Assignment-6.4

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Task-01: Task 1: Student Performance Evaluation System

Scenario You are building a simple academic management module for a university system where student performance needs to be evaluated automatically.

Task Description Create the skeleton of a Python class named Student with the attributes:

- **name**
- **roll_number**
- **marks**

Write only the class definition and attribute initialization. Then,

using GitHub Copilot, prompt the tool to complete:

- **A method to display student details**
- **A method that checks whether the student's marks are above the class**

  average and returns an appropriate message

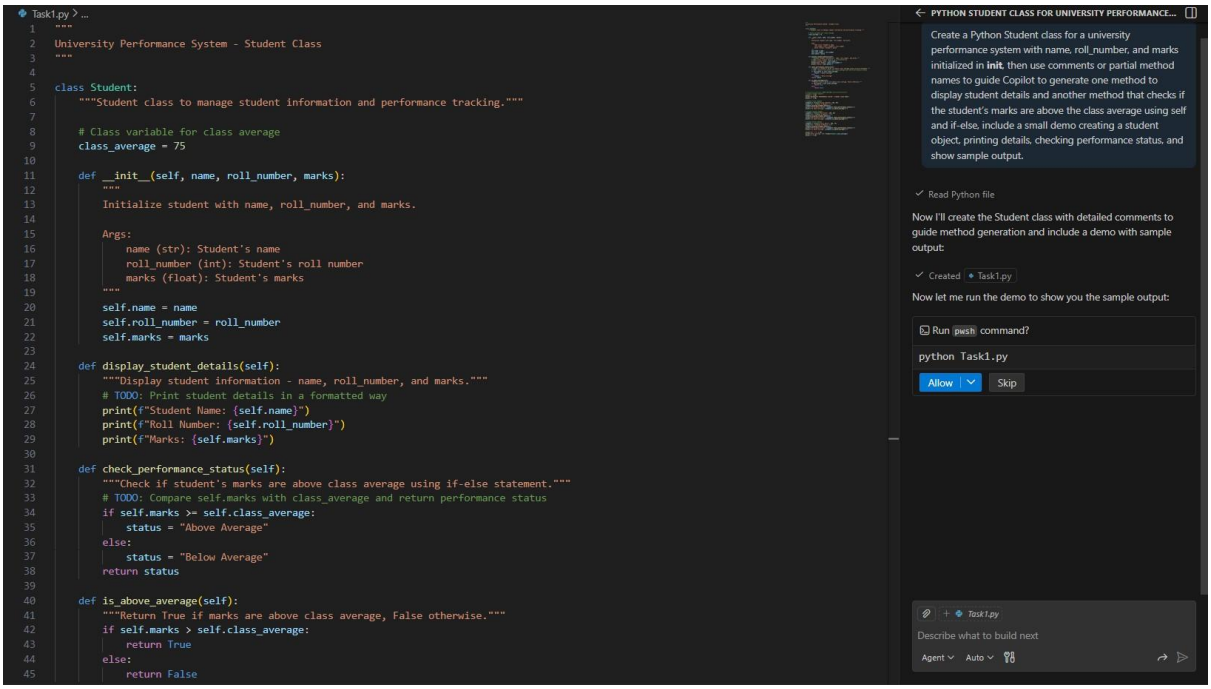
Use comments or partial method names to guide Copilot for code completion.

Expected Outcome

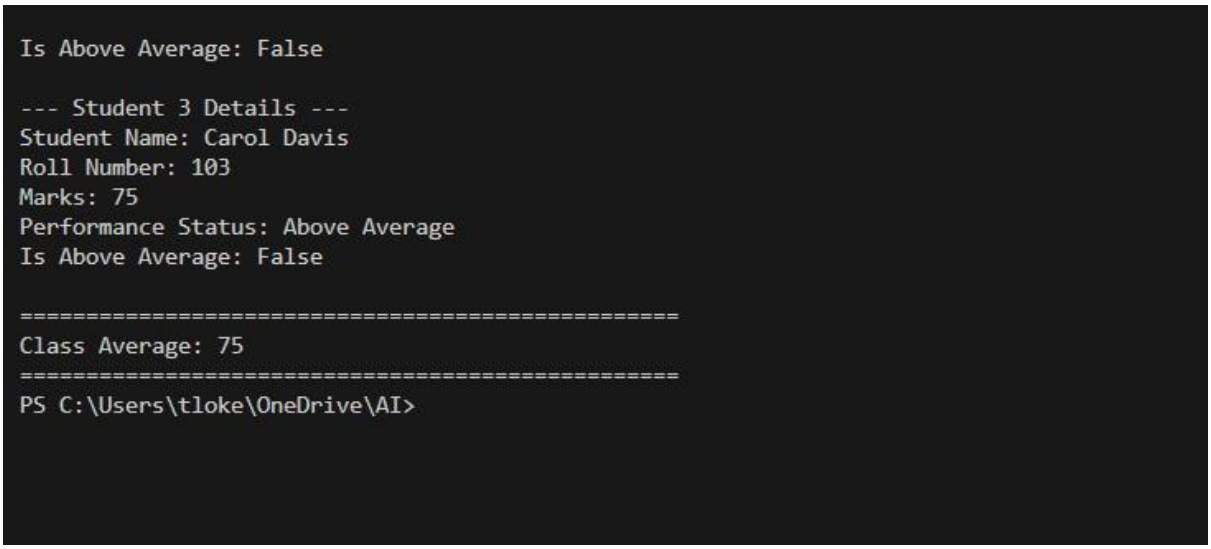
- **A completed Student class with Copilot-generated methods**
- **Proper use of: o self attributes**

o Conditional statements (if-else)

- **Sample output showing student details and performance status**



OUTPUT:



Task-02: Task 2: Data Processing in a Monitoring System

Scenario

You are working on a basic data monitoring script where sensor readings are collected as numbers. Only even readings need further processing.

Task Description

Write the initial part of a for loop to iterate over a list of integers representing sensor readings.

Add a comment prompt instructing GitHub Copilot to: • Identify even numbers • Calculate their square • Print the result in a readable format

Allow Copilot to complete the remaining loop logic.

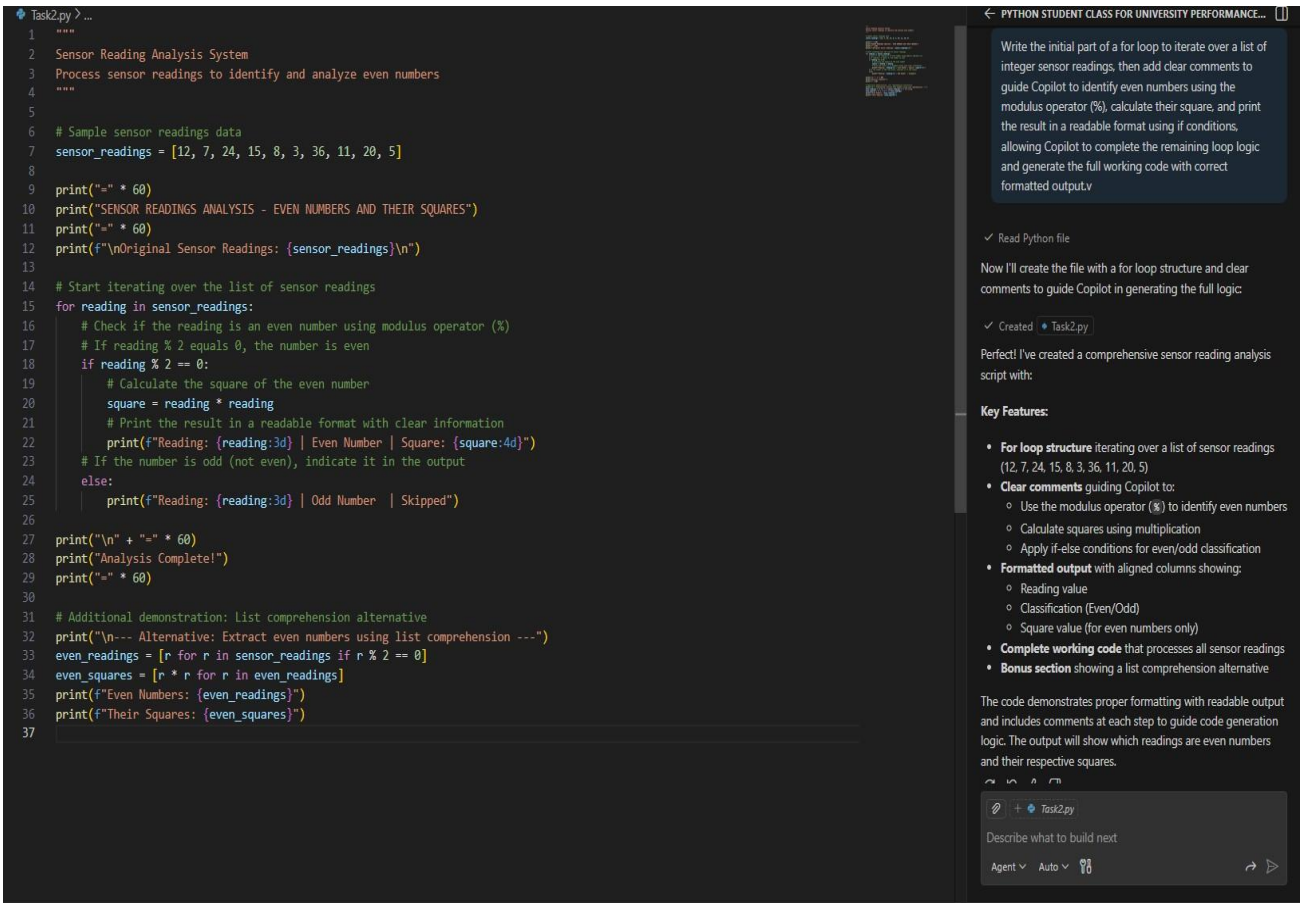
Expected Outcome

- **A complete for loop generated by Copilot**
- **Use of:**

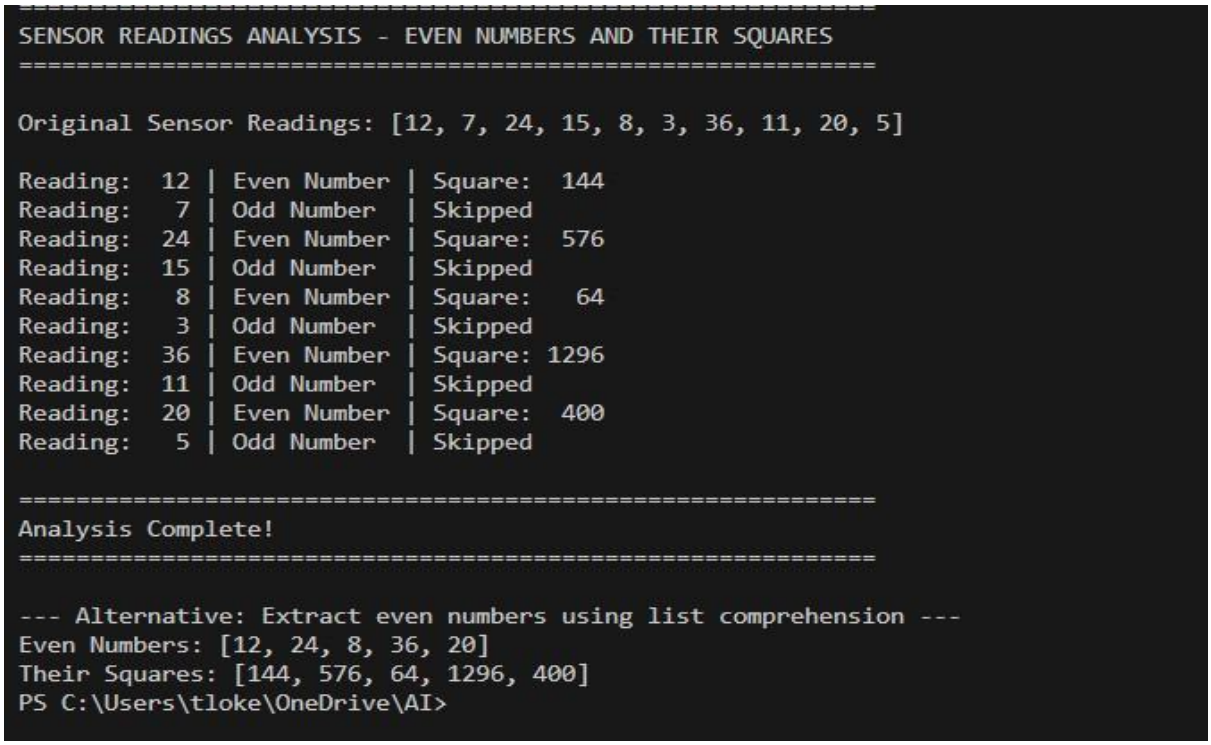
o Modulus operator to identify even numbers o

Conditional statements

- **Correct and formatted output for valid inputs**



OUTPUT:



Task-03: Task 3: Banking Transaction Simulation

Scenario

You are developing a basic banking module that handles deposits and withdrawals for customers.

Task Description

Create the structure of a Python class named BankAccount with attributes:

- **account_holder**
- **balance**

Use GitHub Copilot to complete methods for:

- **Depositing money**
- **Withdrawing money**
- **Preventing withdrawals when the balance is insufficient Guide Copilot using method names and short comments.**

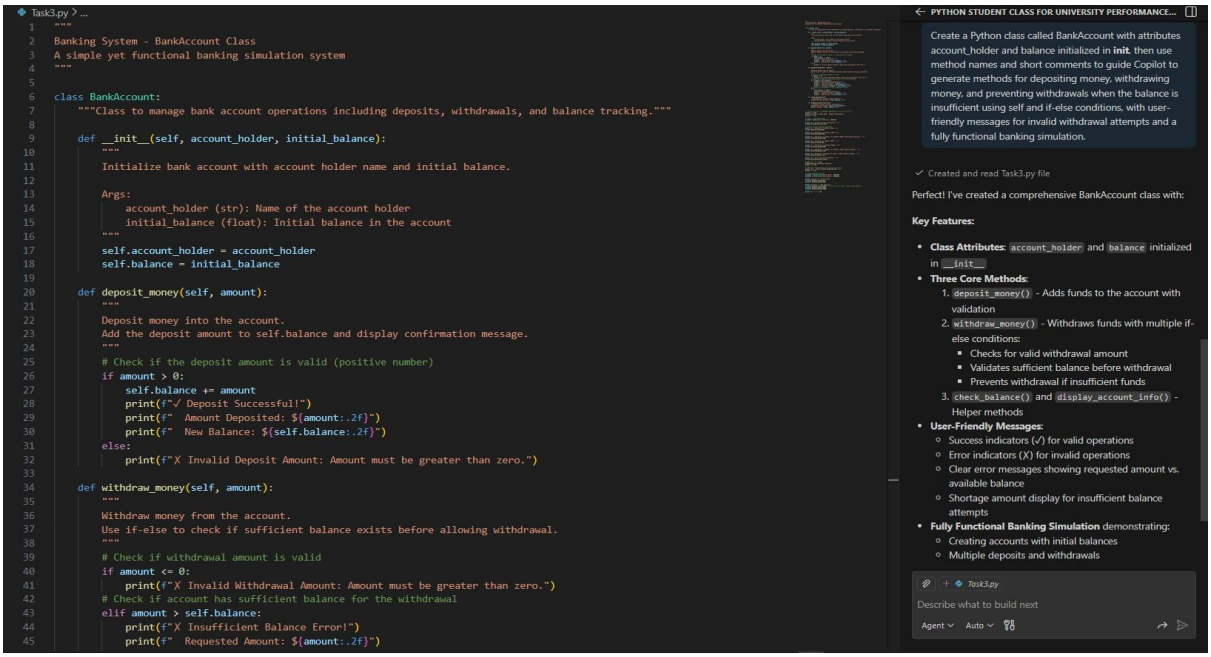
Expected Outcome

- **A fully functional BankAccount class**
- **Copilot-generated methods using:**

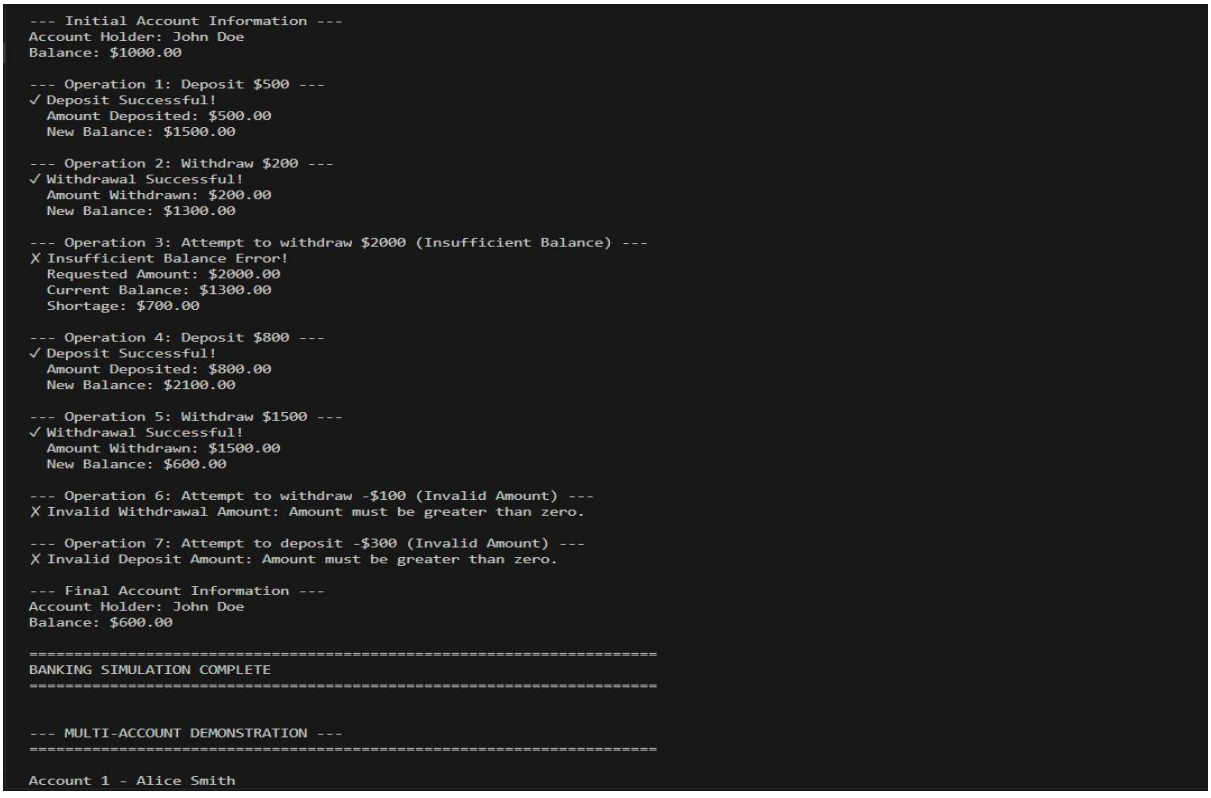
o if-else conditions o Class

attributes via self

- **Proper handling of invalid withdrawal attempts with user-friendly Messages**



OUTPUT:



Task-04:

Task 4: Student Scholarship Eligibility Check

Scenario

A university wants to identify students eligible for a merit-based scholarship based on their scores.

Task Description

Define a list of dictionaries where each dictionary represents a student with:

- **name**
- **score**

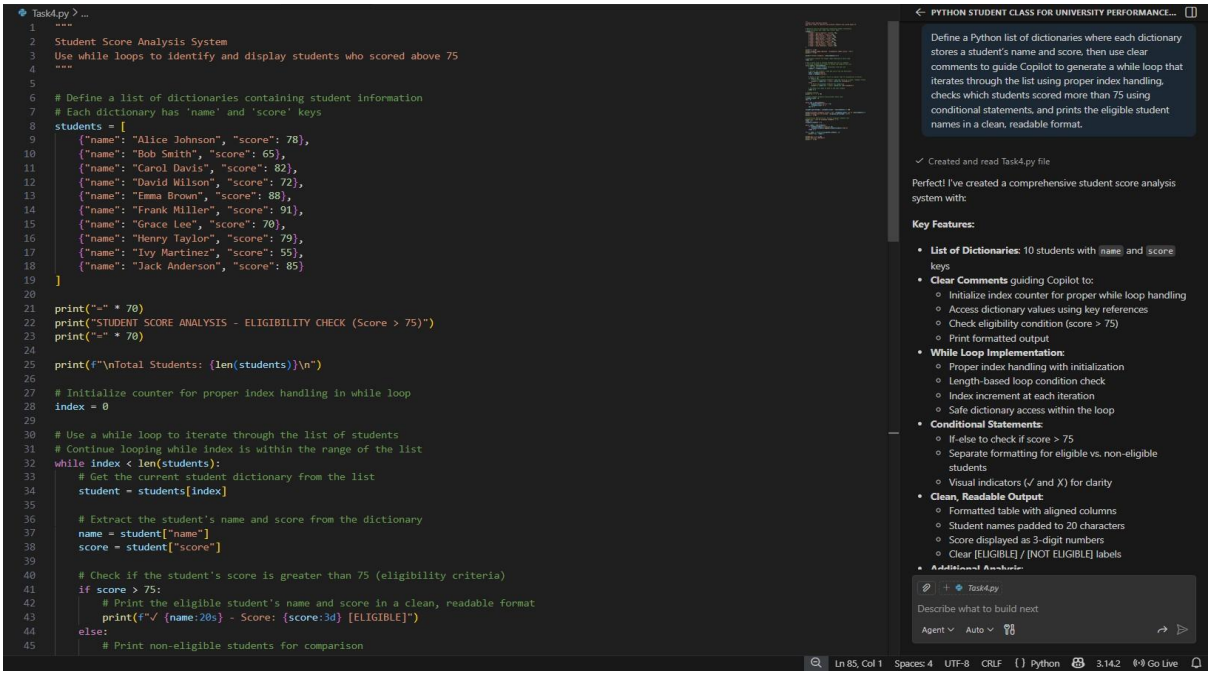
Write the initialization and list structure yourself.

Then, prompt GitHub Copilot to generate a while loop that:

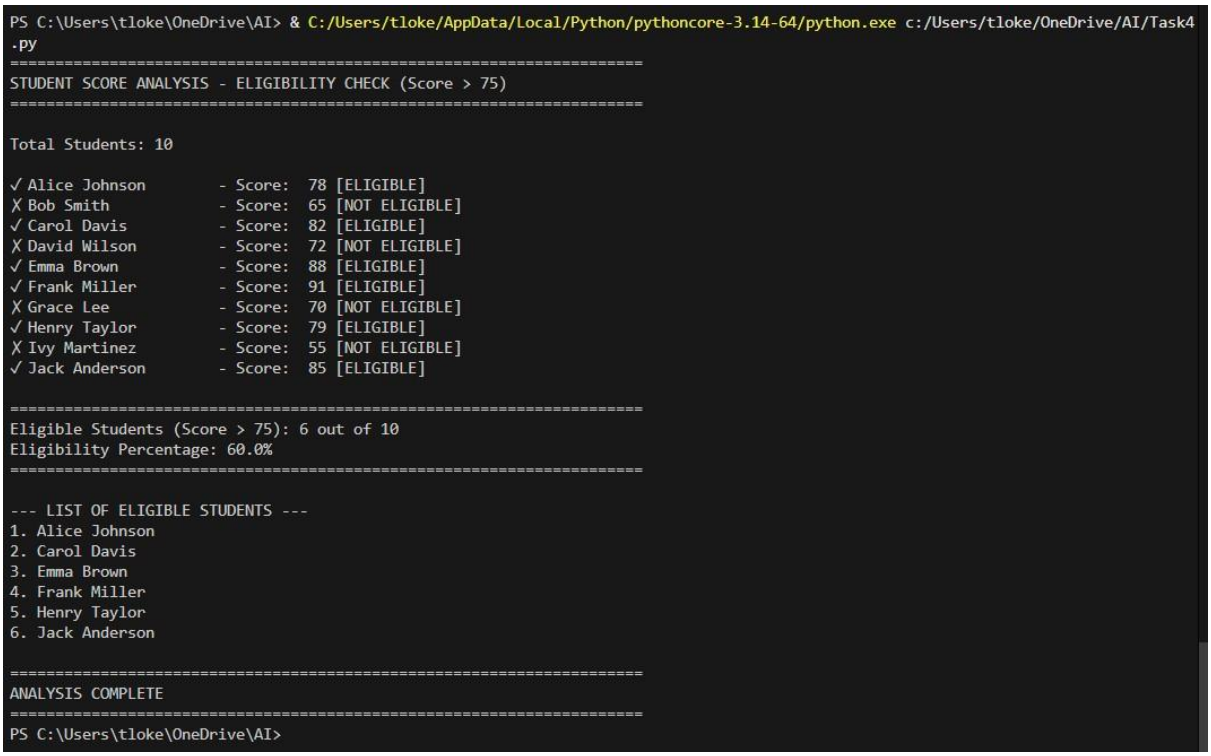
- **Iterates through the list**
- **Prints the names of students who scored more than 75 Use comments to guide Copilot's code completion.**

Expected Outcome

- **A complete while loop generated by Copilot**
- **Correct index handling and condition checks**
- **Cleanly formatted output listing eligible students**



OUTPUT:



Task-05: Task 5: Online Shopping Cart Module

Scenario

You are designing a simplified shopping cart system for an e-commerce

website that supports item management and discount calculation.

Task Description

Begin writing a Python class named ShoppingCart with:

- **An empty list to store items (each item may include name, price, quantity)**

Use GitHub Copilot to generate methods that:

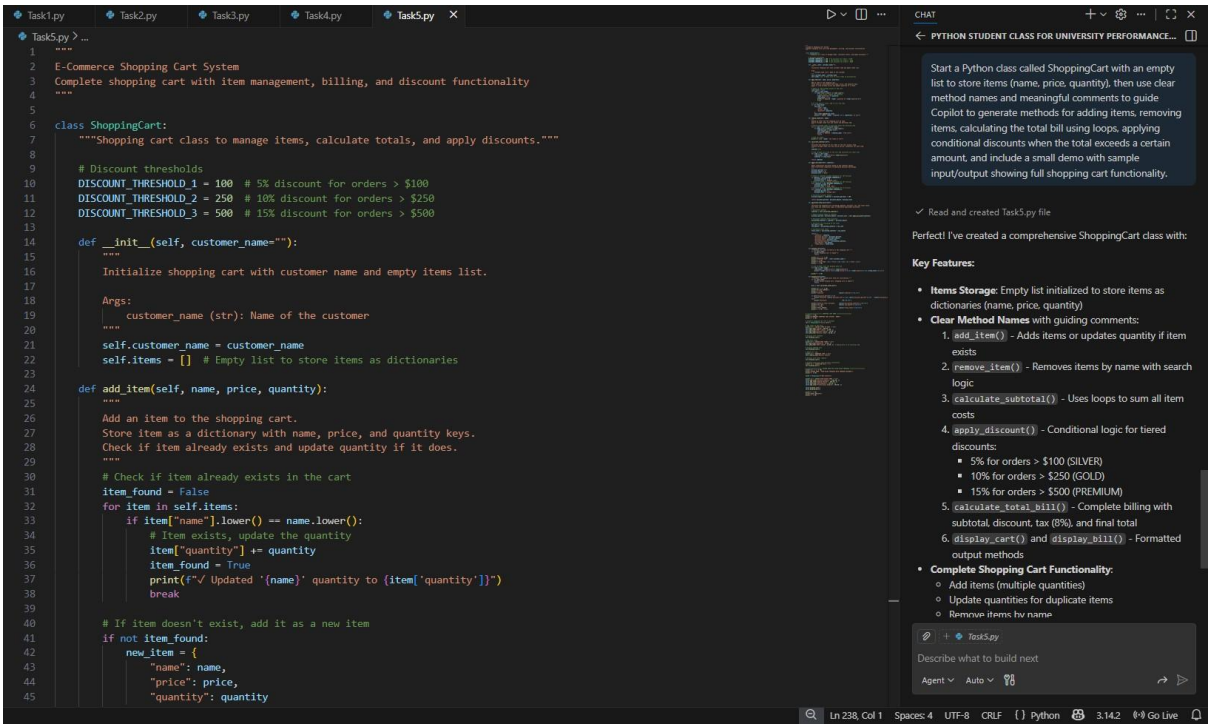
- **Add items to the cart**
- **Remove items from the cart**
- **Calculate the total bill using a loop**
- **Apply conditional discounts (e.g., discount if total exceeds a certain amount)**

Use meaningful comments and method names to guide Copilot.

Expected Outcome

- **A fully implemented ShoppingCart class**
- **Copilot-generated loops and conditional logic**
- **Correct handling of item addition, removal, and discount calculation**

- **Sample input/output demonstrating cart functionality**



OUTPUT:

```
======================================================================
E-COMMERCE SHOPPING CART SYSTEM - DEMO
======================================================================

--- ADDING ITEMS TO CART ---

✓ Added 'Laptop' ($899.99 x 1) to cart
✓ Added 'USB-C Cable' ($15.99 x 2) to cart
✓ Added 'Wireless Mouse' ($29.99 x 1) to cart
✓ Added 'Monitor Stand' ($45.00 x 1) to cart

======================================================================
SHOPPING CART - Alice Smith
======================================================================
Item Name                      Price   Qty         Total
----------------------------------------------------------------------
Laptop                       $  899.99     1 $     899.99
USB-C Cable                  $   15.99     2 $      31.98
Wireless Mouse               $   29.99     1 $      29.99
Monitor Stand                $   45.00     1 $      45.00
----------------------------------------------------------------------

--- ADDING MORE ITEMS ---

✓ Added 'Keyboard' ($79.99 x 1) to cart
✓ Updated 'USB-C Cable' quantity to 3

======================================================================
SHOPPING CART - Alice Smith
======================================================================
Item Name                      Price   Qty         Total
----------------------------------------------------------------------
Laptop                       $  899.99     1 $     899.99
USB-C Cable                  $   15.99     3 $      47.97
Wireless Mouse               $   29.99     1 $      29.99
Monitor Stand                $   45.00     1 $      45.00
Keyboard                     $   79.99     1 $      79.99
----------------------------------------------------------------------

--- REMOVING ITEM ---

✓ Removed 'Monitor Stand' from cart

======================================================================
SHOPPING CART - Alice Smith
======================================================================
Item Name                      Price   Qty         Total
----------------------------------------------------------------------
Laptop                       $  899.99     1 $     899.99
USB-C Cable                  $   15.99     3 $      47.97
```

```
--- GENERATING BILL ---

======================================================================
BILLING SUMMARY
======================================================================
Subtotal:                    $   1057.94
Discount (PREMIUM (15%)  ) 15%   -$    158.69
Subtotal After Discount:     $    899.25
Tax (8%):                    $     71.94
----------------------------------------------------------------------
TOTAL AMOUNT:                $    971.19
======================================================================



======================================================================
SECOND DEMO - HIGH-VALUE PURCHASE WITH PREMIUM DISCOUNT
======================================================================

--- ADDING HIGH-VALUE ITEMS ---

✓ Added 'Desktop Computer' ($1299.99 x 1) to cart
✓ Added 'Gaming Monitor' ($399.99 x 2) to cart
✓ Added 'RGB Keyboard' ($129.99 x 1) to cart
✓ Added 'Professional Headset' ($199.99 x 1) to cart

======================================================================
SHOPPING CART - Bob Johnson
======================================================================
Item Name                      Price   Qty        Total
----------------------------------------------------------------------
Desktop Computer           $  1299.99     1 $    1299.99
Gaming Monitor             $   399.99     2 $     799.98
RGB Keyboard               $   129.99     1 $     129.99
Professional Headset       $   199.99     1 $     199.99
----------------------------------------------------------------------

======================================================================
BILLING SUMMARY
======================================================================
Subtotal:                    $   2429.95
Discount (PREMIUM (15%)  ) 15%   -$    364.49
Subtotal After Discount:     $   2065.46
Tax (8%):                    $    165.24
----------------------------------------------------------------------
TOTAL AMOUNT:                $   2230.69
======================================================================

======================================================================
DEMO COMPLETE
```