Title: Shopping Cart App using JS

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Introduction

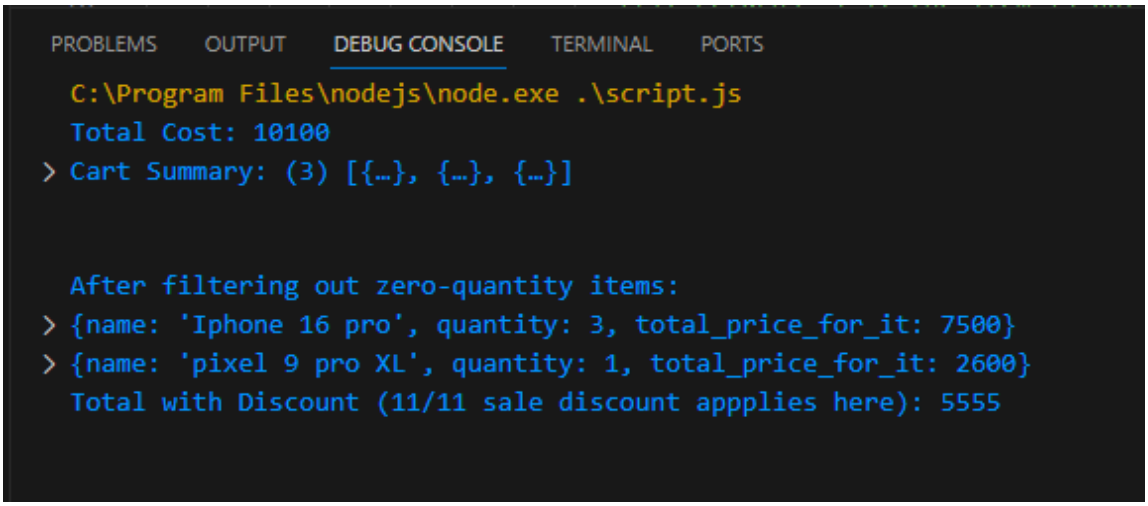
- **Objective**: The objective of this assignment is to develop a JavaScript-based shopping cart system. The cart allows adding items, removing them, updating their quantity, calculating the total cost, applying discounts, and filtering out items with zero quantity. It uses core JavaScript functions such as array manipulation methods (map, filter, reduce) and arrow functions to manage and manipulate the cart data efficiently.

Code Explanation

1. **addItemToCart(iD, name, quantity, price)**: This function adds a new product to the shopping cart by pushing an object with the item's details to the cart array.
2. **removeItemFromCart(iD)**: Removes an item from the cart by finding the item's index using findIndex. If found, the item is removed using splice.
3. **updateItemQuantity(iD, newQuantity)**: Updates the quantity of a specific product in the cart. The map function creates a new array where the updated product has its quantity changed.
4. **totalPrice()**: Calculates the total cost of the items in the cart. The reduce function is used to sum the total price, considering the quantity of each item.
5. **displayCart()**: Displays a summary of the cart's items. It uses map to return an array of objects, each containing the product name, quantity, and total price.
6. **filterOutCart()**: Filters out any items with a quantity of zero. It uses filter to remove items from the cart array that do not meet the condition.
7. **applyDiscount(discountCode)**: Applies a discount based on a discount code. The discountPercentages object stores possible discounts. The final price is calculated by multiplying the total cost by (100 - discount) / 100.

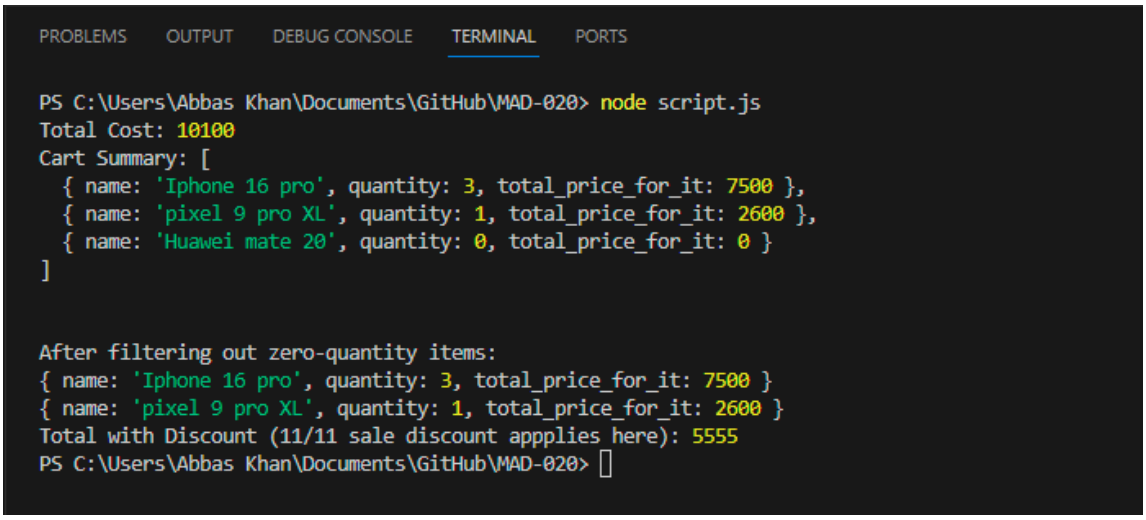
Screenshots of results:

- **Console Output:**



Since we can see the cart summary is not showing us the complete cart array, the reason is that due to the inability of the debugging console to show complex structures such as the object array etc., we cannot simply display them over here using console.log() function. For such tasks, either we use browser console, or the terminal in our IDE, or the foreach loop (while using debugging console) to iterate over each object in our array.

- **Terminal Output:**



Conclusion:

In this assignment, I learned how to implement and manipulate a shopping cart system using JavaScript. I applied various array methods such as map, reduce, and filter to manage the items in the cart. Challenges included managing object immutability(means the operations are not altering my original array), and ensuring that array operations did not modify the original data. This assignment improved my understanding of JavaScript functions and ES6 syntax.