

ASSIGNMENT-6.4

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Batch-10

TASK-1:

Prompt:

Create a method to display the student's name, roll number, and marks in a neat format
Write a method that takes class average as input

Use if-else to compare student's marks with the class average

Return a message saying whether the student performed above or below average

CODE:

```
class Student:
```

```
    def __init__(self, name, roll_number, marks):
```

```
        self.name = name
```

```
        self.roll_number = roll_number
```

```
        self.marks = marks
```

```
    def display_info(self):
```

```
        print(f"Name: {self.name}")
```

```
        print(f"Roll Number: {self.roll_number}")
```

```
        print(f"Marks: {self.marks}")
```

```
    def compare_with_average(self, class_average):
```

```
        if self.marks > class_average:
```

```
            return f"{self.name} performed above average."
```

```
        elif self.marks < class_average:
```

```
            return f"{self.name} performed below average."
```

```
        else:
```

```
            return f"{self.name} performed exactly at the average."
```

Example usage

```
student1 = Student("Alice", 1, 85)
```

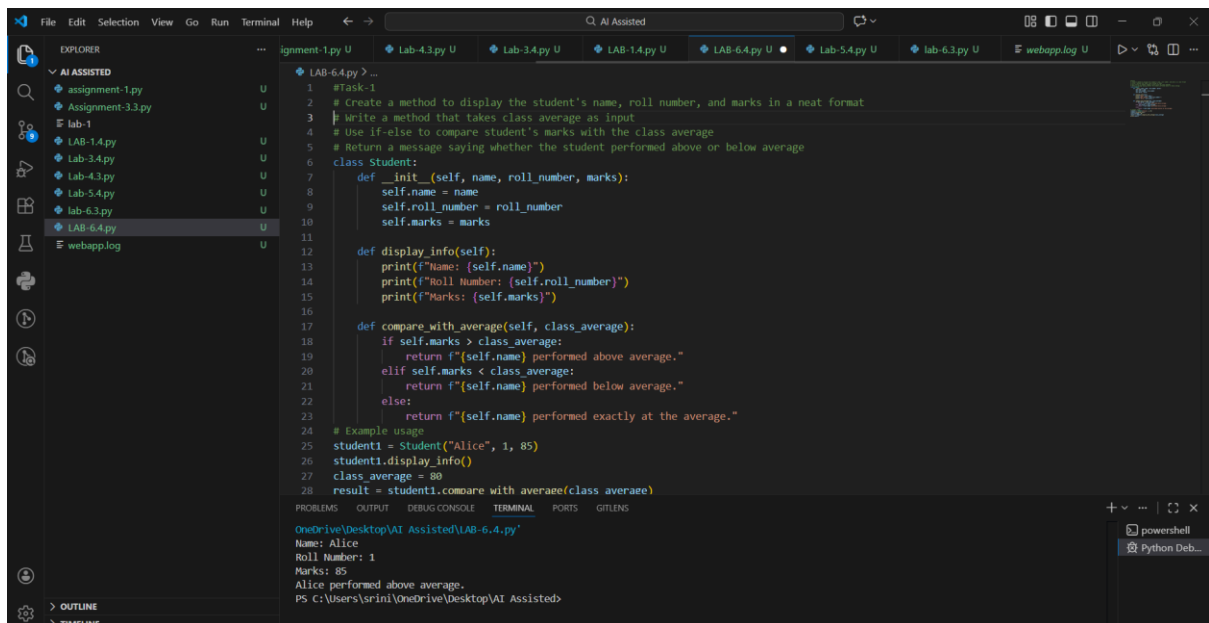
```
student1.display_info()
```

```
class_average = 80
```

```
result = student1.compare_with_average(class_average)
```

```
print(result)
```

Output:

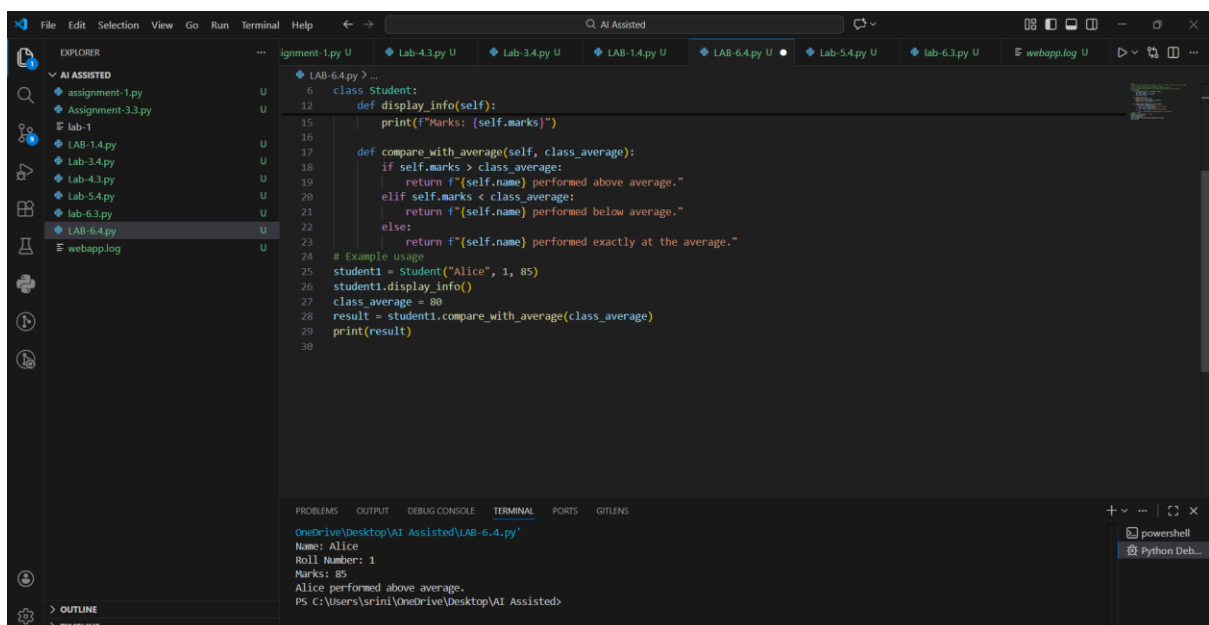


The screenshot shows the Visual Studio Code editor with a Python file named 'LAB-6.4.py'. The code defines a 'Student' class with methods for displaying information and comparing marks with a class average. The example usage creates a 'Student' object for 'Alice' with roll number 1 and marks 85, displays her info, and compares her marks with a class average of 80. The terminal output shows the execution results.

```
1 #Task-1
2 # Create a method to display the student's name, roll number, and marks in a neat format
3 # Write a method that takes class average as input
4 # Use if-else to compare student's marks with the class average
5 # Return a message saying whether the student performed above or below average
6 class Student:
7     def __init__(self, name, roll_number, marks):
8         self.name = name
9         self.roll_number = roll_number
10        self.marks = marks
11
12    def display_info(self):
13        print(f"Name: {self.name}")
14        print(f"Roll Number: {self.roll_number}")
15        print(f"Marks: {self.marks}")
16
17    def compare_with_average(self, class_average):
18        if self.marks > class_average:
19            return f"{self.name} performed above average."
20        elif self.marks < class_average:
21            return f"{self.name} performed below average."
22        else:
23            return f"{self.name} performed exactly at the average."
24
25 # Example usage
26 student1 = Student("Alice", 1, 85)
27 student1.display_info()
28 class_average = 80
29 result = student1.compare_with_average(class_average)
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS GITLENS

```
OneDrive\Desktop\AI Assisted\LAB-6.4.py
Name: Alice
Roll Number: 1
Marks: 85
Alice performed above average.
PS C:\Users\srini\OneDrive\Desktop\AI Assisted>
```



This screenshot shows the same VS Code editor window, but with the code scrolled down to show the example usage and the final print statement. The terminal output is identical to the previous screenshot, showing the execution results of the code.

```
25 # Example usage
26 student1 = Student("Alice", 1, 85)
27 student1.display_info()
28 class_average = 80
29 result = student1.compare_with_average(class_average)
30 print(result)
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS GITLENS

```
OneDrive\Desktop\AI Assisted\LAB-6.4.py
Name: Alice
Roll Number: 1
Marks: 85
Alice performed above average.
PS C:\Users\srini\OneDrive\Desktop\AI Assisted>
```

Analysis:

In this task, AI helped to complete the methods inside the Student class.

The display_info() method prints the student's name, roll number, and marks using self, which shows correct use of class attributes.

The compare_with_average() method uses if-else conditions to check whether the student scored above or below the class average. The messages returned are clear and meaningful. The AI-generated code is correct and easy to understand.

TASK-2

Prompt:

Check if the current reading is an even number using modulus operator

If the number is even, calculate its square value

Print the even reading and its square in a clear formatted message

CODE:

```
current_reading = int(input("Enter the current reading: "))
```

```
if current_reading % 2 == 0:
```

```
    square_value = current_reading ** 2
```

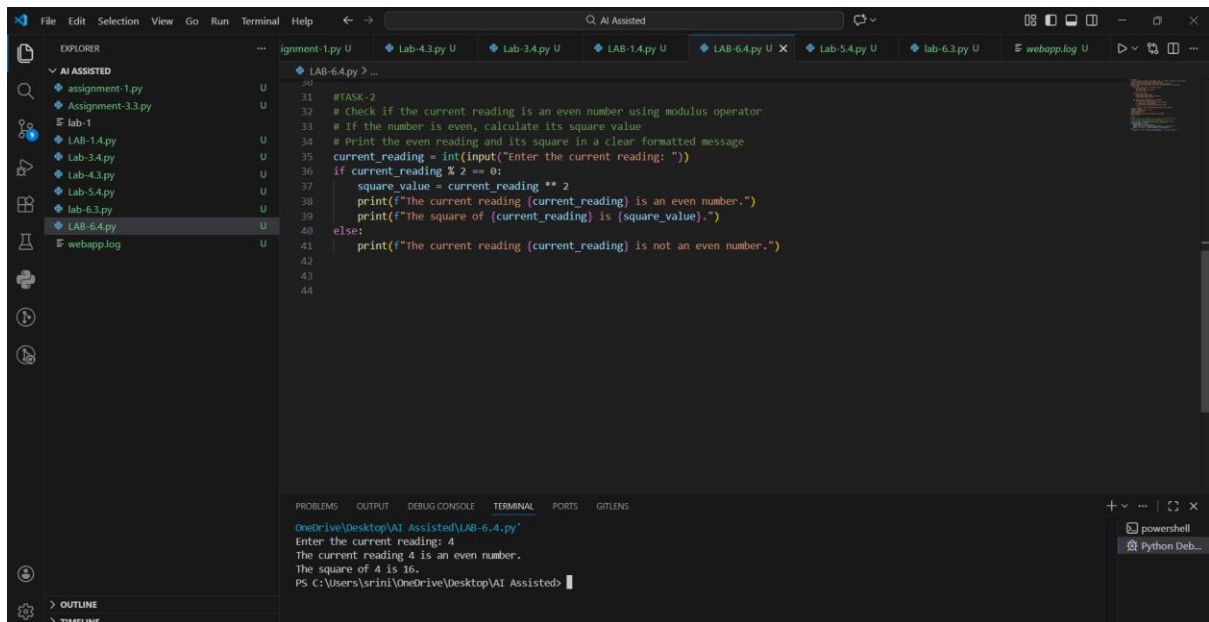
```
    print(f"The current reading {current_reading} is an even number.")
```

```
    print(f"The square of {current_reading} is {square_value}.")
```

```
else:
```

```
    print(f"The current reading {current_reading} is not an even number.")
```

Output:



Analysis:

In this task, AI helped write logic to check whether a number is even. It used the modulus operator (%) correctly. If the number is even, the program calculates the square and prints it.

The condition works properly for both even and odd numbers. The output format is also clear. This shows that AI can correctly generate basic loop/conditional logic.

TASK-3:

Prompt:

Create a method to deposit money into the account

Add the amount to balance and print the updated balance

Create a method to withdraw money from the account

Use if-else to check if there is enough balance before withdrawing

If balance is insufficient, show a proper warning message

Otherwise, deduct the amount and display the remaining balance

CODE:

```
class BankAccount:
```

```
    def __init__(self, account_holder, balance=0):
```

```
        self.account_holder = account_holder
```

```
        self.balance = balance
```

```
def deposit(self, amount):  
  
    self.balance += amount  
  
    print(f"Deposited {amount}. Updated balance: {self.balance}")
```

```
def withdraw(self, amount):  
  
    if amount > self.balance:  
  
        print("Insufficient balance. Withdrawal failed.")  
  
    else:  
  
        self.balance -= amount  
  
        print(f"Withdrew {amount}. Remaining balance: {self.balance}")
```

Example usage

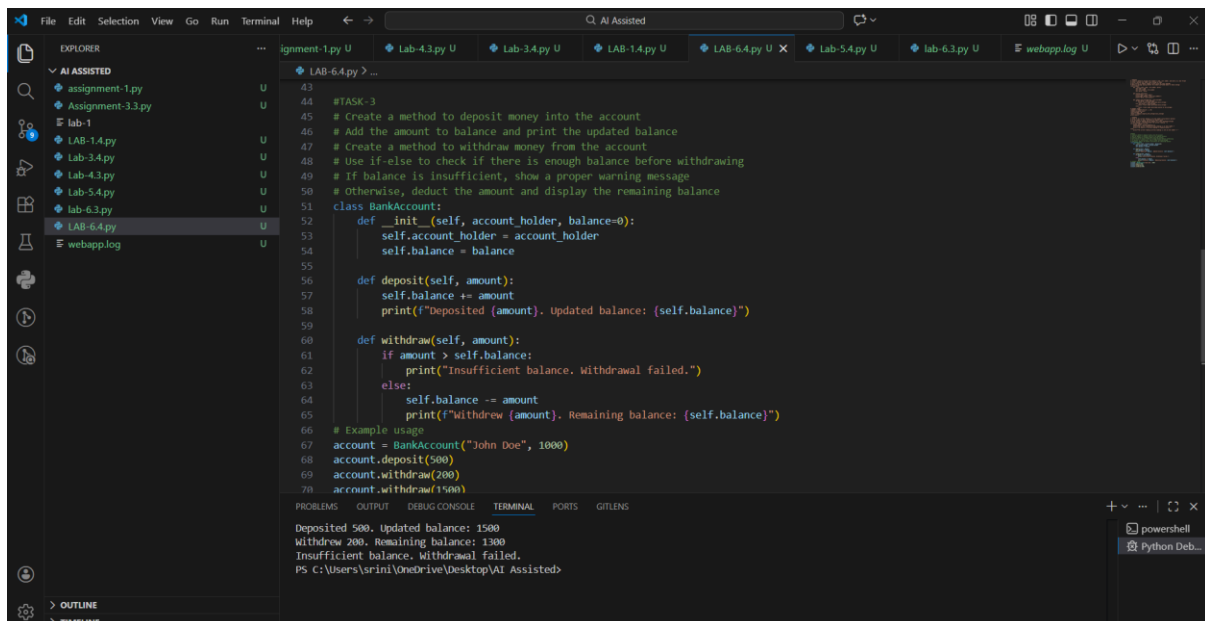
```
account = BankAccount("John Doe", 1000)
```

```
account.deposit(500)
```

```
account.withdraw(200)
```

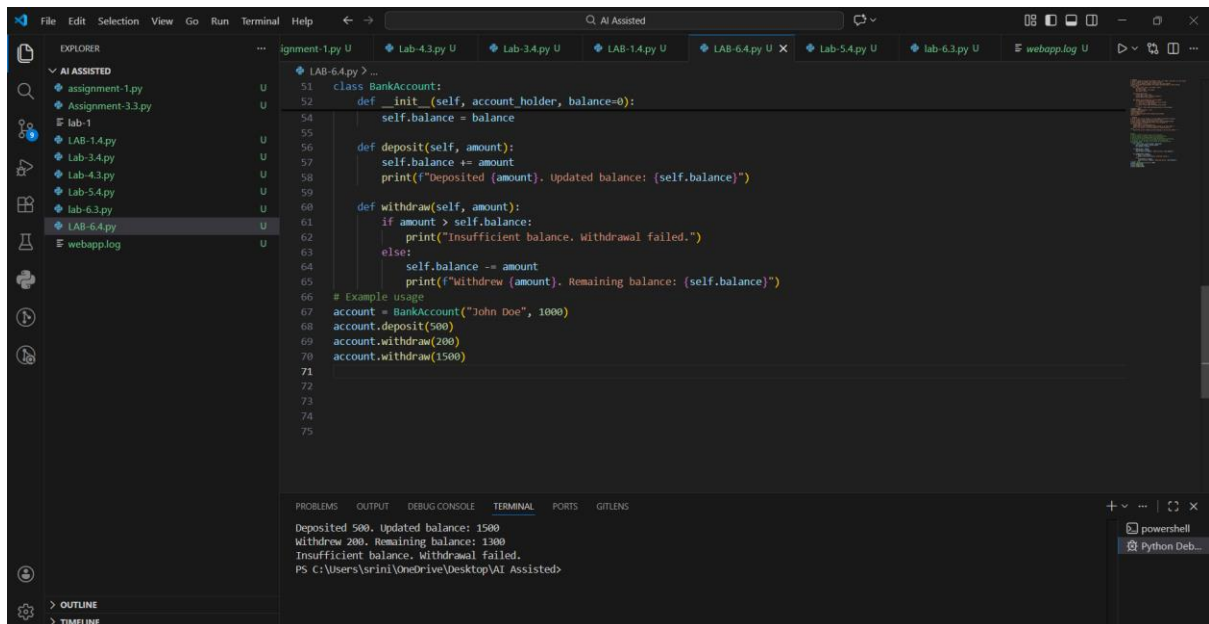
```
account.withdraw(1500)
```

Output:



The screenshot shows a Visual Studio Code editor window with a Python file named 'LAB-6.4.py' open. The file contains a class 'BankAccount' with methods 'deposit' and 'withdraw', and an example usage section. The terminal at the bottom shows the output of the script, which matches the expected output from the text blocks above.

```
LAB-6.4.py > ...  
43  
44 # TASK-3  
45 # Create a method to deposit money into the account  
46 # Add the amount to balance and print the updated balance  
47 # Create a method to withdraw money from the account  
48 # Use if-else to check if there is enough balance before withdrawing  
49 # If balance is insufficient, show a proper warning message  
50 # Otherwise, deduct the amount and display the remaining balance  
51 class BankAccount:  
52     def __init__(self, account_holder, balance=0):  
53         self.account_holder = account_holder  
54         self.balance = balance  
55  
56     def deposit(self, amount):  
57         self.balance += amount  
58         print(f"Deposited {amount}. Updated balance: {self.balance}")  
59  
60     def withdraw(self, amount):  
61         if amount > self.balance:  
62             print("Insufficient balance. Withdrawal failed.")  
63         else:  
64             self.balance -= amount  
65             print(f"Withdrew {amount}. Remaining balance: {self.balance}")  
66  
67 # Example usage  
68 account = BankAccount("John Doe", 1000)  
69 account.deposit(500)  
70 account.withdraw(200)  
71 account.withdraw(1500)  
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Analysis:

Here, AI completed the BankAccount class by adding deposit and withdraw methods. The deposit method adds money to the balance, and the withdraw method checks if enough balance is available before subtracting money.

If the balance is low, it shows an error message. This shows correct use of if-else statements and class variables. The AI-generated solution is practical and works correctly.

TASK-4:

Prompt:

Use a while loop to iterate through each student in the list

Check if the student's score is greater than 75

If eligible, print the student's name with a scholarship eligibility message

Increase the index value to move to the next student

CODE:

```

students = [
    {"name": "Alice", "score": 85},
    {"name": "Bob", "score": 70},
    {"name": "Charlie", "score": 90},
    {"name": "David", "score": 60}

```

```
]
```

```
index = 0
```

```
while index < len(students):
```

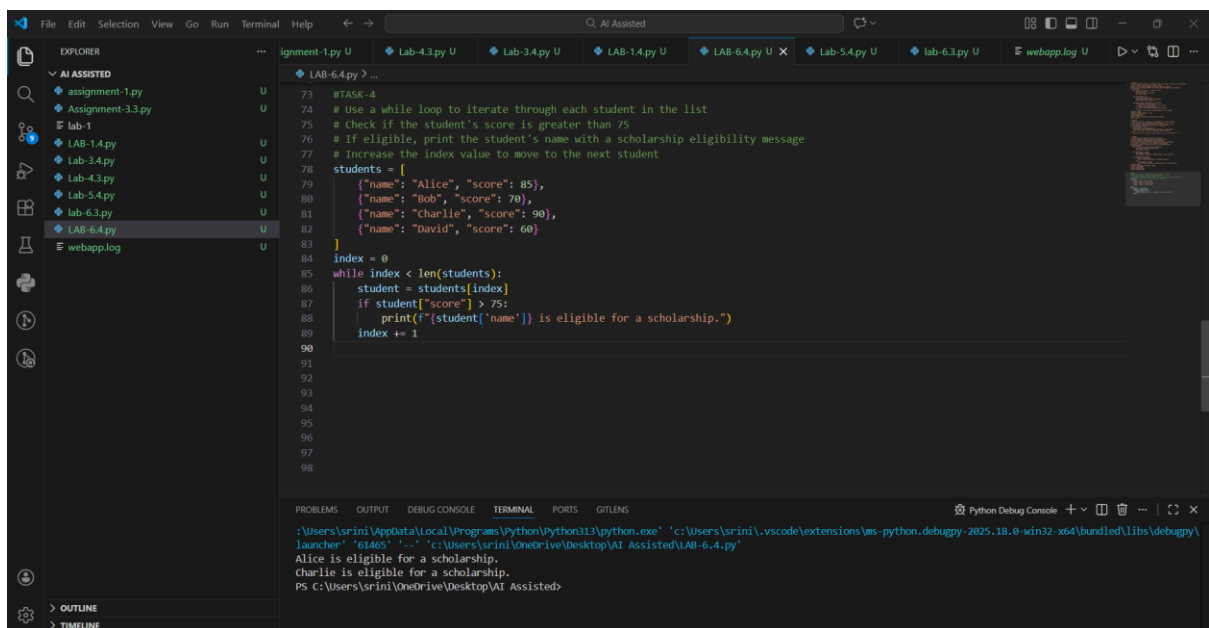
```
    student = students[index]
```

```
    if student["score"] > 75:
```

```
        print(f"{student['name']} is eligible for a scholarship.")
```

```
    index += 1
```

Output:



The screenshot shows a VS Code editor with a Python file named 'LAB-6.4.py'. The code defines a list of students and a while loop that iterates through them, printing the names of those with scores above 75. The terminal output shows the execution of the script, resulting in the names 'Alice' and 'Charlie' being printed.

```
73 #TASK-4
74 # Use a while loop to iterate through each student in the list
75 # Check if the student's score is greater than 75
76 # If eligible, print the student's name with a scholarship eligibility message
77 # Increase the index value to move to the next student
78 students = [
79     {"name": "Alice", "score": 85},
80     {"name": "Bob", "score": 70},
81     {"name": "Charlie", "score": 90},
82     {"name": "David", "score": 60}
83 ]
84 index = 0
85 while index < len(students):
86     student = students[index]
87     if student["score"] > 75:
88         print(f"{student['name']} is eligible for a scholarship.")
89     index += 1
90
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```

```
Python Debug Console
C:\Users\sriini\AppData\Local\Programs\Python\Python312\python.exe: 'c:\Users\sriini\.vscode\extensions\ms-python.debugpy-2025.18.0-win32-x64\bundle\libs\debugpy\launcher' 61465' '- ' 'c:\Users\sriini\OneDrive\Desktop\AI Assisted\LAB-6.4.py'
Alice is eligible for a scholarship.
Charlie is eligible for a scholarship.
PS C:\Users\sriini\OneDrive\Desktop\AI Assisted
```

Analysis:

In this task, AI helped generate a while loop that goes through a list of students. It checks each student's score and prints the names of students who scored above 75.

The loop control using index and the condition check are correct. The output is clear and easy to read. This shows AI can generate loop logic with conditions properly.

TASK-5:

Prompt:

Write a method to add an item to the cart with name, price, and quantity

Write a method to remove an item from the cart by matching the item name

Create a method to calculate the total bill by looping through all items

Multiply price and quantity for each item and add to total amount

Use a condition to apply a discount if total bill exceeds a certain limit

Display the final bill after applying the discount

CODE:

```
class ShoppingCart:

    def __init__(self):

        self.cart = []

    def add_item(self, name, price, quantity):

        self.cart.append({"name": name, "price": price, "quantity": quantity})

    def remove_item(self, name):

        self.cart = [item for item in self.cart if item["name"] != name]

    def calculate_total(self):

        total = sum(item["price"] * item["quantity"] for item in self.cart)

        if total > 100:

            total *= 0.9

        return total

# Example usage

cart = ShoppingCart()

cart.add_item("Laptop", 999, 1)

cart.add_item("Mouse", 25, 2)

cart.add_item("Keyboard", 45, 1)

print(f"Total bill: {cart.calculate_total()}")
```

Output:


```
92 #TASK-5
93 # Write a method to add an item to the cart with name, price, and quantity
94 # Write a method to remove an item from the cart by matching the item name
95 # Create a method to calculate the total bill by looping through all items
96 # Multiply price and quantity for each item and add to total amount
97 # Use a condition to apply a discount if total bill exceeds a certain limit
98 # Display the final bill after applying the discount
99 class ShoppingCart:
100     def __init__(self):
101         self.cart = []
102
103     def add_item(self, name, price, quantity):
104         self.cart.append({"name": name, "price": price, "quantity": quantity})
105     def remove_item(self, name):
106         self.cart = [item for item in self.cart if item["name"] != name]
107     def calculate_total(self):
108         total = sum(item["price"] * item["quantity"] for item in self.cart)
109         if total > 100:
110             total *= 0.9
111         return total
112
113 # Example usage
114 cart = ShoppingCart()
115 cart.add_item("laptop", 999, 1)
116 cart.add_item("Mouse", 25, 2)
117 cart.add_item("Keyboard", 45, 1)
118 print(f"Total bill: {cart.calculate_total()}")
```

Python Debug Console

```
PS C:\Users\sirini\OneDrive\Desktop\AI Assisted> & 'c:\Users\sirini\AppData\Local\Programs\Python\Python313\python.exe' 'c:\Users\sirini\.vscode\extensions\ms-pyt
hon.debugpy-2025.18.0-win32-x64\bundle\libs\debugpy\launcher' '59168' '--' 'c:\Users\sirini\OneDrive\Desktop\AI Assisted\LAB-6.4.py'
Total bill: 984.6
PS C:\Users\sirini\OneDrive\Desktop\AI Assisted>
```

Analysis:

For this task, AI generated methods for adding items, removing items, and calculating the total bill. It used a loop to calculate the total price based on item price and quantity.

AI also added a discount condition when the total exceeds a limit. This shows correct use of lists, loops, and if conditions. The shopping cart system works correctly and simulates a real example.