ASSIGNMENT -3.1

BATCH-30

ROLL-NO:2306A91001

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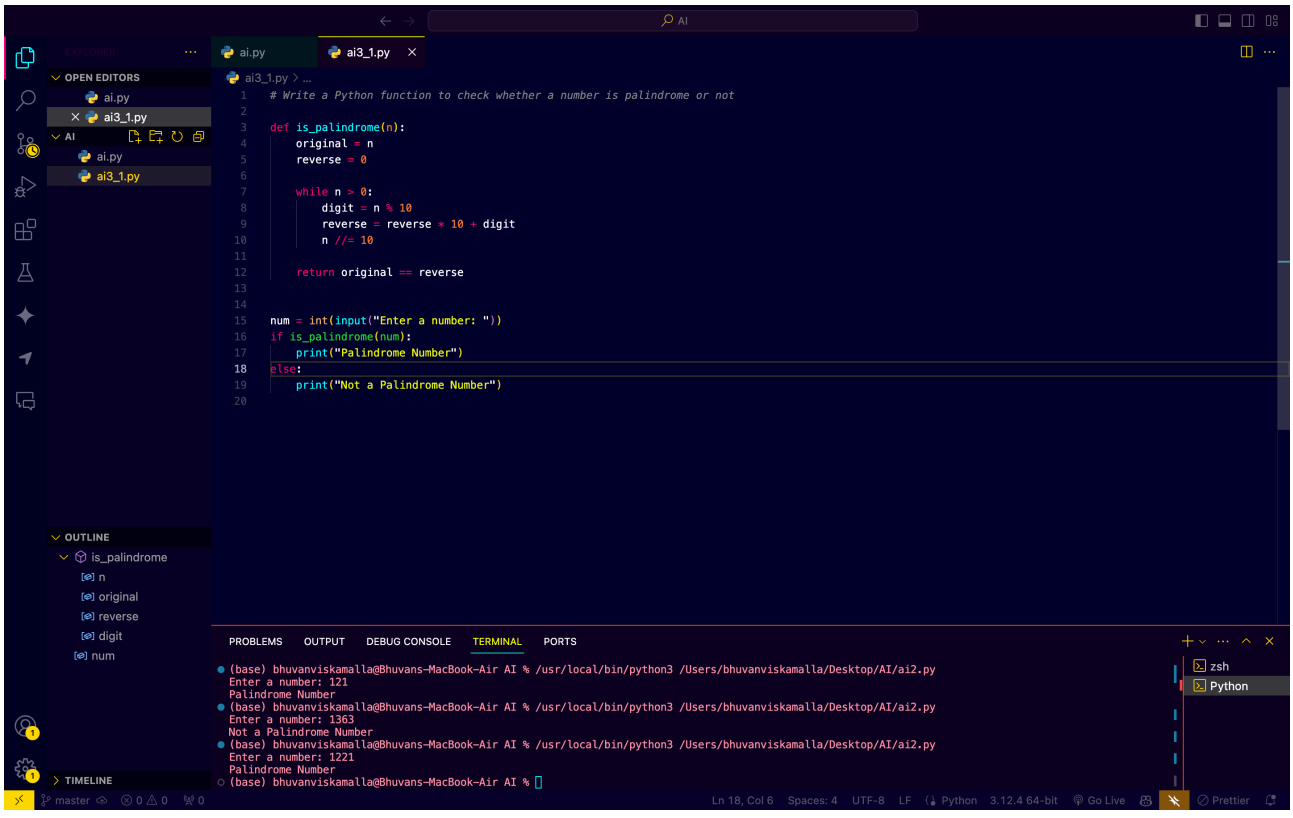
TASK-1:

ZERO-SHOT PROMPTING (PALINDROME NUMBER PROGRAM)

PROMPT:
Write a Python function that checks whether a given number is a palindrome. The
function should return True if it is a palindrome and False otherwise.

CODE:



OBSERVATION: -
The model is given only the explanation of the question -Any example or detailed explanation is not given -Answer is accurate but not specific with negative and non-integers values

TASK-2:
ONE-SHOT PROMPTING (FACTORIAL CALCULATION)

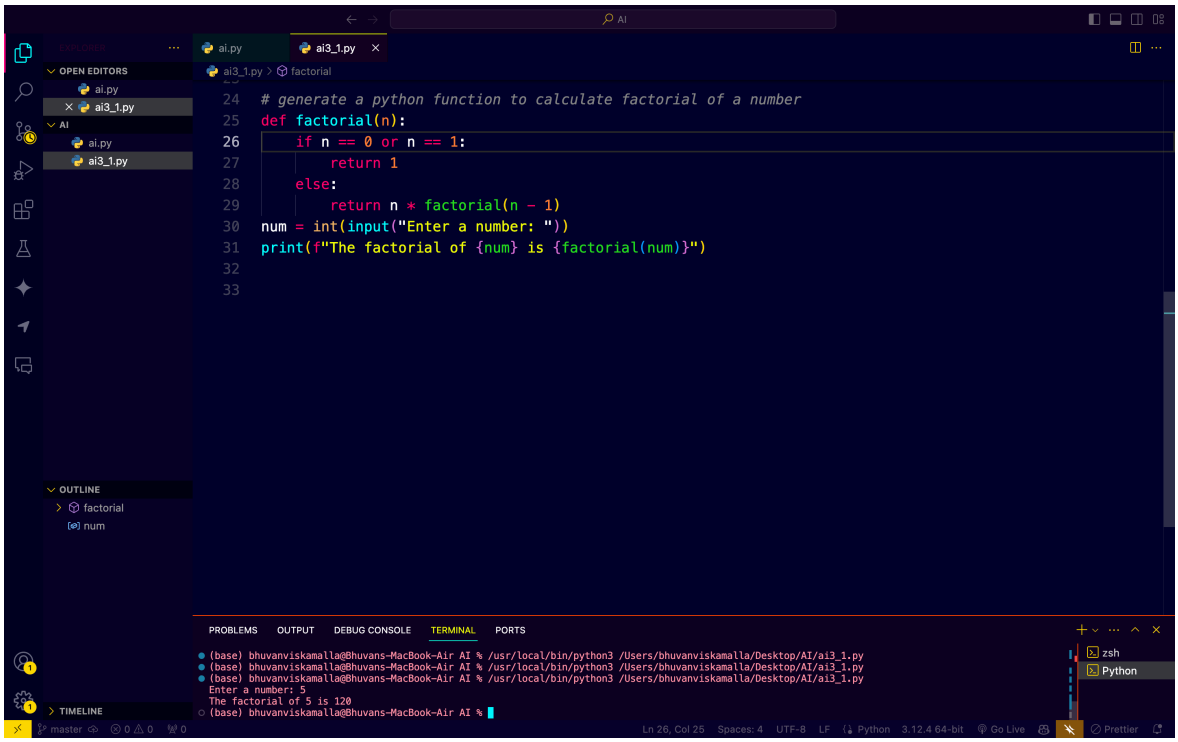
PROMPT:write a python function that compute the factorial of given number. The function should return the result.

Example:

Input:5

Output:120

CODE:



OBSERVATION:
Clear understanding of the output better choice of logic-stack overflow, recursion
complexity Correct handling of base case Improve code simplicity

TASK-3:
FEW-SHOT PROMPTING (ARMSTRONG NUMBER CHECK)

Prompt:

Example 1:

Input: 153

Output: Armstrong Number

Example 2:

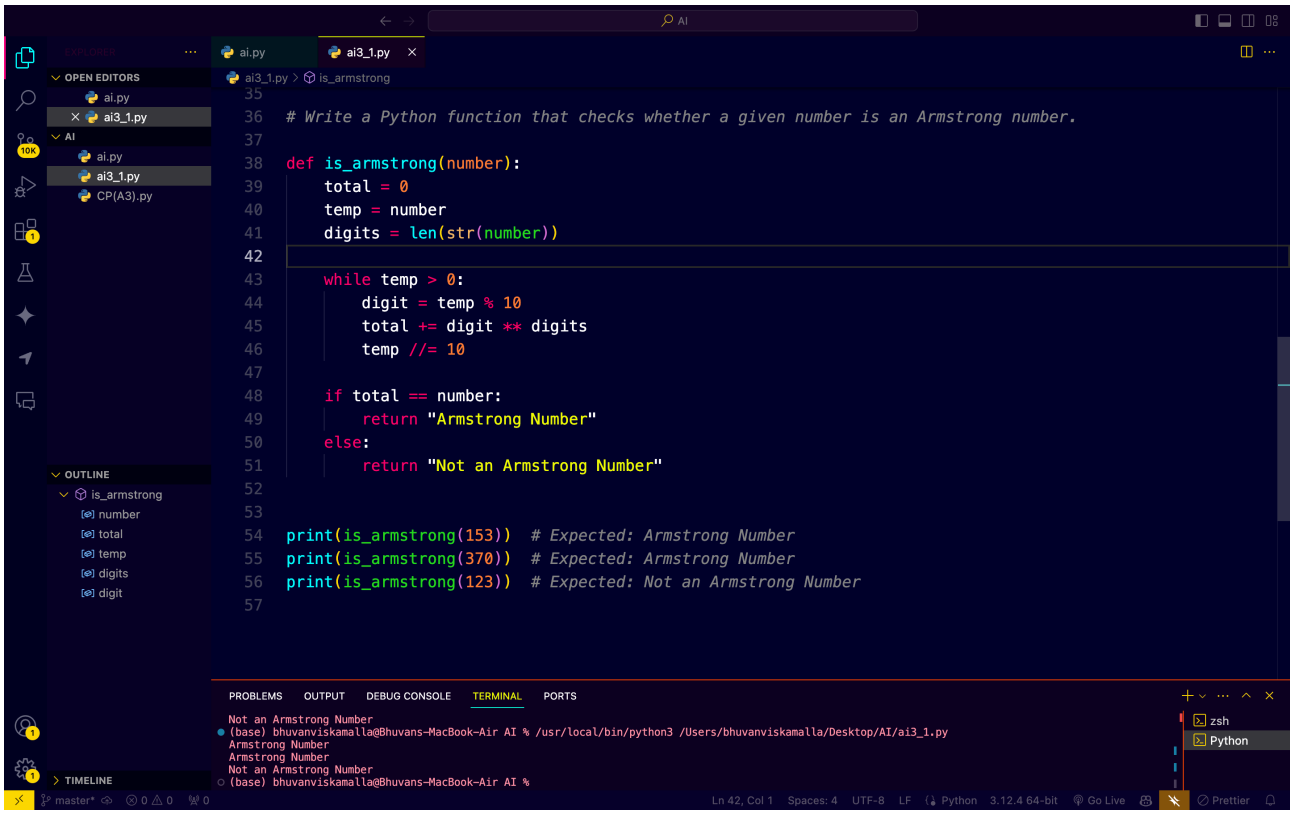
Input: 370

Output: Armstrong NumberExample 3:

Input: 123

Output: Not an Armstrong Number Now write a Python function that checks whether a
given number is an Armstrong number. The function should return an appropriate result.

CODE:



OBSERVATION:
Clear output formatting. structured way Correct logic selection Easy understanding of
code Exact Appropriate answer Optimised and customised solution

TASK-4:
CONTEXT-MANAGED PROMPTING (OPTIMISED NUMBER CLASSIFICATION)

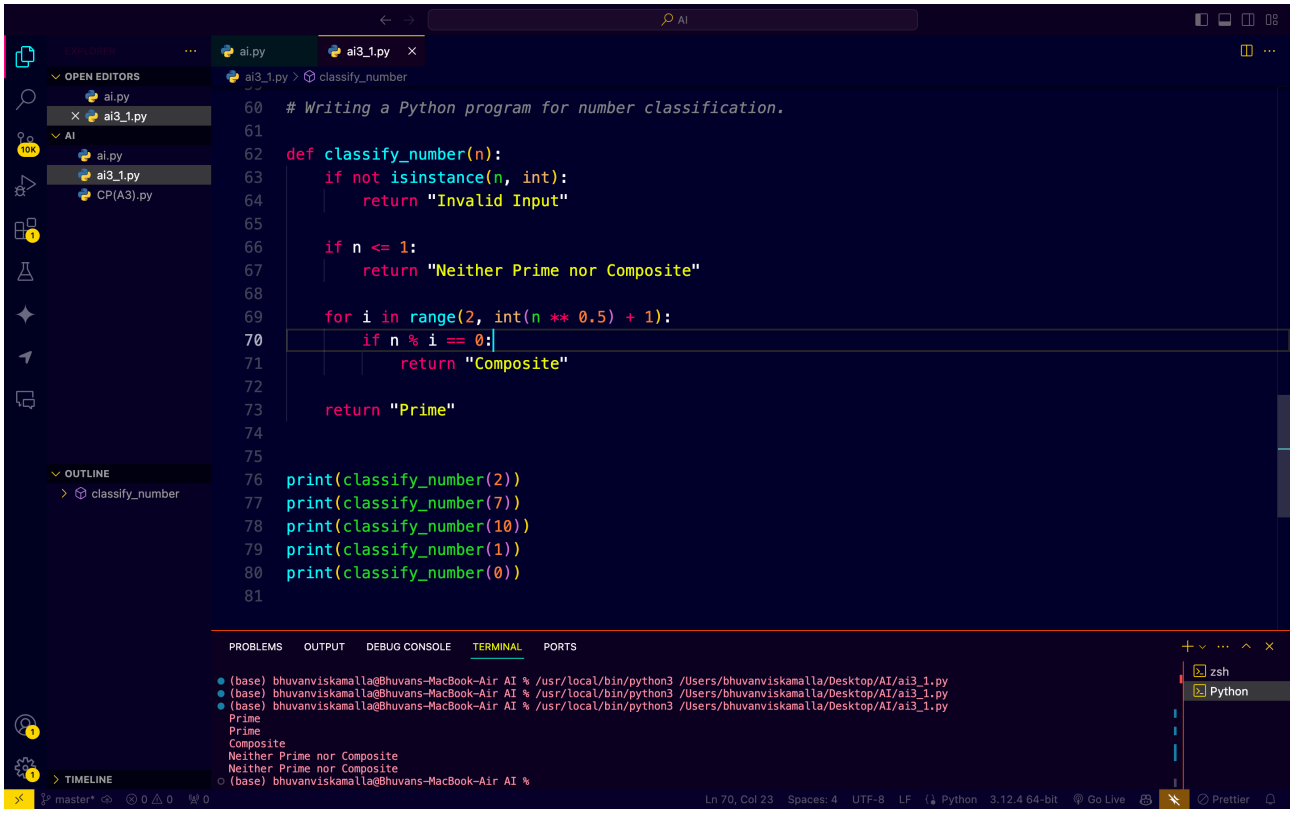
PROMPT:

You are writing a Python program for number classification.

Requirements: -

Accept only integer input - Handle invalid and negative inputs properly - Classify the number as Prime, Composite, or Neither - Optimize the logic for efficiency (avoid unnecessary checks) - Return clear and user-friendly messages - Write clean and readable Python code Generate the program accordingly.

CODE:



OBSERVATION:
The role is defined Constrains are clearly stated Efficiency and validation of the code
but the inputs should be specified more clearly mentioned

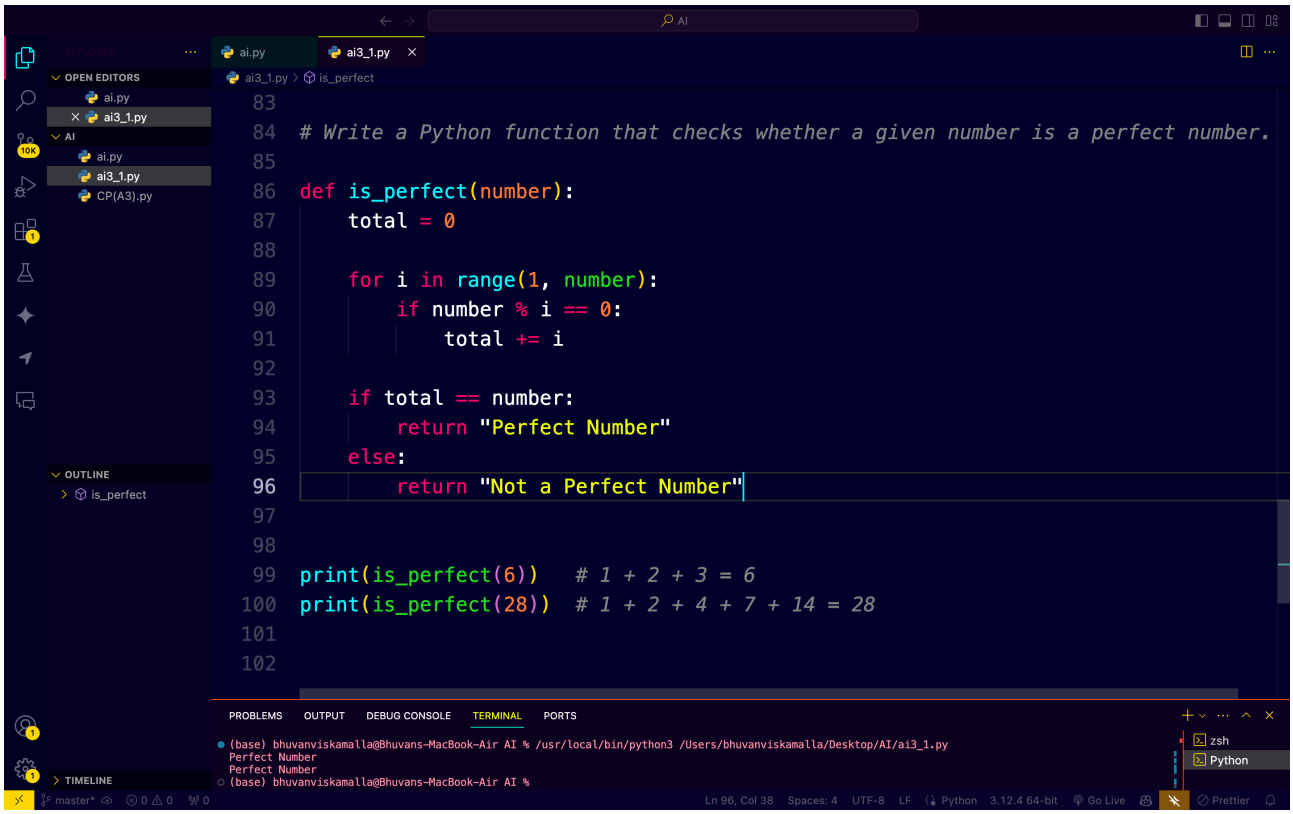
TASK-5:

ZERO-SHOT PROMPTING (PERFECT NUMBER CHECK) VALIDATION)

PROMPT:

Write a Python function that checks whether a given number is a perfect number. The
function should return an appropriate result.

CODE:



OBSERVATION: No input validation – if negative or float any. Inefficient for large input Did not specify input constraints No edge case handing seen

TASK-6:

FEW-SHOT PROMPTING (EVEN OR ODD CLASSIFICATION WITH VALIDATION)

PROMPT:

Example 1:

Input: 8

Output: Even

Example 2:

Input: 15

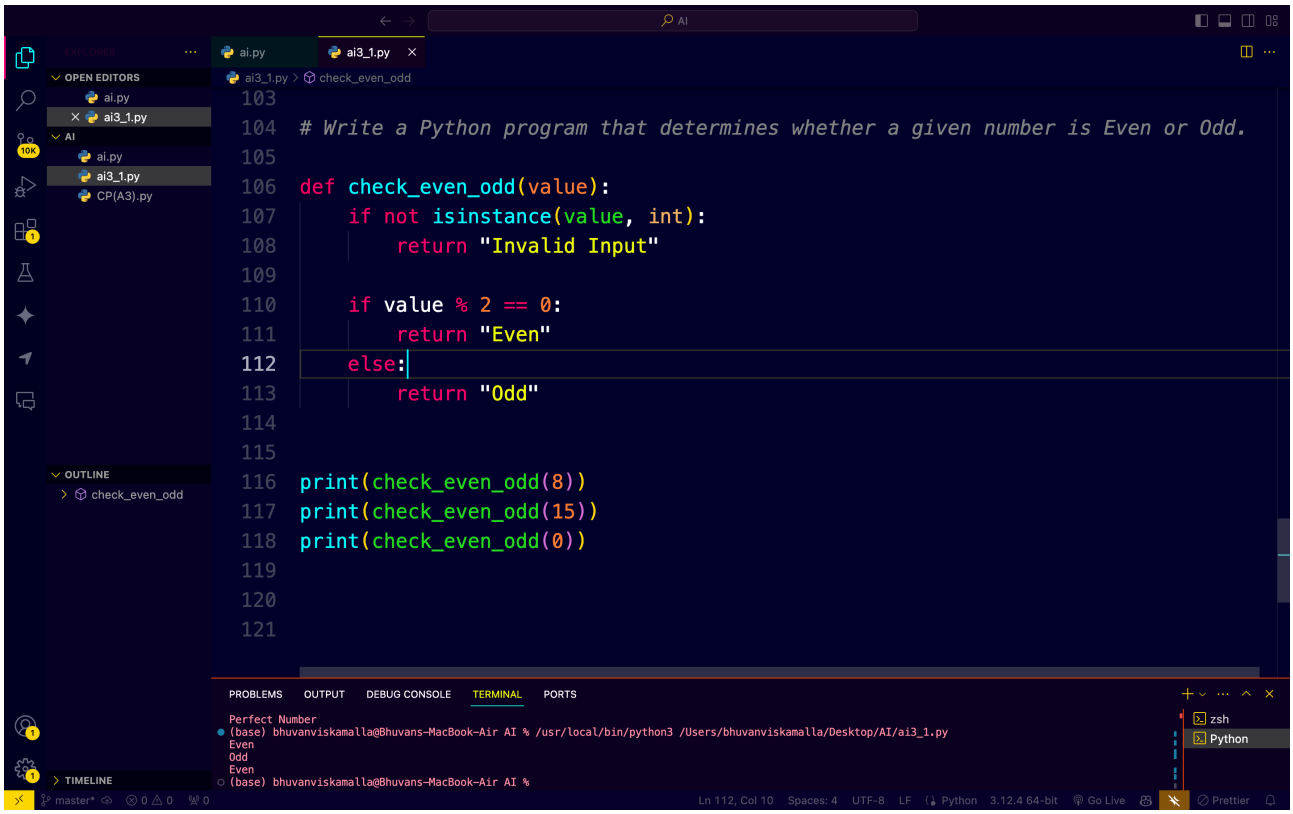
Output: Odd

Example 3:

Input: 0

Output: Even Now write a Python program that determines whether a given number is
Even or Odd. The program should include proper input validation and return clear
messages.

CODE:



OBSERVATION:

Negative integer are handled correctly Program safely rejected non integer inputs

Improve input handling Clear and consistent output