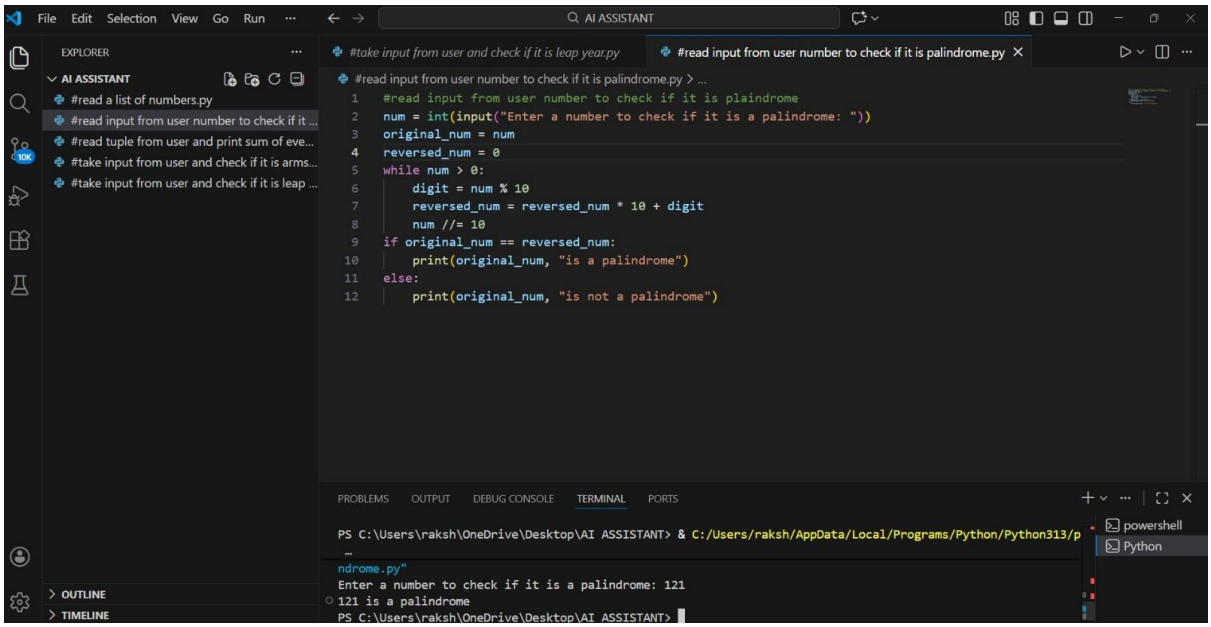
Task:

- **Record the AI-generated code.**
- **Test the code with multiple inputs.**
- **Identify any logical errors or missing edge-case handling.**

Prompt :

#read input from user number to check if it is plaindrome

Code :



Question 2: One-Shot Prompting (Factorial Calculation)

Write a one-shot prompt by providing one input-output example and ask the AI to generate a Python function to compute the factorial of a given number.

Example:

Input: 5 → Output: 120

Task:

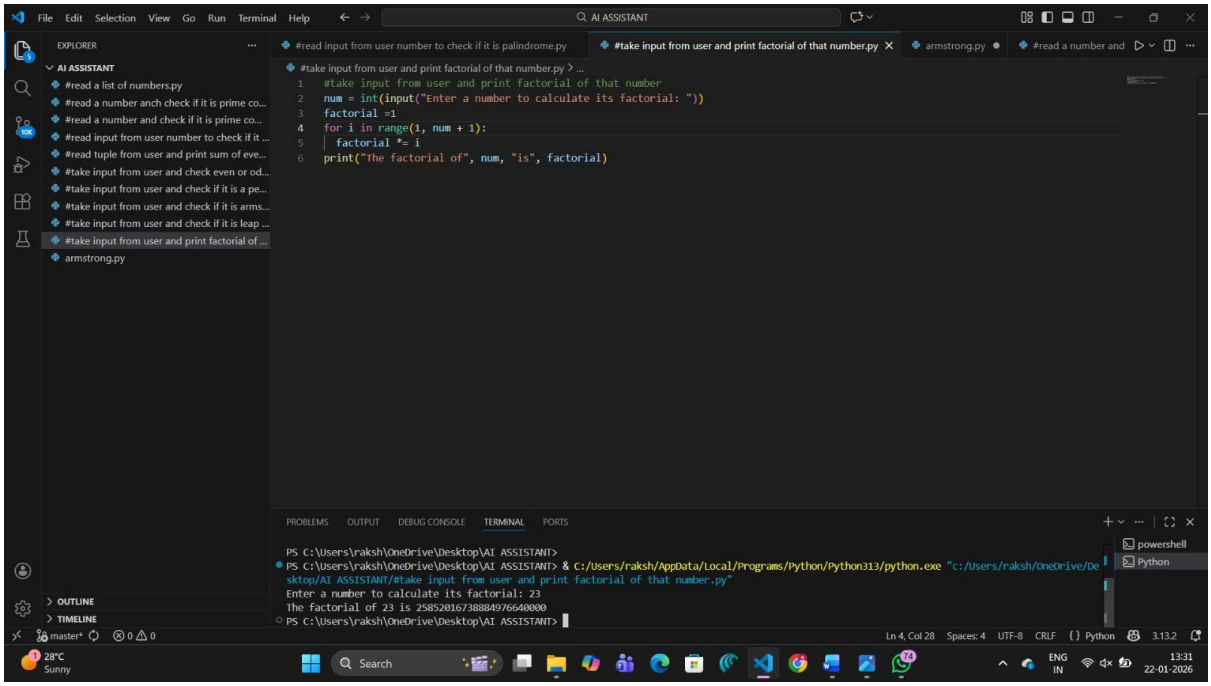
• Compare the generated code with a zero-shot solution.

• Examine improvements in clarity and correctness.

Prompt :

#take input from user and print factorial of that number

Code :



Question 3: Few-Shot Prompting (Armstrong Number Check)

Write a few-shot prompt by providing multiple input-output examples

to guide the AI in generating a Python function to check whether a

given number is an Armstrong number.

Examples:

• Input: 153 → Output: Armstrong Number

• Input: 370 → Output: Armstrong Number

• Input: 123 → Output: Not an Armstrong Number

Task:

• Analyze how multiple examples influence code structure and

accuracy.

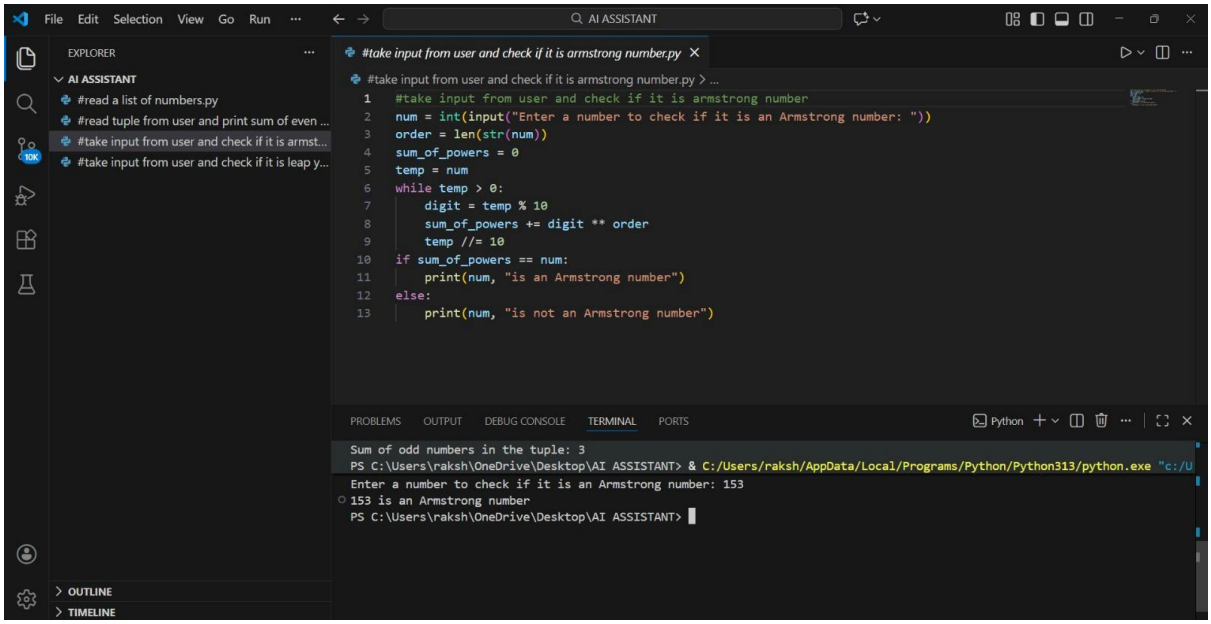
• Test the function with boundary values and invalid inputs.

(Optional Extension)

Prompt :

#take input from user and check if it is armstrong number

Code – output



Question 4: Context-Managed Prompting (Optimized Number Classification)

Design a context-managed prompt with clear instructions and constraints to generate an optimized Python program that classifies a number as prime, composite, or neither.

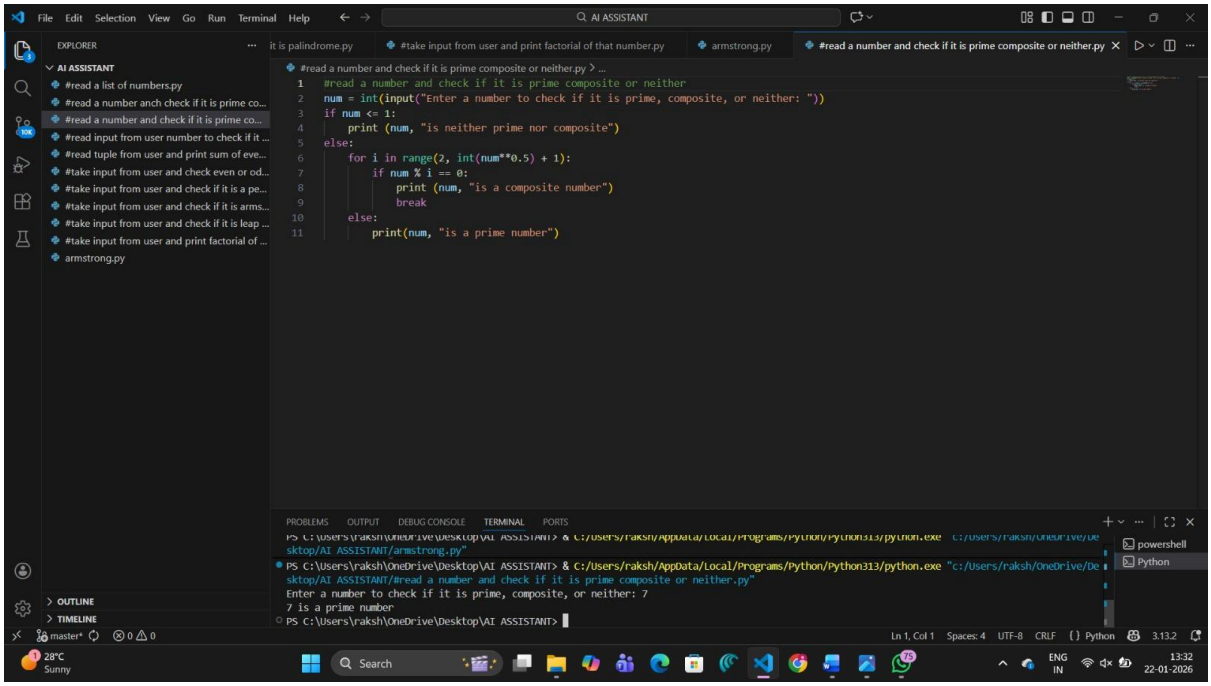
Task:

- **Ensure proper input validation.**
- **Optimize the logic for efficiency.**
- **Compare the output with earlier prompting strategies.**

Prompt :

 # read a number and check if it is prime composite or neither

Code – output



Question 5: Zero-Shot Prompting (Perfect Number Check)

Write a zero-shot prompt (without providing any examples) to generate a Python function that checks whether a given number is a perfect number.

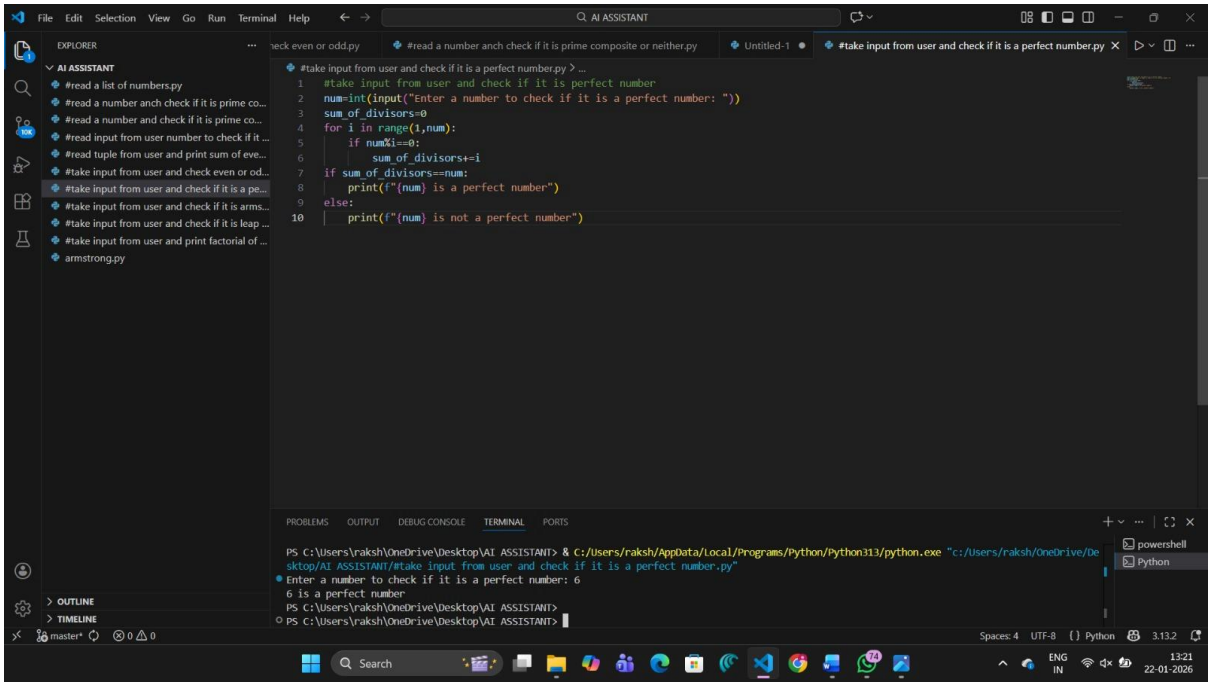
Task:

- **Record the AI-generated code.**
- **Test the program with multiple inputs.**
- **Identify any missing conditions or inefficiencies in the logic.**

Prompt :

#take input from user and chceck if it is perfect number

Code - output



Question 6: Few-Shot Prompting (Even or Odd Classification with Validation)

Write a few-shot prompt by providing multiple input-output examples to guide the AI in generating a Python program that determines whether a given number is even or odd, including proper input validation.

Examples:

- **Input: 8 → Output: Even**
- **Input: 15 → Output: Odd**
- **Input: 0 → Output: Even**

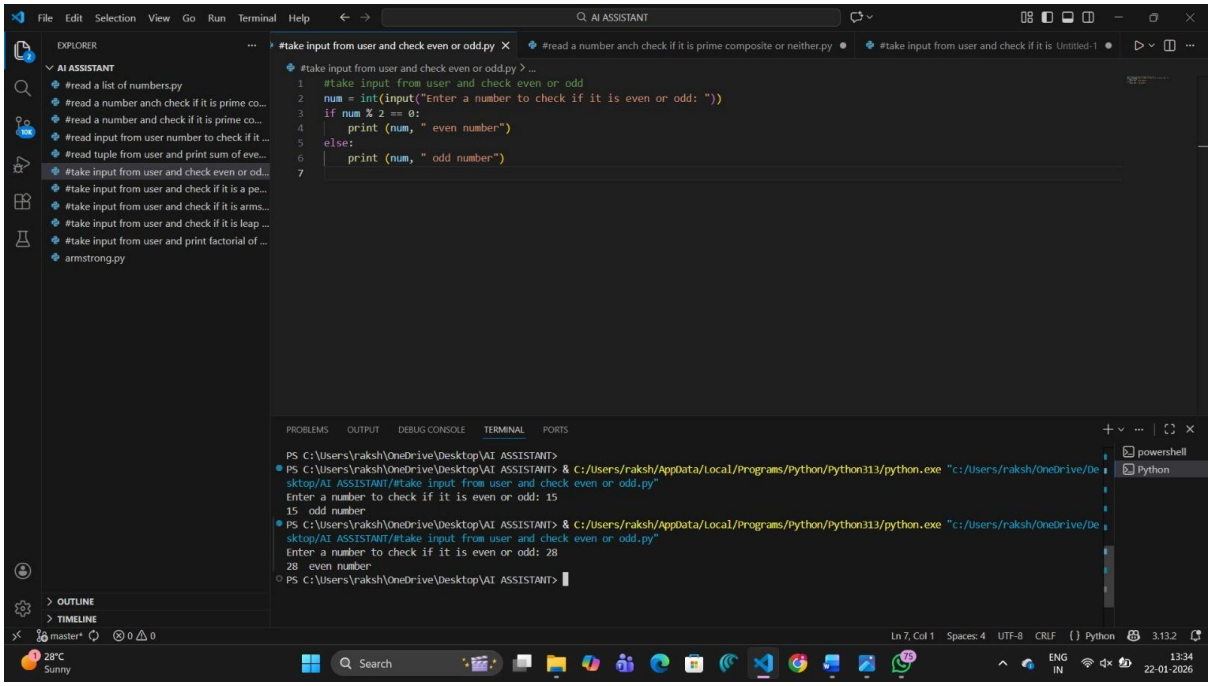
Task:

- **Analyze how examples improve input handling and output clarity.**
- **Test the program with negative numbers and non-integer inputs.**

Prompt :

 # take input from user and check even or odd

Code – output


File Edit Selection View Go Run Terminal Help
AI ASSISTANT
EXPLORER
AI ASSISTANT
#read a list of numbers.py
#read a number anch check if it is prime co...
#read a number and check if it is prime co...
#read input from user number to check if it ...
#read tuple from user and print sum of eve...
#take input from user and check even or od...
#take input from user and check if it is a pe...
#take input from user and check if it is arms...
#take input from user and check if it is leap ...
#take input from user and print factorial of ...
armstrong.py
#take input from user and check even or odd.py
#read a number anch check if it is prime composite or neither.py
#take input from user and check if it is Untitled-1
#take input from user and check even or odd.py > ...
#take input from user and check even or odd
num = int(input("Enter a number to check if it is even or odd: "))
if num % 2 == 0:
print (num, " even number")
else:
print (num, " odd number")
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
PS C:\Users\raksh\OneDrive\Desktop\AI ASSISTANT>
PS C:\Users\raksh\OneDrive\Desktop\AI ASSISTANT> & C:/Users/raksh/AppData/Local/Programs/Python/Python313/python.exe "c:/Users/raksh/OneDrive/Desktop/AI ASSISTANT/#take input from user and check even or odd.py"
Enter a number to check if it is even or odd: 15
15 odd number
PS C:\Users\raksh\OneDrive\Desktop\AI ASSISTANT> & C:/Users/raksh/AppData/Local/Programs/Python/Python313/python.exe "c:/Users/raksh/OneDrive/Desktop/AI ASSISTANT/#take input from user and check even or odd.py"
Enter a number to check if it is even or odd: 28
28 even number
PS C:\Users\raksh\OneDrive\Desktop\AI ASSISTANT>
powershell
Python
OUTLINE
TIMELINE
master*
Ln 7, Col 1 Spaces: 4 UTF-8 CRLF { } Python 3.13.2
28°C
Sunny
Search
ENG
IN
13:34
22-01-2026