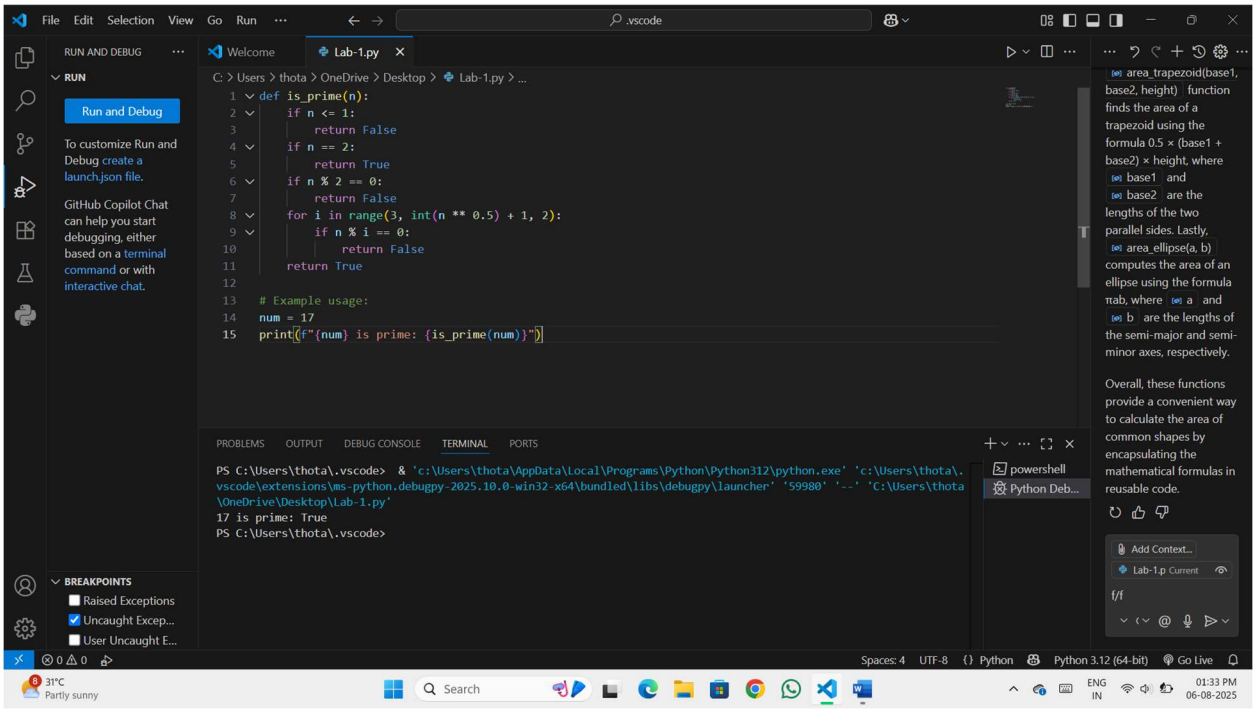
★ AI ASSISTED CODING

- ✓ **Task Description 2**: Use a Copilot to generate a is prime () python functions:

❖ **Expected output**: Functions to check primality with correct Logic.

❖ **Prompt2**: write a python code to check whether number is prime are not.

❖ 

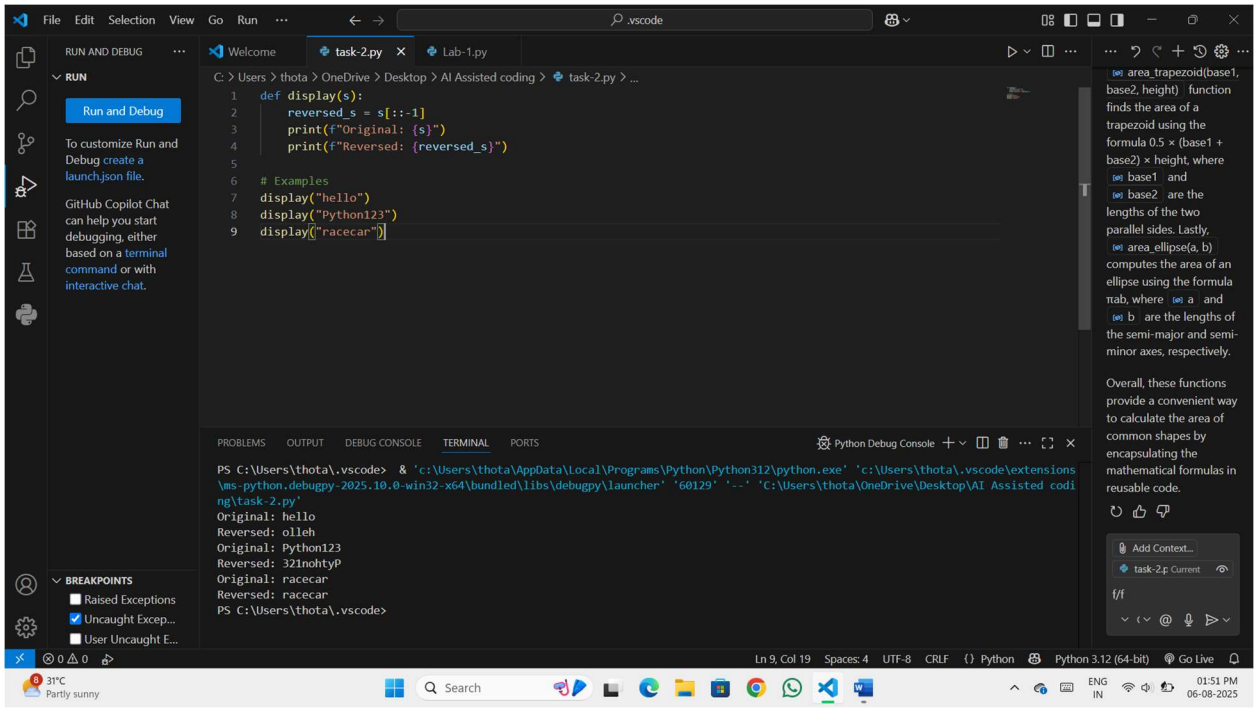
Observation: A prime number is a number greater than 1 that has no positive divisors other than 1 and itself.

- ➢ **Functionality**: Returns True for prime numbers and False otherwise.
- ➢ **Suitable for checking primality of large numbers due to reduced iterations.**

- **Task Description 3:** write a comment like # functions to Reverse a String and use copilot to generate the functions:

❖ **Expected output:** Auto-completed reverse function.

✓ **Prompt3**: write a python code to Reverse a string.



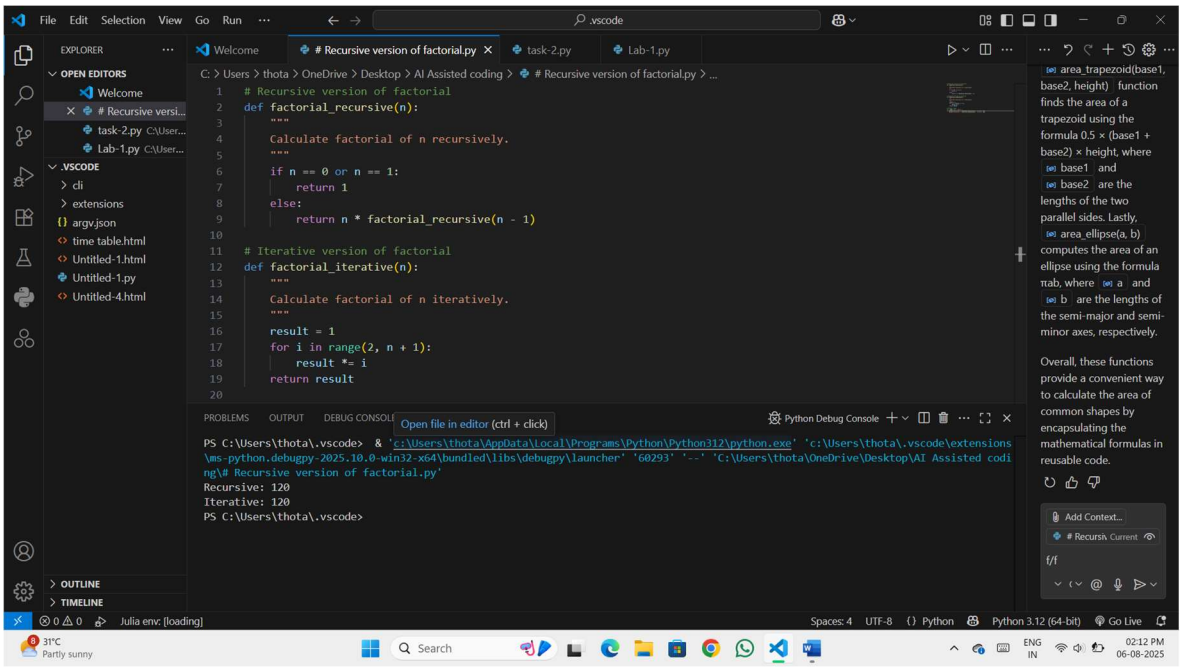
Observation:

- Logic: Uses Python slicing [::-1] to reverse the string efficiently.
- Simplicity: One-liner function; concise and readable.
- Functionality: Works for letters, numbers, symbols, and even empty strings.

- **Task Description 4:** Generate both Recursive and Iterative version of a factorial using comments :

❖ **Expected output:** Two Working Factorial of Implementation.

✓ **Prompt4:** write a python code for both recursive and Iterative factorial.



Observation:

➢ **Recursive Version**:

- Elegant and mirrors the mathematical definition.
- May cause stack overflow for large n due to deep recursion.
- Time complexity: **O(n)**; Space complexity: **O(n)** (due to call stack).

➢ **Version:Iterative**

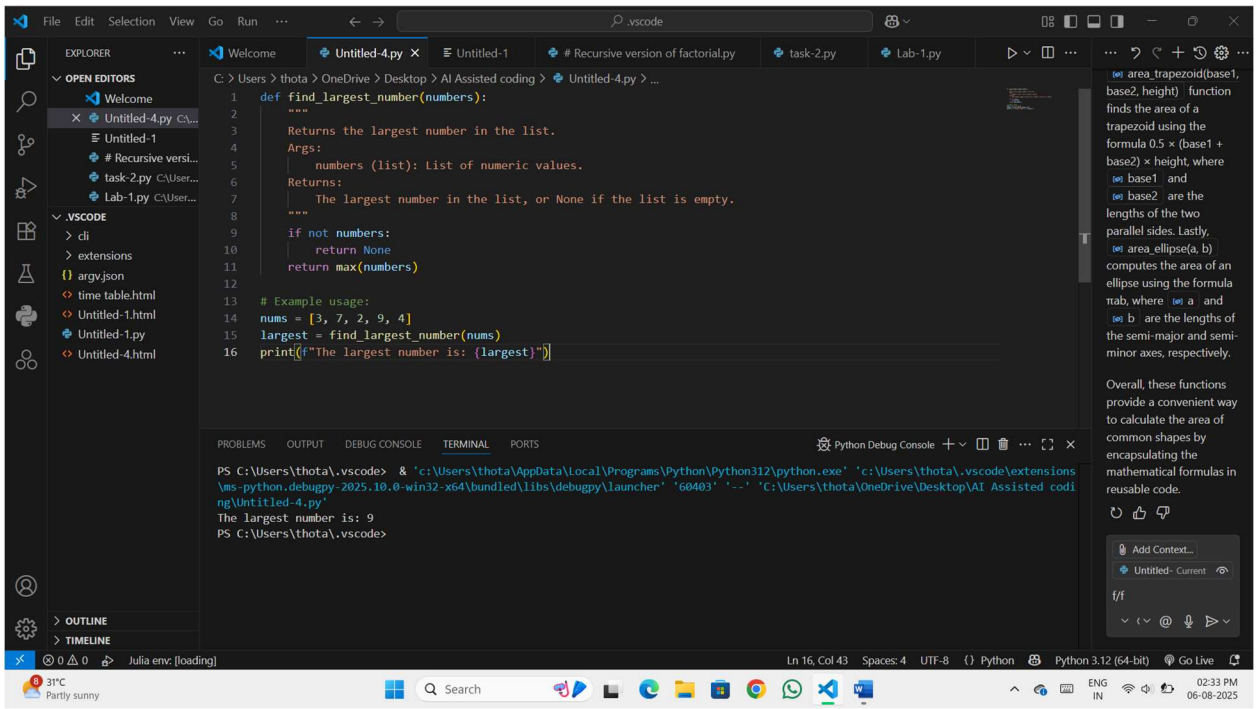
- More memory-efficient and avoids recursion limits.
- Preferred for large values of n.
- Time complexity: **O(n)**; Space complexity: **O(1)**.

- **Both Implementations:**
  - Correctly handle base cases (0! = 1, 1! = 1).
  - Produce identical results for valid non-negative integers.

✓ **Task Description 5:** Use Copilot to find the largest Number in a List and Access code quality and efficiency:

Expected output: a valid function with your revie**Prompt5:** write a python code to find largest number. Prompt: Generate a largest number

Prompt: Generate the python code of largest number



Observation:

- **Correctness: Accurately finds the largest number by comparing each element.**

- **Edge Case Handling: Returns None for an empty list, avoiding errors.**

- **Efficiency:**
  - **Time complexity: O(n) — linear scan through the list.**
  - **Space complexity: O(1) — uses constant extra space.**
- **Code Quality:**
  - **Clear variable naming (largest, numbers).**