ASSIGNMENT-6.4

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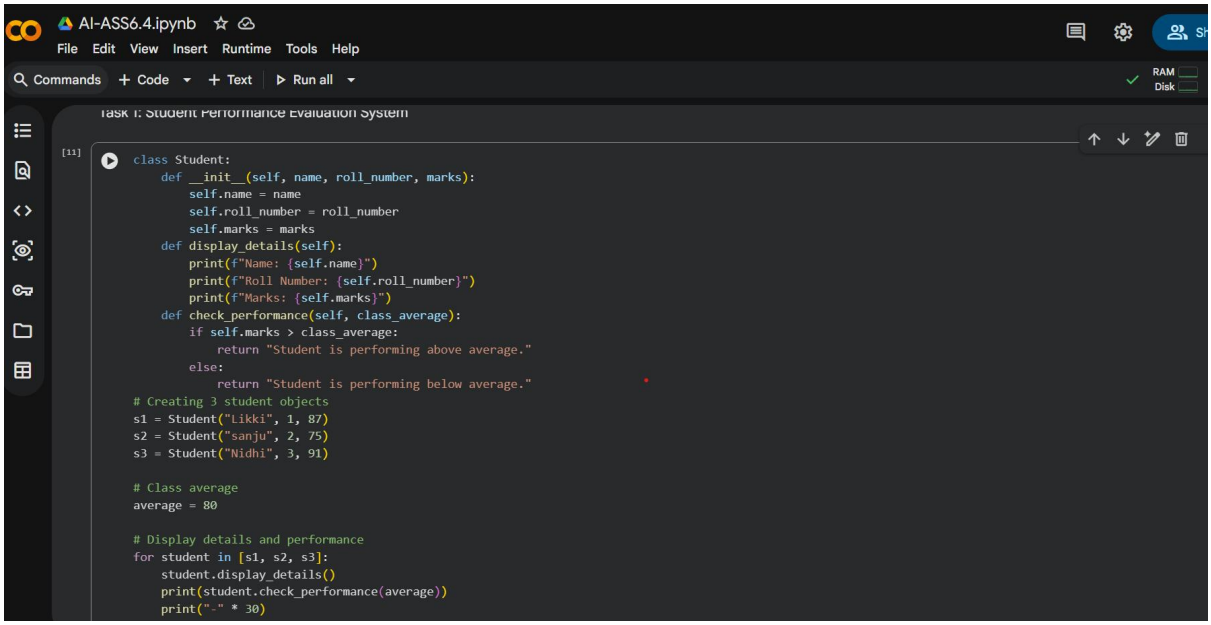
HT.NO:-2303A52393

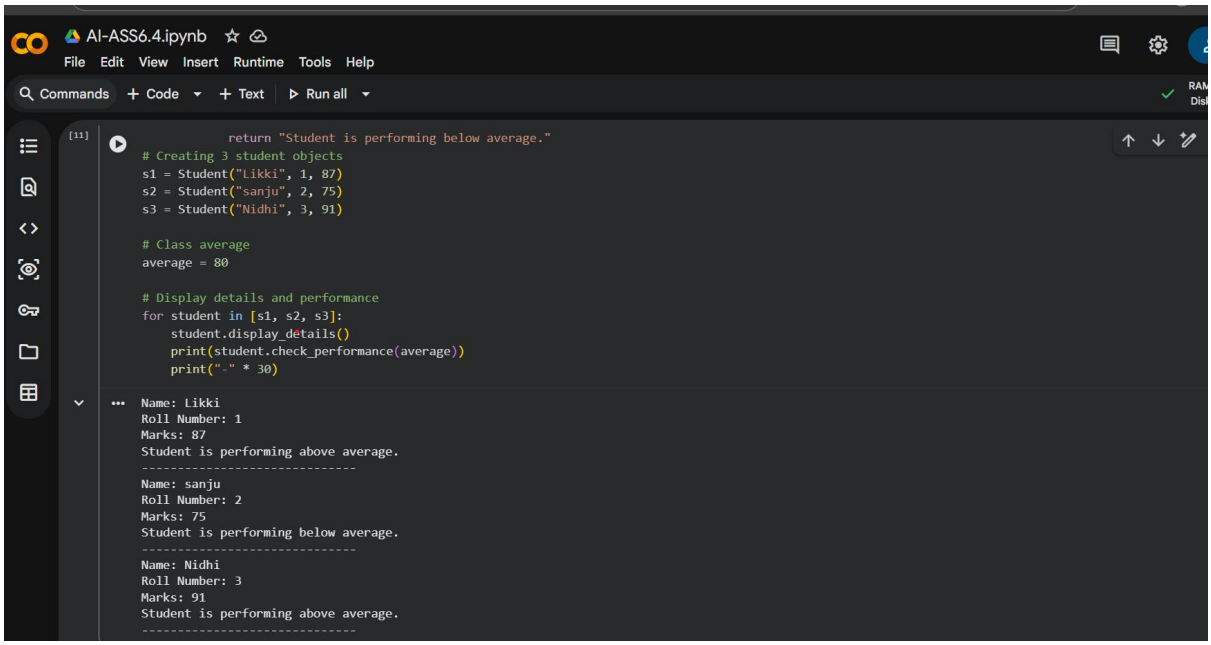
Batch:-43

Task 1 – Student Performance Evaluation.

Write a method that displays all the student details using the class attributes. The method should print the name, roll number, and marks in a clear format. Then create another method that compares the student's marks with the class average. Use an if-else condition to decide whether the student is above or below average. Return a meaningful message based on this comparison.

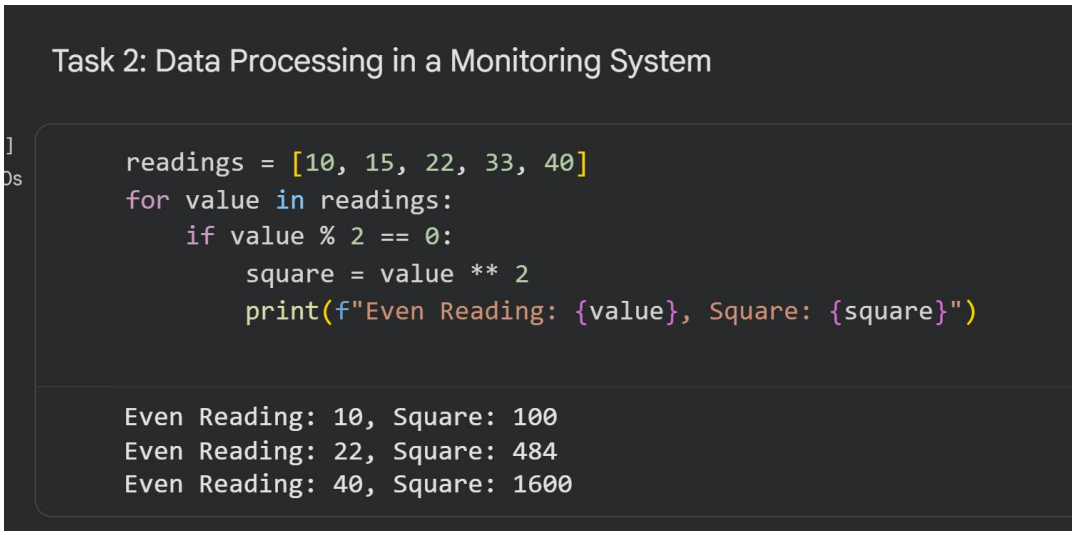


OUTPUT:-



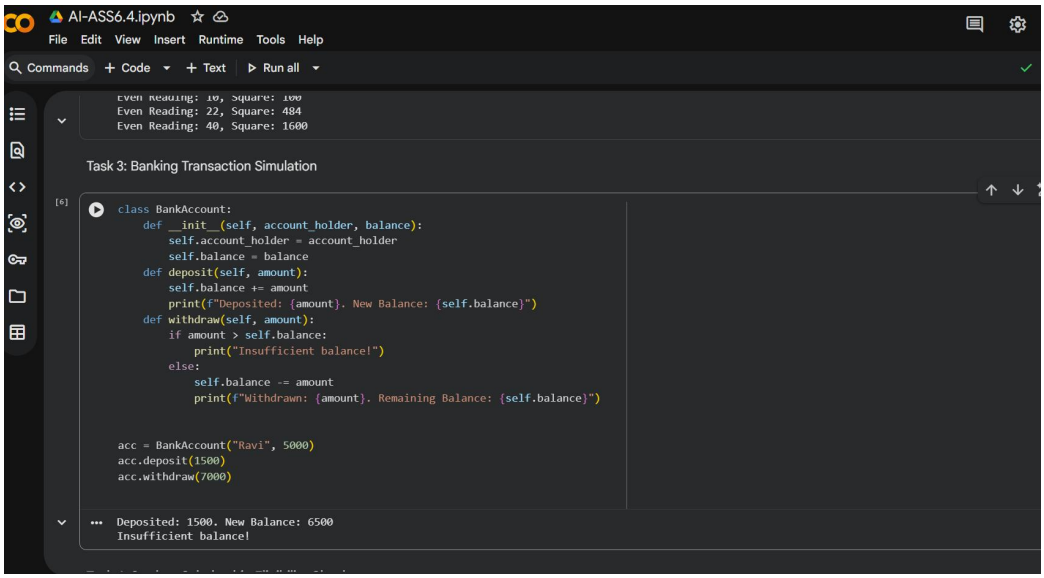
Task 2 – Data Processing in Monitoring System.

Inside the loop, add logic to identify whether the current number is even by using the modulus operator. If the number is even, calculate its square value. Print both the number and its square in a readable format. Make sure odd numbers are ignored. Use proper conditional statements to control the flow.



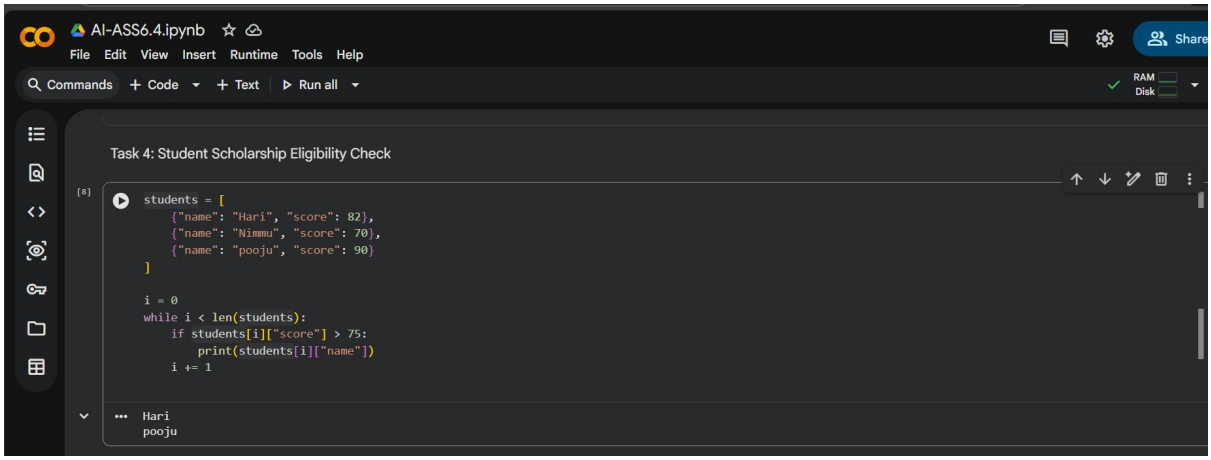
Task 3 – Banking Transaction Simulation.

Create a deposit method that increases the account balance by the given amount. Also write a withdraw method that deducts money from the balance. Use an if-else condition to prevent withdrawal if the balance is insufficient. Display user-friendly messages after each transaction. Access all data using the class attributes with self.



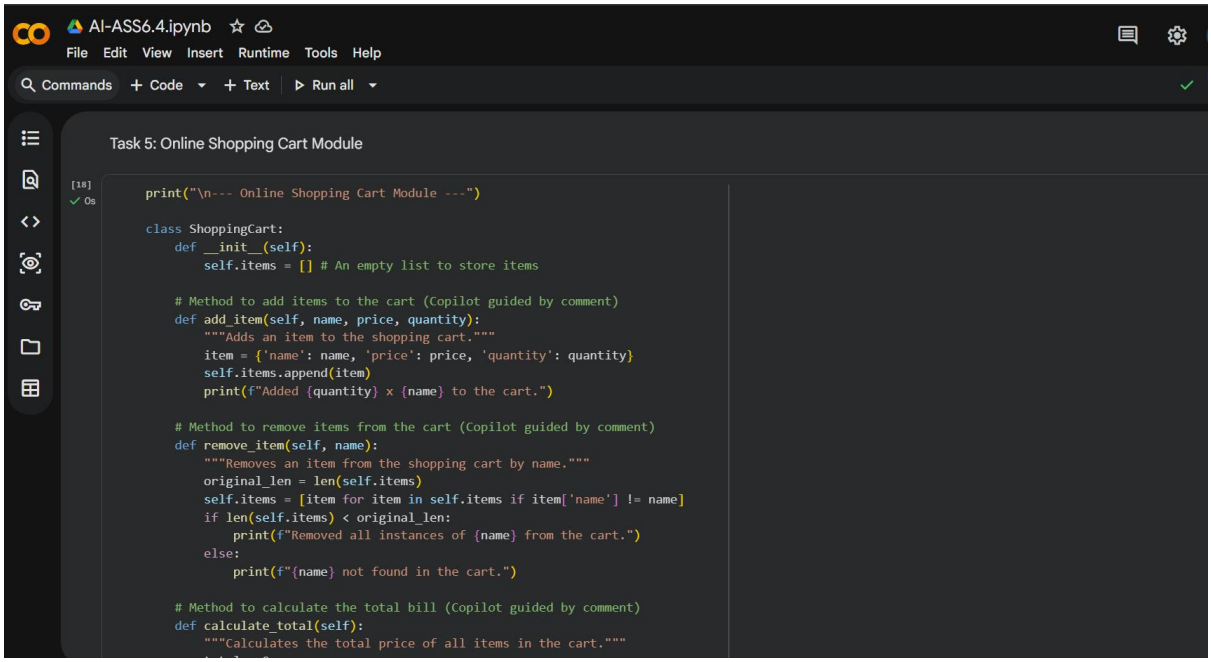
Task 4 – Scholarship Eligibility Check.

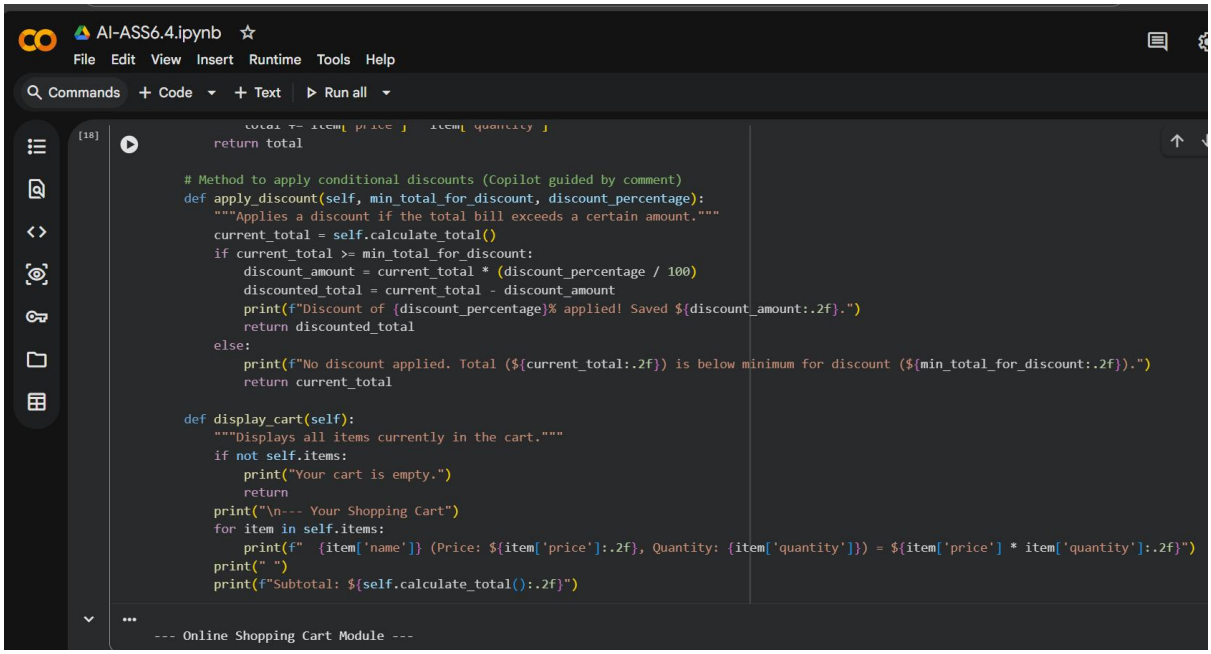
Write a while loop that iterates through the list of student dictionaries using an index. Access each student's score and check if it is greater than 75. If the condition is satisfied, print the student's name as eligible for the scholarship. Ensure proper index increment and loop control. Format the output neatly.



Task 5 – Online Shopping Cart Module.

Develop methods to add items to the cart and remove items from it. Use a loop to calculate the total bill by multiplying price and quantity of each item. Add a condition to apply a discount if the total exceeds a specific limit. Return the final bill amount after discount. Make sure to use class attributes and conditional logic correctly.




AI-ASS6.4.ipynb
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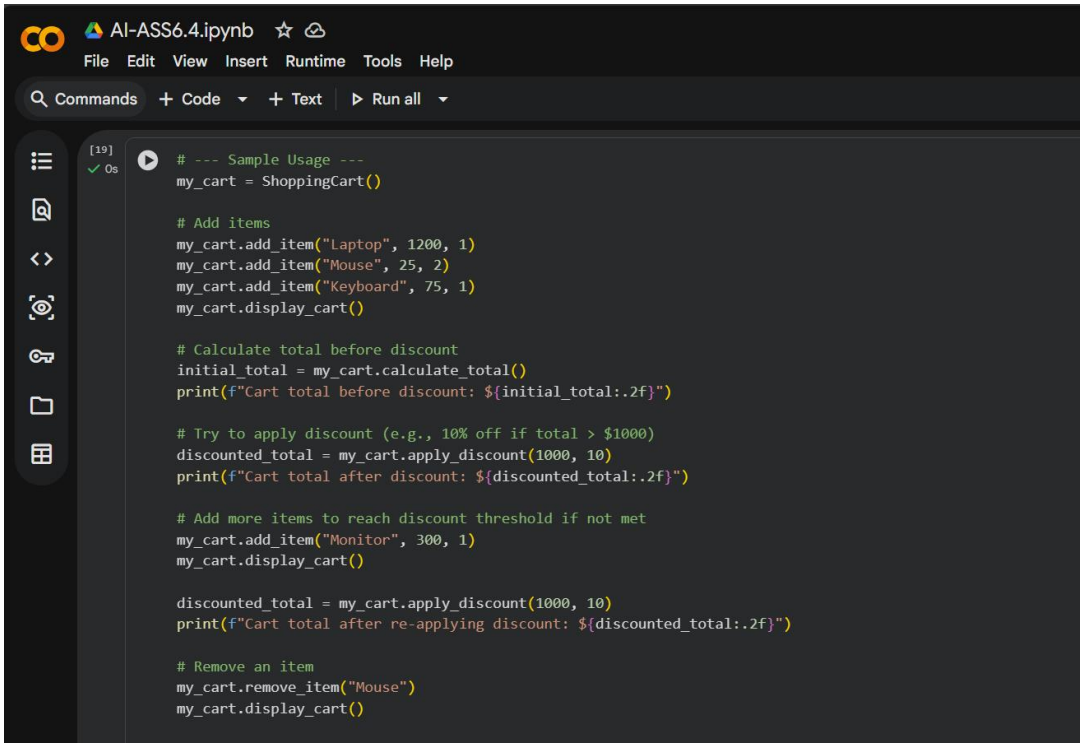
[18]
return total
# Method to apply conditional discounts (Copilot guided by comment)
def apply_discount(self, min_total_for_discount, discount_percentage):
"""Applies a discount if the total bill exceeds a certain amount."""
current_total = self.calculate_total()
if current_total >= min_total_for_discount:
discount_amount = current_total * (discount_percentage / 100)
discounted_total = current_total - discount_amount
print(f"Discount of {discount_percentage}% applied! Saved ${discount_amount:.2f}.")
return discounted_total
else:
print(f"No discount applied. Total (${current_total:.2f}) is below minimum for discount (${min_total_for_discount:.2f}).")
return current_total
def display_cart(self):
"""Displays all items currently in the cart."""
if not self.items:
print("Your cart is empty.")
return
print("\n--- Your Shopping Cart")
for item in self.items:
print(f" {item['name']} (Price: ${item['price']:.2f}, Quantity: {item['quantity']}) = ${item['price'] * item['quantity']:.2f}")
print(" ")
print(f"Subtotal: ${self.calculate_total():.2f}")
--- Online Shopping Cart Module ---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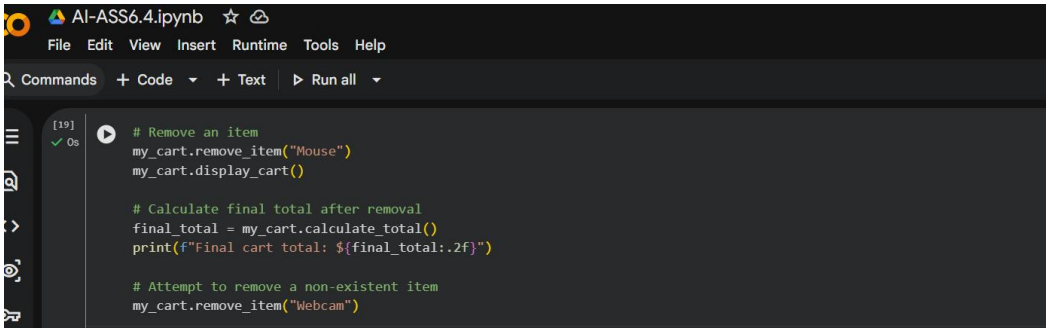
# --- Sample Usage ---
my_cart = ShoppingCart()
# Add items
my_cart.add_item("Laptop", 1200, 1)
my_cart.add_item("Mouse", 25, 2)
my_cart.add_item("Keyboard", 75, 1)
my_cart.display_cart()
# Calculate total before discount
initial_total = my_cart.calculate_total()
print(f"Cart total before discount: ${initial_total:.2f}")
# Try to apply discount (e.g., 10% off if total > $1000)
discounted_total = my_cart.apply_discount(1000, 10)
print(f"Cart total after discount: ${discounted_total:.2f}")
# Add more items to reach discount threshold if not met
my_cart.add_item("Monitor", 300, 1)
my_cart.display_cart()
discounted_total = my_cart.apply_discount(1000, 10)
print(f"Cart total after re-applying discount: ${discounted_total:.2f}")
# Remove an item
my_cart.remove_item("Mouse")
my_cart.display_cart()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[19]
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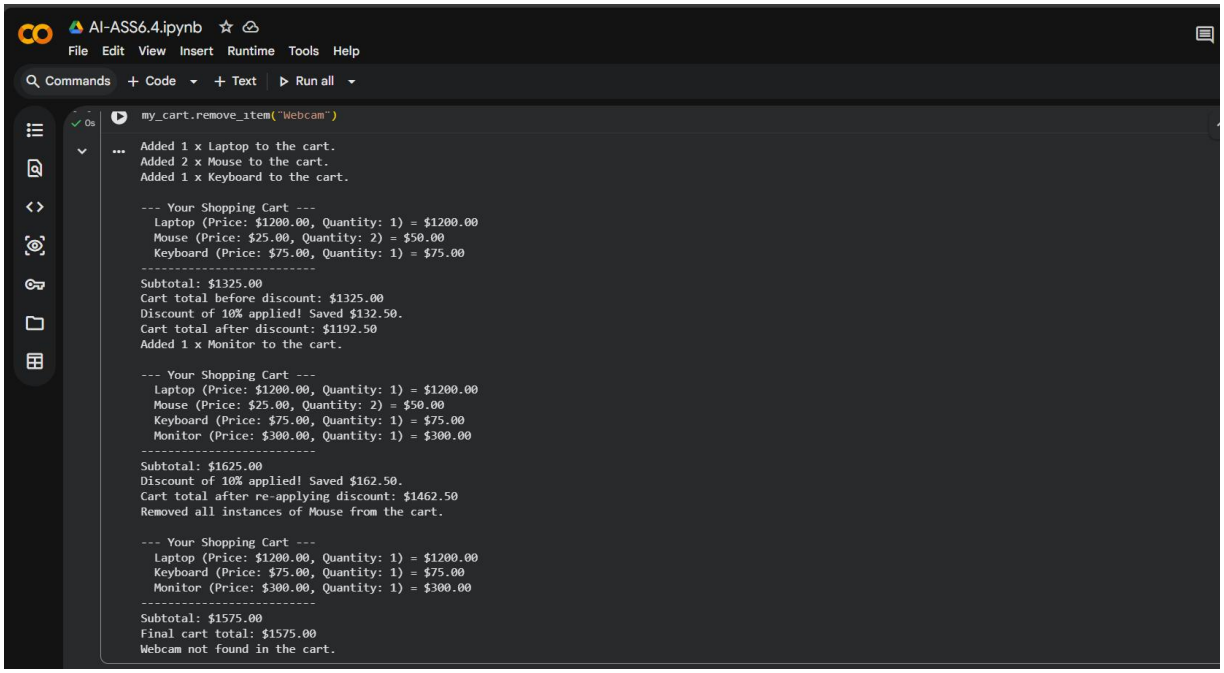
# Remove an item
my_cart.remove_item("Mouse")
my_cart.display_cart()
# Calculate final total after removal
final_total = my_cart.calculate_total()
print(f"Final cart total: ${final_total:.2f}")
# Attempt to remove a non-existent item
my_cart.remove_item("Webcam")

Output:-


AI-ASS6.4.ipynb
File Edit View Insert Runtime Tools Help
Commands + Code + Text Run all
my_cart.remove_item("Webcam")
Added 1 x Laptop to the cart.
Added 2 x Mouse to the cart.
Added 1 x Keyboard to the cart.
--- Your Shopping Cart ---
Laptop (Price: $1200.00, Quantity: 1) = $1200.00
Mouse (Price: $25.00, Quantity: 2) = $50.00
Keyboard (Price: $75.00, Quantity: 1) = $75.00
Subtotal: $1325.00
Cart total before discount: $1325.00
Discount of 10% applied! Saved $132.50.
Cart total after discount: $1192.50
Added 1 x Monitor to the cart.
--- Your Shopping Cart ---
Laptop (Price: $1200.00, Quantity: 1) = $1200.00
Mouse (Price: $25.00, Quantity: 2) = $50.00
Keyboard (Price: $75.00, Quantity: 1) = $75.00
Monitor (Price: $300.00, Quantity: 1) = $300.00
Subtotal: $1625.00
Discount of 10% applied! Saved $162.50.
Cart total after re-applying discount: $1462.50
Removed all instances of Mouse from the cart.
--- Your Shopping Cart ---
Laptop (Price: $1200.00, Quantity: 1) = $1200.00
Keyboard (Price: $75.00, Quantity: 1) = $75.00
Monitor (Price: $300.00, Quantity: 1) = $300.00
Subtotal: $1575.00
Final cart total: $1575.00
Webcam not found in the cart.