SR UNIVERSITY

AI ASSIST CODING

Lab 6: AI-Based Code Completion – Classes, Loops, and Conditionals

NAME:Meer Burhan Ali Hashmi

HTNO2503A51L44

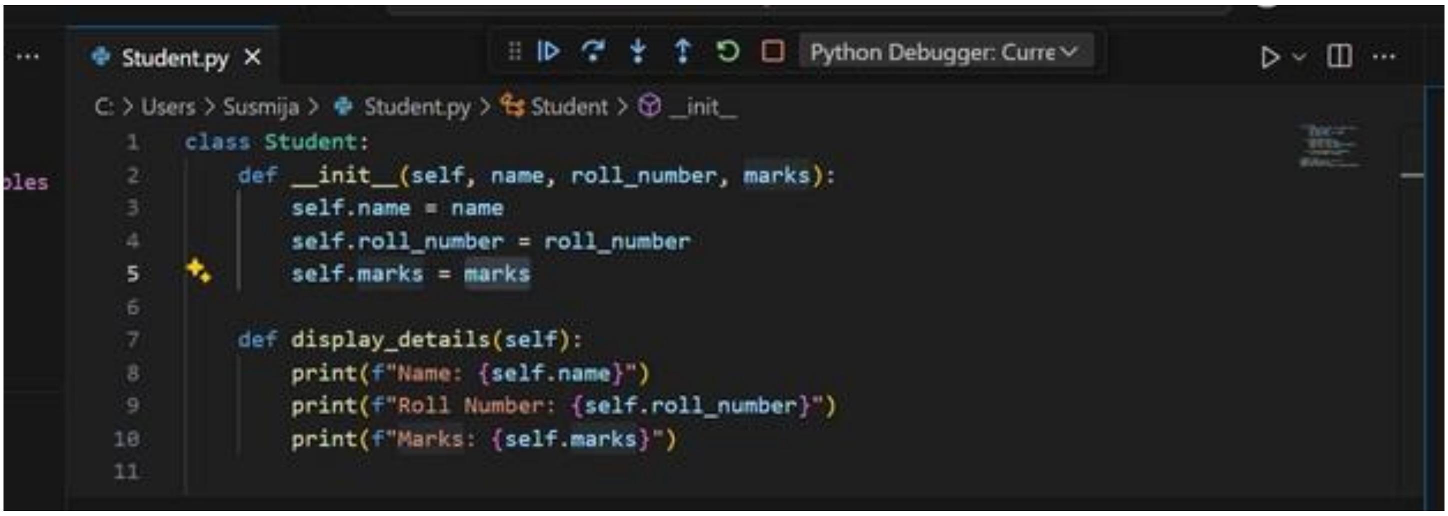
BATCH:20

TASK #1:

Prompt:

• Start a Python class named Student with attributes name, roll number, and marks, Prompt GitHub Copilot to complete methods for displaying details and checking if marks are above average.

Code Generated:

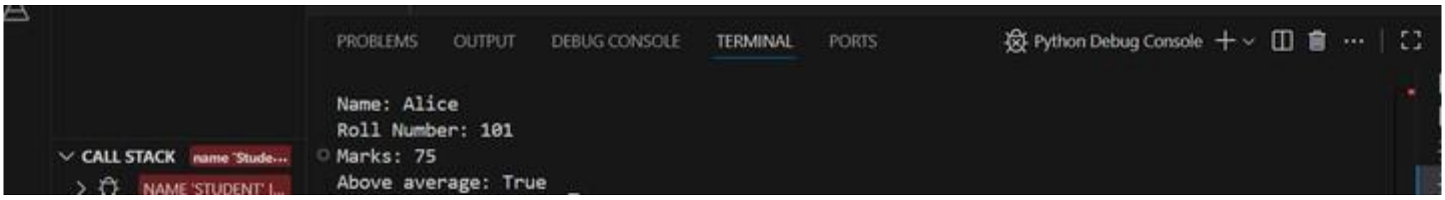


```python
class Student:
    def __init__(self, name, roll_number, marks):
        self.name = name
        self.roll_number = roll_number
        self.marks = marks

    def display_details(self):
        print(f"Name: {self.name}")
        print(f"Roll Number: {self.roll_number}")
        print(f"Marks: {self.marks}")

```

Output After executing Code:



```
Name: Alice
Roll Number: 101
Marks: 75
Above average: True
```

Observations:

Here are the observations for your Employee class code:

The code is clear, concise, and follows Python conventions.

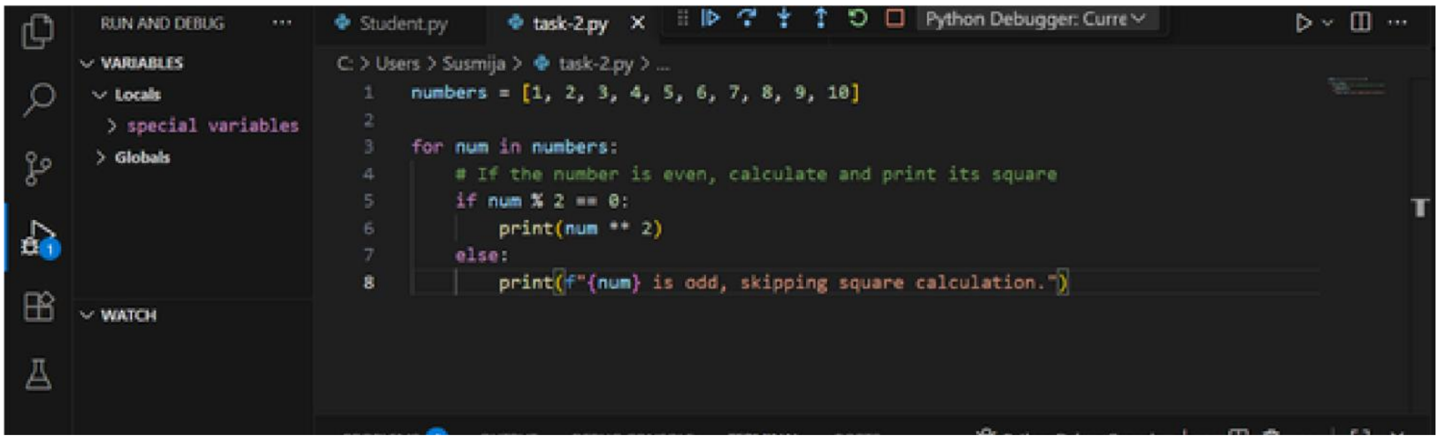
There is no method for updating salary or handling bonuses yet (unless you add the give_bonus method as previously suggested).
No input validation is present (e.g., checking for negative salary or bonus values).
The class is suitable for basic employee salary calculations and can be easily extended for more features.

TASK #2:

Prompt:

- Write the first two lines of a for loop to iterate through a list o f numbers. Use a comment prompt to let Copilot suggest how to calculate and print the square of even numbers only.

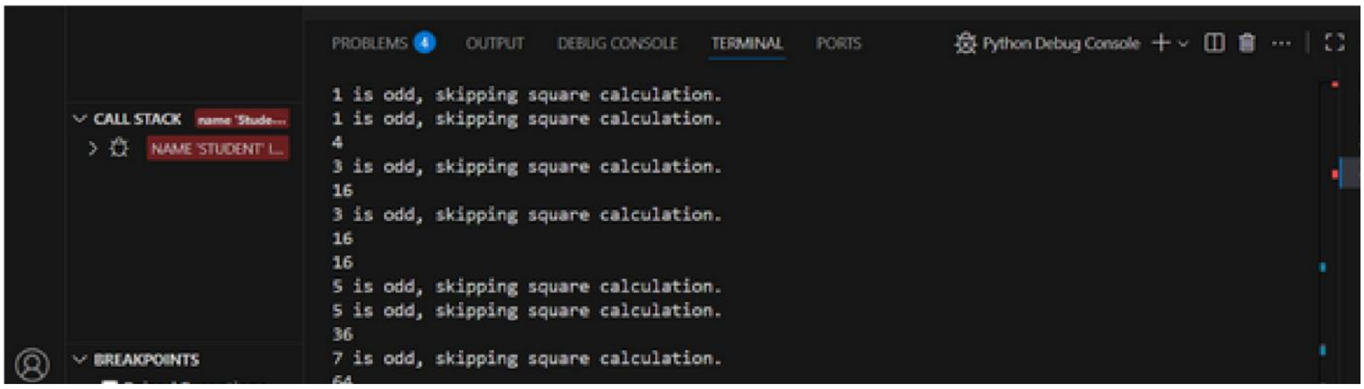
Code Generated:



```python
numbers = [1, 2, 3, 4, 5, 6, 7, 8, 9, 10]

for num in numbers:
    # If the number is even, calculate and print its square
    if num % 2 == 0:
        print(num ** 2)
    else:
        print(f"{num} is odd, skipping square calculation.")
```

Output After executing Code:



```
1 is odd, skipping square calculation.
1 is odd, skipping square calculation.
4
3 is odd, skipping square calculation.
16
3 is odd, skipping square calculation.
16
16
5 is odd, skipping square calculation.
5 is odd, skipping square calculation.
36
7 is odd, skipping square calculation.
64
```

Observations:

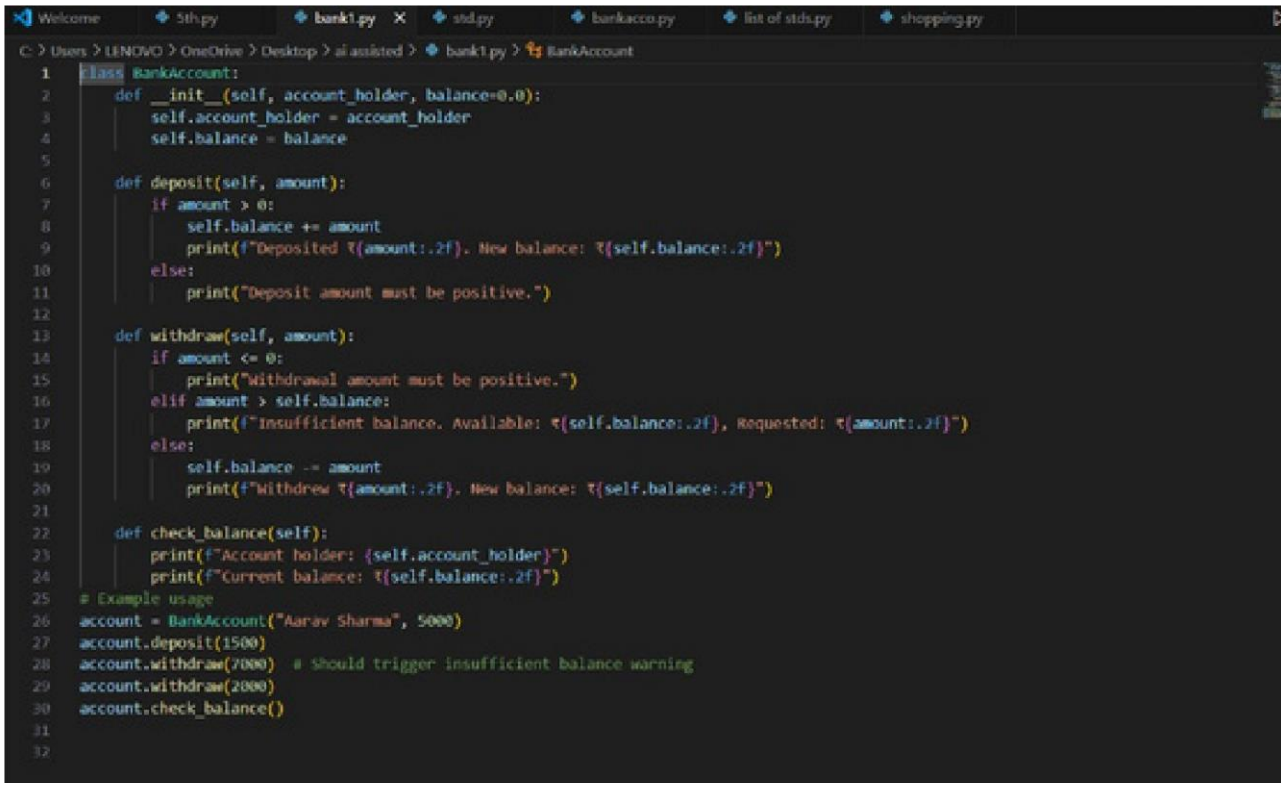
The function Iterates through numbers.
It results in Prints their square using num ** 2.

TASK#3:

PROMPT:

•Create a class called Bank Account with attributes accountholder and balance .Use Copilot to complete methods for deposit() ,withdraw() ,and check for insufficient balance.

Code Generated:


Welcome
5th.py
bank1.py
std.py
bankacco.py
list of stds.py
shopping.py
C: > Users > LENOVO > OneDrive > Desktop > ai assisted > bank1.py > BankAccount

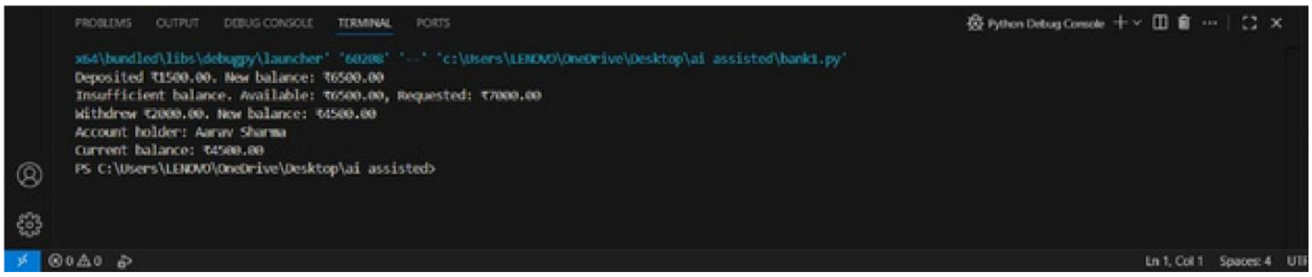
```python
class BankAccount:
    def __init__(self, account_holder, balance=0.0):
        self.account_holder = account_holder
        self.balance = balance

    def deposit(self, amount):
        if amount > 0:
            self.balance += amount
            print(f"Deposited ₹{amount:.2f}. New balance: ₹{self.balance:.2f}")
        else:
            print("Deposit amount must be positive.")

    def withdraw(self, amount):
        if amount <= 0:
            print("Withdrawal amount must be positive.")
        elif amount > self.balance:
            print(f"Insufficient balance. Available: ₹{self.balance:.2f}, Requested: ₹{amount:.2f}")
        else:
            self.balance -= amount
            print(f"Withdrew ₹{amount:.2f}. New balance: ₹{self.balance:.2f}")

    def check_balance(self):
        print(f"Account holder: {self.account_holder}")
        print(f"Current balance: ₹{self.balance:.2f}")
# Example usage
account = BankAccount("Aarav Sharma", 5000)
account.deposit(1500)
account.withdraw(7000)  # Should trigger insufficient balance warning
account.withdraw(2000)
account.check_balance()
```

Output After executing Code:



```
x64\bundled\libs\debugpy\launcher' '60208' '--' 'c:\Users\LENOVO\OneDrive\Desktop\ai assisted\bank1.py'
Deposited ₹1500.00. New balance: ₹6500.00
Insufficient balance. Available: ₹6500.00, Requested: ₹7000.00
Withdrew ₹2000.00. New balance: ₹4500.00
Account holder: Aarav Sharma
Current balance: ₹4500.00
PS C:\Users\LENOVO\OneDrive\Desktop\ai assisted>
```

Observations:

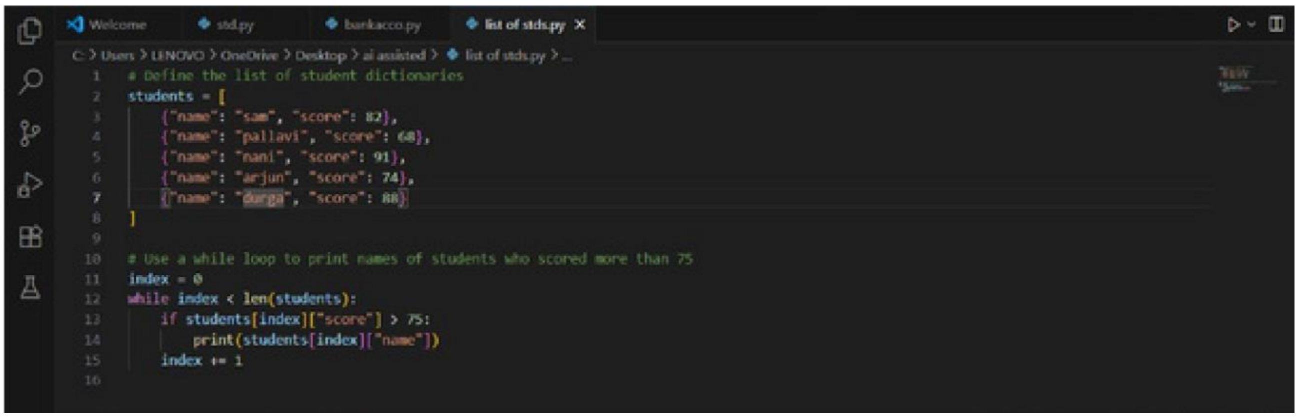
We used function deposit(): increases balance.we can able to use the function withdraw(): prevents overdrawing using if conditions .its results in check_balance(): shows current balance.

TASK#4:

PROMPT:

Define a list of student dictionaries with keys name and score. Ask Copilot to write a while loop to print the names of students who scored more than 75.

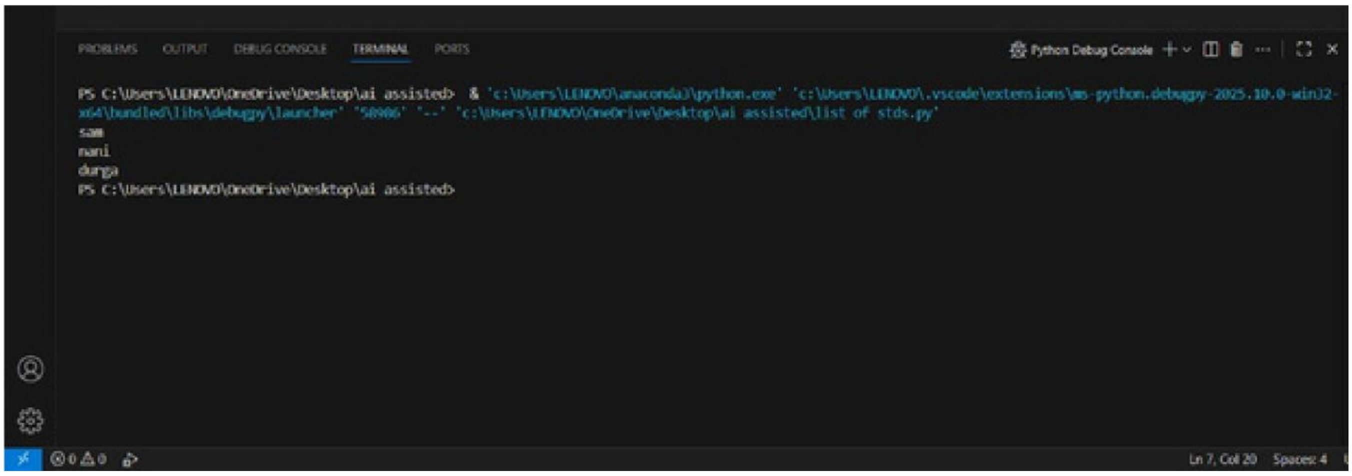
Code Generated:


Welcome
std.py
bankacco.py
list of stds.py
C: > Users > LENOVO > OneDrive > Desktop > ai assisted > list of stds.py > ...

```python
# Define the list of student dictionaries
students = [
    {"name": "sam", "score": 82},
    {"name": "pallavi", "score": 68},
    {"name": "nani", "score": 91},
    {"name": "arjun", "score": 74},
    {"name": "durga", "score": 88}
]

# Use a while loop to print names of students who scored more than 75
index = 0
while index < len(students):
    if students[index]["score"] > 75:
        print(students[index]["name"])
    index += 1
```

Output After executing Code:



```
PS C:\Users\LENOVO\OneDrive\Desktop\ai assisted>  & 'c:\Users\LENOVO\anaconda3\python.exe' 'c:\Users\LENOVO\.vscode\extensions\ms-python.debugpy-2025.10.0-win32-x64\bundled\libs\debugpy\launcher' '58986' '--' 'c:\Users\LENOVO\OneDrive\Desktop\ai assisted\list of stds.py'
sam
nani
durga
PS C:\Users\LENOVO\OneDrive\Desktop\ai assisted>
```

Observations:

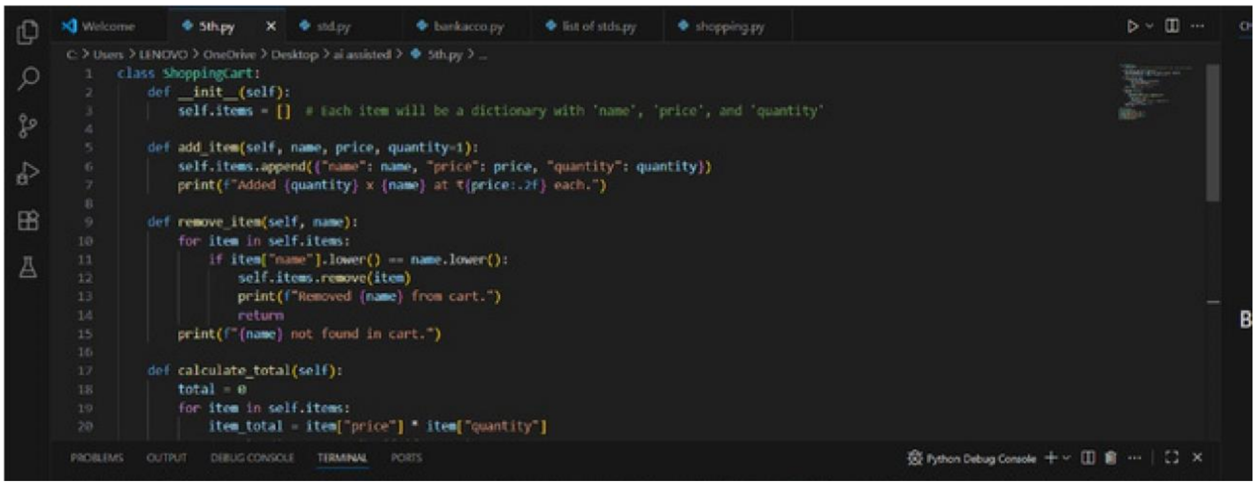
We Uses while loop with counter in The loop Checks if score > 75.
It will Prints qualifying students.

TASK#5:

PROMPT:

- Begin writing a class Shopping Cart with an empty items list. Prompt Copilot to generate methods to add_item , remove_item , and use a loop to calculate the total bill using conditional discounts.

Code Generated:

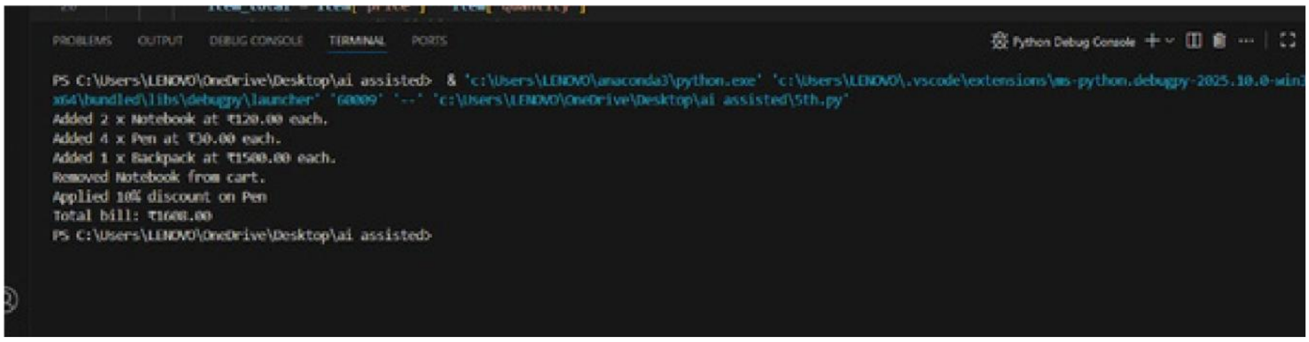

```python
class ShoppingCart:
    def __init__(self):
        self.items = []  # Each item will be a dictionary with 'name', 'price', and 'quantity'

    def add_item(self, name, price, quantity=1):
        self.items.append({"name": name, "price": price, "quantity": quantity})
        print(f"Added {quantity} x {name} at ₹{price:.2f} each.")

    def remove_item(self, name):
        for item in self.items:
            if item["name"].lower() == name.lower():
                self.items.remove(item)
                print(f"Removed {name} from cart.")
                return
        print(f"{name} not found in cart.")

    def calculate_total(self):
        total = 0
        for item in self.items:
            item_total = item["price"] * item["quantity"]
```

Output After executing Code:


```
PS C:\Users\LENOVO\OneDrive\Desktop\ai assisted>  & 'c:\Users\LENOVO\anaconda3\python.exe' 'c:\Users\LENOVO\.vscode\extensions\ms-python.debugpy-2025.10.0-win3
x64\bundled\libs\debugpy\launcher' '60009' '--' 'c:\Users\LENOVO\OneDrive\Desktop\ai assisted\5th.py'
Added 2 x Notebook at ₹120.00 each.
Added 4 x Pen at ₹30.00 each.
Added 1 x Backpack at ₹1500.00 each.
Removed Notebook from cart.
Applied 10% discount on Pen
Total bill: ₹1608.00
PS C:\Users\LENOVO\OneDrive\Desktop\ai assisted>
```

Observations:

If we want to add item use function-add_item(): adds item to cart.
If we want to remove item use function remove_item(): removes by name.
If we want to calculate the total use function calculate_total(): loops through cart, applies discounts with if-elif.