M.AKHIL REDDY

2303A52315

BATCH 45

Ass 5.5

Task Description #1 (Transparency in Algorithm Optimization)

Task: Use AI to generate two solutions for checking prime numbers:

• Naive approach(basic)

• Optimized approach

Prompt:

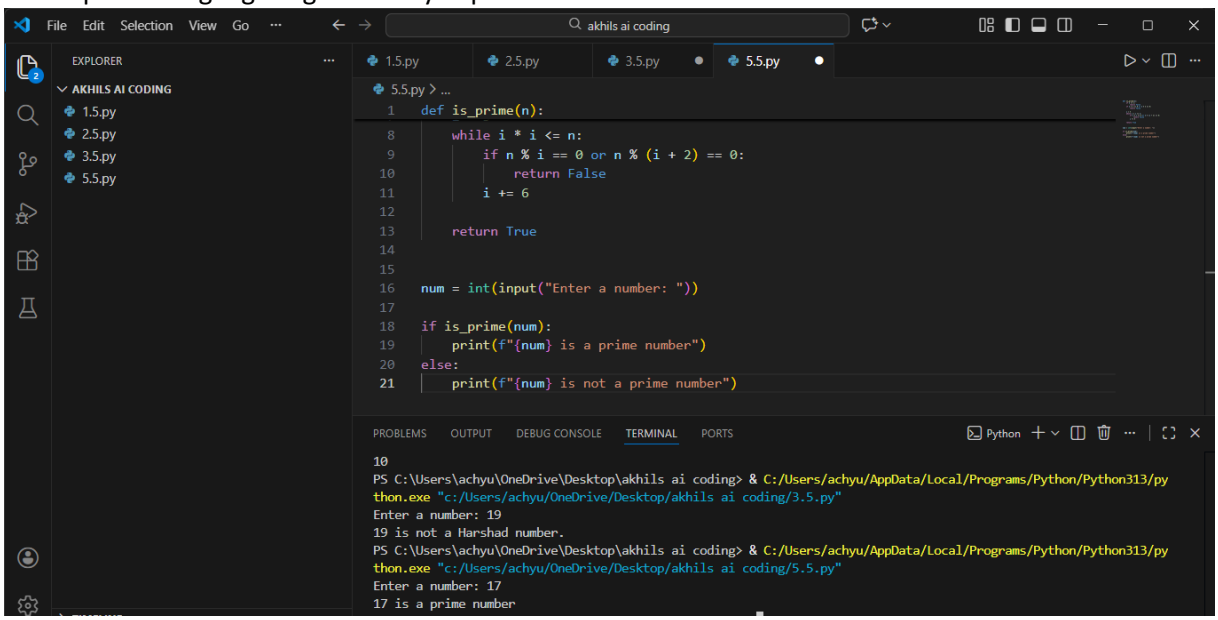
“Generate Python code for two prime-checking methods and explain how the optimized version improves performance.”

Expected Output:

• Code for both methods.

• Transparent explanation of time complexity.

• Comparison highlighting efficiency improvements



Task Description #2 (Transparency in Recursive Algorithms)

Objective: Use AI to generate a recursive function to calculate Fibonacci numbers.

Instructions:

1. Ask AI to add clear comments explaining recursion.

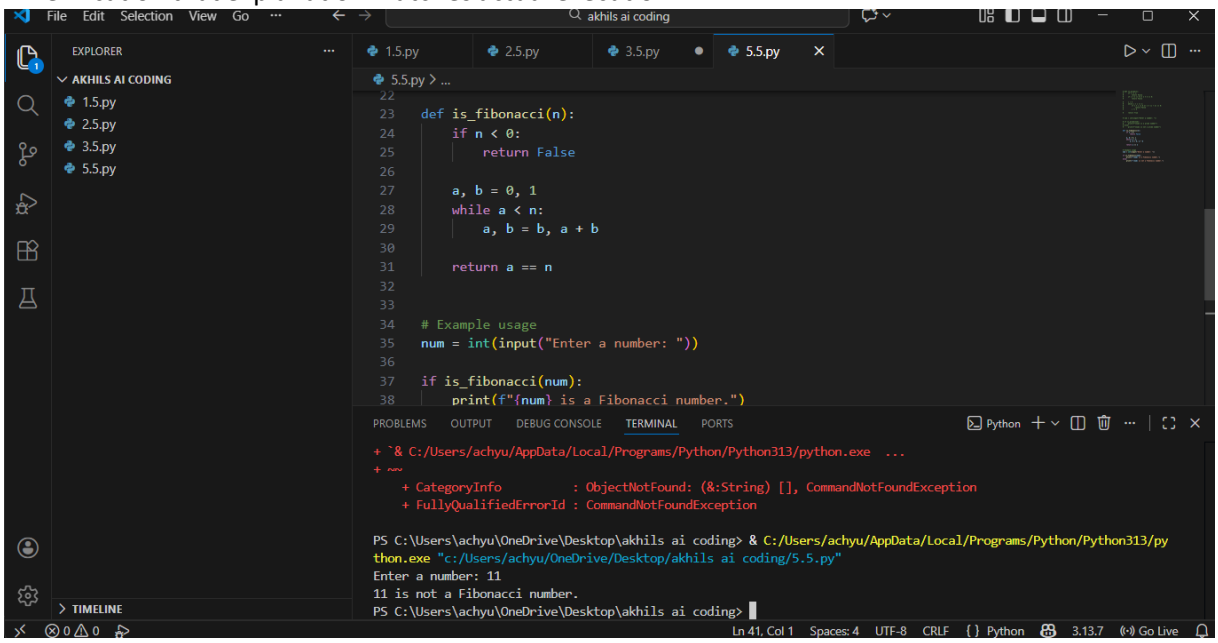
2. Ask AI to explain base cases and recursive calls.

Expected Output:

• Well-commented recursive code.

• Clear explanation of how recursion works.

• Verification that explanation matches actual execution.



Use AI to generate a Python program that reads a file and

processes data.

Prompt:

“Generate code with proper error handling and clear explanations

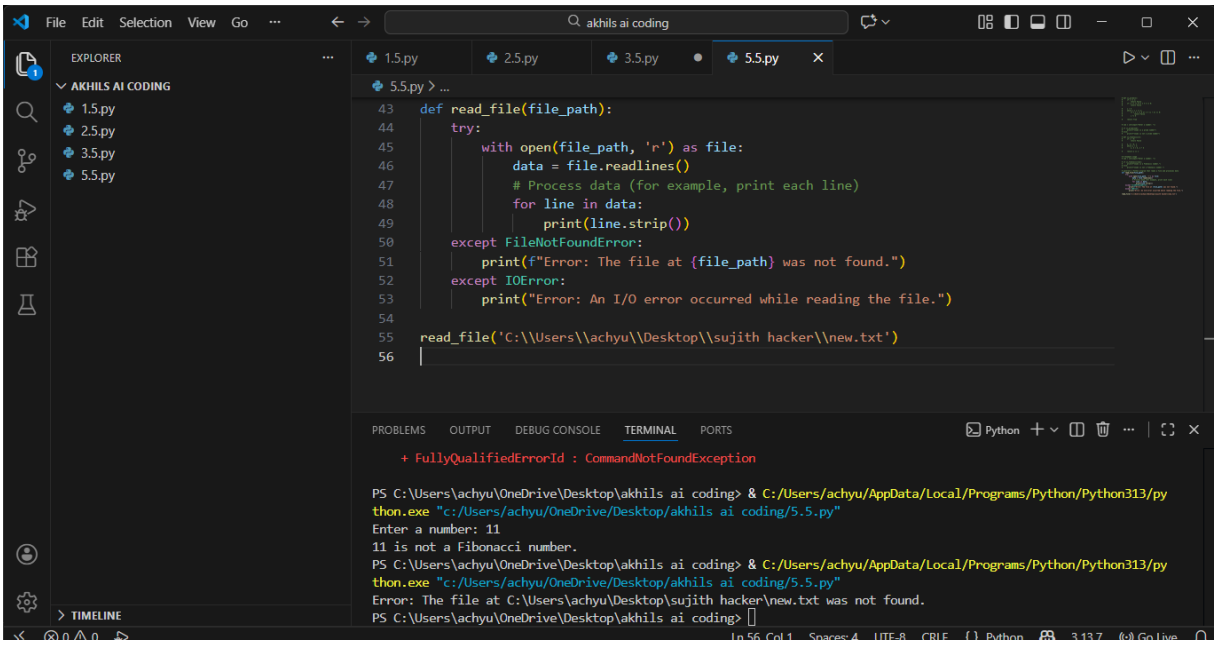
for each exception.”

Expected Output:

• Code with meaningful exception handling.

• Clear comments explaining each error scenario.

• Validation that explanations align with runtime behavior.



Use an AI tool to generate a Python-based login system.

Analyze: Check whether the AI uses secure password handling

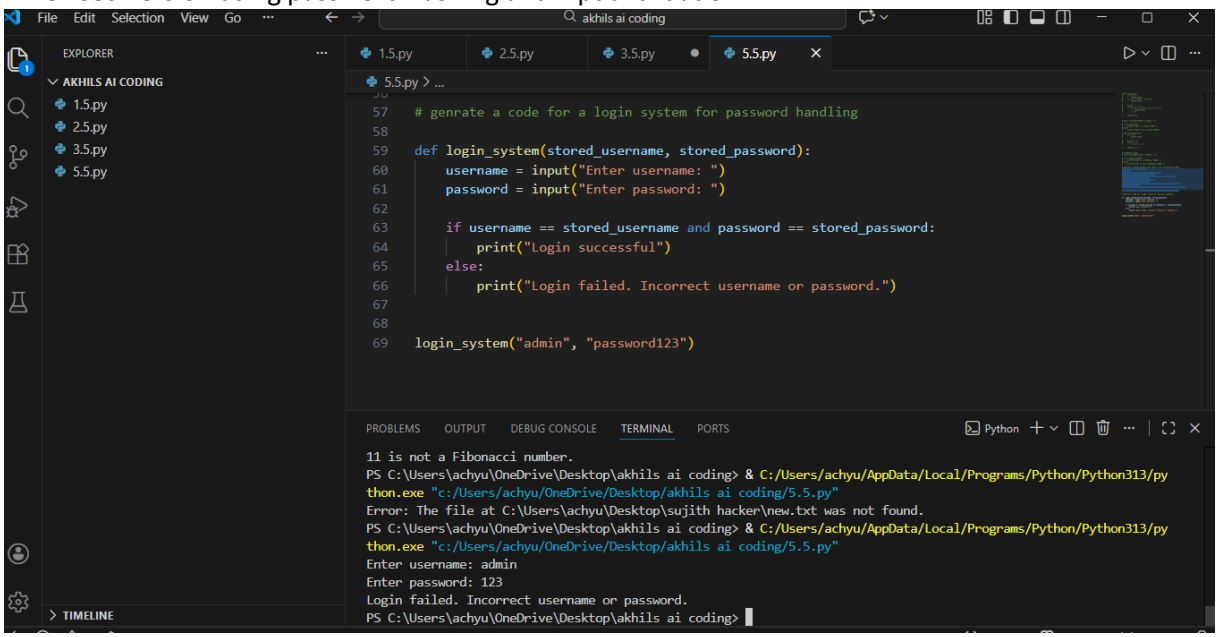
practices.

Expected Output:

• Identification of security flaws (plain-text passwords, weak

validation).

• Revised version using password hashing and input validation



Use an AI tool to generate a Python script that logs user

activity (username, IP address, timestamp).

Analyze: Examine whether sensitive data is logged unnecessarily

or insecurely.

Expected Output:

• Identified privacy risks in logging.

• Improved version with minimal, anonymized, or masked

logging.

• Explanation of privacy-aware logging principles.