COMSATS University Islamabad

Attock Campus

ASSIGNMENT NO 1

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Assignment Title: JavaScript-based Mobile Shopping Cart Feature

Introduction

The objective of this assignment is to develop a JavaScript-based mobile shopping cart feature that uses ES6 arrow functions, array methods (map, filter, reduce), and object manipulation to manage items in a shopping cart. The feature should allow users to add items to the cart, remove items from the cart, update the quantity of items in the cart, calculate the total cost of the items in the cart, and display a summary of the cart.

Code Explanation

The code is divided into five main functions: addItemToCart, removeItemFromCart, updateItemQuantity, calculateTotalCost, and displayCartSummary. Each function is explained below:

addItemToCart

This function adds a product to the cart using the push method. It takes a product object as an argument, which contains the product ID, product name, quantity, and price.

removeItemFromCart

This function removes a product from the cart by product ID using the splice method. It takes a product ID as an argument and finds the index of the product in the cart. If the product is found, it is removed from the cart.

updateItemQuantity

This function updates the quantity of a product in the cart using the find method. It takes a product ID and a new quantity as arguments and finds the product in the cart. If the product is found, its quantity is updated.

calculateTotalCost

This function calculates the total cost of the items in the cart using the reduce method. It takes no arguments and returns the total cost of the items in the cart.

displayCartSummary

This function displays a summary of the cart using the map method. It takes no arguments and returns an array of product summaries, which include the product name, quantity, and total product price.

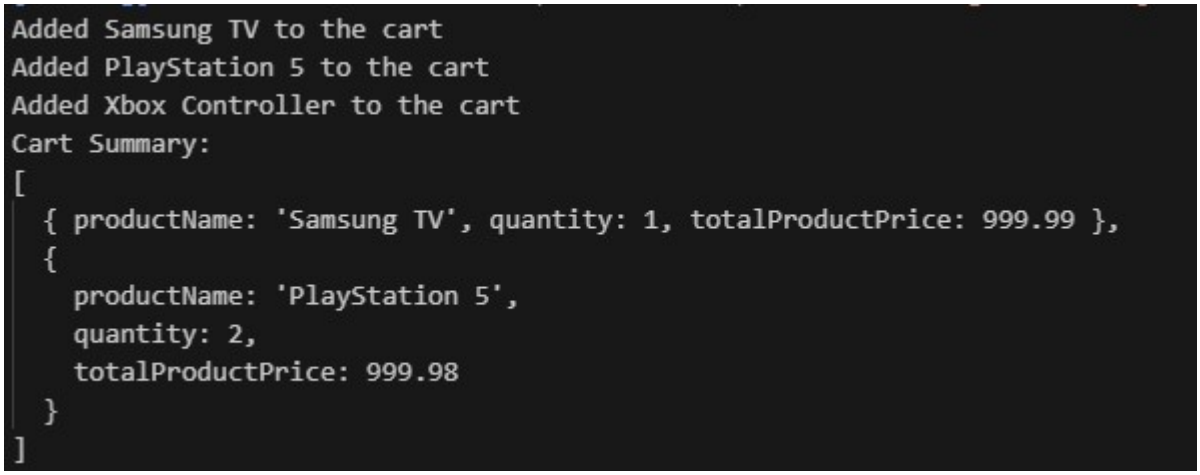
applyDiscountCode

This function applies a discount code to the total cost of the items in the cart. It takes a discount code as an argument and returns the total cost with the discount applied.

Screenshots

Here are the screenshots of the program output demonstrating the working of each operation:

Add Item to Cart



Remove Item from Cart

```
]
Removed product with ID 5 from the cart
Cart Summary after removal:
[
  { productName: 'Samsung TV', quantity: 1, totalProductPrice: 999.99 }
]
```

Update Item Quantity

```
]
Updated quantity of product with ID 4 to 3
Cart Summary after update:
[
  {
    productName: 'Samsung TV',
    quantity: 3,
    totalProductPrice: 2999.9700000000003
  }
```

Display Cart Summary

```
Cart Summary after update:
[
  {
    productName: 'Samsung TV',
    quantity: 3,
    totalProductPrice: 2999.9700000000003
  }
]
```

Calculate Total Cost

```
Total Cost: 2999.9700000000003
Total Cost with discount: 2549.9745000000003
```

Apply Discount Code

```
Total Cost: 2999.9700000000003
Total Cost with discount: 2549.9745000000003
```

Conclusion

Through this assignment, I learned how to implement a JavaScript-based mobile shopping cart feature using ES6 arrow functions, array methods, and object manipulation. I also learned how to apply a discount code to the total cost of the items in the cart. The challenges I faced included ensuring that the code was well-documented and readable, and that the functions worked correctly together to provide a seamless user experience.