



Assignment 1

Submitted By :

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SP22-BSE-019

Submitted To :

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Subject :

Mobile Application Development

Shopping Cart

Introduction

The objective of this assignment is to implement a shopping cart system using JavaScript. The cart system allows adding, removing, updating items, calculating the total cost, and applying discount codes. This assignment aims to improve understanding of JavaScript ES6 features such as arrow functions, array methods (map, filter, reduce), and object manipulation

Code Explanation

- **AddItemToCart:** Adds an item to the cart if the cart has fewer than 8 items.
- **RemoveItemFromCart:** Removes an item based on product ID using the filter method.
- **UpdateItemQuantity:** Updates the quantity of an item by product ID using the map method.
- **CalculateTotalCost:** Uses the reduce method to calculate the total cost of all items.
- **DisplayCartSummary:** Displays each item's name, quantity, and total price.
- **FilterZeroQuantityItems:** Removes items with zero quantity using filter.
- **ApplyDiscount:** Applies a discount to the total cost based on a discount code

Screenshots:

AddItemToCart

```
76 addItemToCart(1, 'Phone', 2, 500);
77 addItemToCart(2, 'Laptop', 1, 1200);
78 addItemToCart(3, 'Headphones', 3, 100);
79 addItemToCart(4, 'Smartwatch', 1, 250);
80 addItemToCart(5, 'Tablet', 2, 600);
81 addItemToCart(6, 'Monitor', 1, 300);
82 addItemToCart(7, 'Keyboard', 1, 50);
83 addItemToCart(8, 'Mouse', 1, 30);
84
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS Filter (e.g. text, !exclude, \escape)

```
Phone added to the cart.
Laptop added to the cart.
Headphones added to the cart.
Smartwatch added to the cart.
Tablet added to the cart.
Monitor added to the cart.
Keyboard added to the cart.
Mouse added to the cart.
Cart is full! You cannot add more than 8 items.
Phone - Quantity: 2, Total: $1000
Laptop - Quantity: 1, Total: $1200
Headphones - Quantity: 3, Total: $300
Smartwatch - Quantity: 1, Total: $250
Tablet - Quantity: 2, Total: $1200
Monitor - Quantity: 1, Total: $300
Keyboard - Quantity: 1, Total: $50
Mouse - Quantity: 1, Total: $30
```

```
84
85 // Trying to add a 9th item ( display a warning)
86 addItemToCart(9, 'Charger', 1, 20);
87
88 // Displaying cart summary
89 displayCartSummary();
90
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS Filter (e.g. text, !exclude, \escape)

```
Cart is full! You cannot add more than 8 items.
Phone - Quantity: 2, Total: $1000
```

cart.js:10

cart.js:40

UpdateItemQuantity:

```
90
91 // Update item quantity
92 updateItemQuantity(1, 5); // Updating quantity of Phone to 5
93 displayCartSummary();
94
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS Filter (e.g. text, lexclude, \escape)

Item with ID 1 not found.
Phone - Quantity: 5, Total: \$2500
Laptop - Quantity: 1, Total: \$1200
Headphones - Quantity: 3, Total: \$300
Smartwatch - Quantity: 1, Total: \$250
Tablet - Quantity: 2, Total: \$1200
Monitor - Quantity: 1, Total: \$300
Keyboard - Quantity: 1, Total: \$50
Mouse - Quantity: 1, Total: \$30

DisplayCartSummary

```
88 // Displaying cart summary
89 displayCartSummary();
90
91 // Update item quantity:
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS Filter (e.g. text, lexclude, \escape)

Phone - Quantity: 2, Total: \$1000
Laptop - Quantity: 1, Total: \$1200
Headphones - Quantity: 3, Total: \$300
Smartwatch - Quantity: 1, Total: \$250
Tablet - Quantity: 2, Total: \$1200
Monitor - Quantity: 1, Total: \$300
Keyboard - Quantity: 1, Total: \$50
Mouse - Quantity: 1, Total: \$30

RemoveItemFromCart

```
94
95 // Removing an item from the cart
96 removeItemFromCart(7); // Removes Keyboard
97 displayCartSummary();
98
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS Filter (e.g. text, lexclude, \escape)

Item with ID 7 removed.
Phone - Quantity: 5, Total: \$2500
Laptop - Quantity: 1, Total: \$1200
Headphones - Quantity: 3, Total: \$300
Smartwatch - Quantity: 1, Total: \$250
Tablet - Quantity: 2, Total: \$1200
Monitor - Quantity: 1, Total: \$300
Mouse - Quantity: 1, Total: \$30

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cart.js:49
cart.js:49
cart.js:49
cart.js:49
cart.js:49
cart.js:49

FilterZeroQuantityItems

```
199 // Filtering zero quantity items (if any)
200 filterZeroQuantityItems();
201 displayCartSummary();
202
203 // Calculate total cost
204 console.log("Total Cost: $" + calculateTotalCost());
205
206 // Applying a discount code
207 applyDiscount('DISCOUNT10'); // Applying a 10% discount
208
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

Filter (e.g. text, !exclude, \escape)

```
Phone - Quantity: 5, Total: $2500
Laptop - Quantity: 1, Total: $1200
Headphones - Quantity: 3, Total: $300
Smartwatch - Quantity: 1, Total: $250
Tablet - Quantity: 2, Total: $1200
Monitor - Quantity: 1, Total: $300
Mouse - Quantity: 1, Total: $30
Total Cost: $5780
Total after applying DISCOUNT10: $5202.00
```

Conclusion

Through this assignment, I learned how to use JavaScript ES6 features like arrow functions and array methods. It improved my understanding of managing state in JavaScript, especially when dealing with objects and arrays. The key challenge was ensuring that the cart functionality worked for all scenarios (e.g., handling zero quantity, updating quantities, etc.)