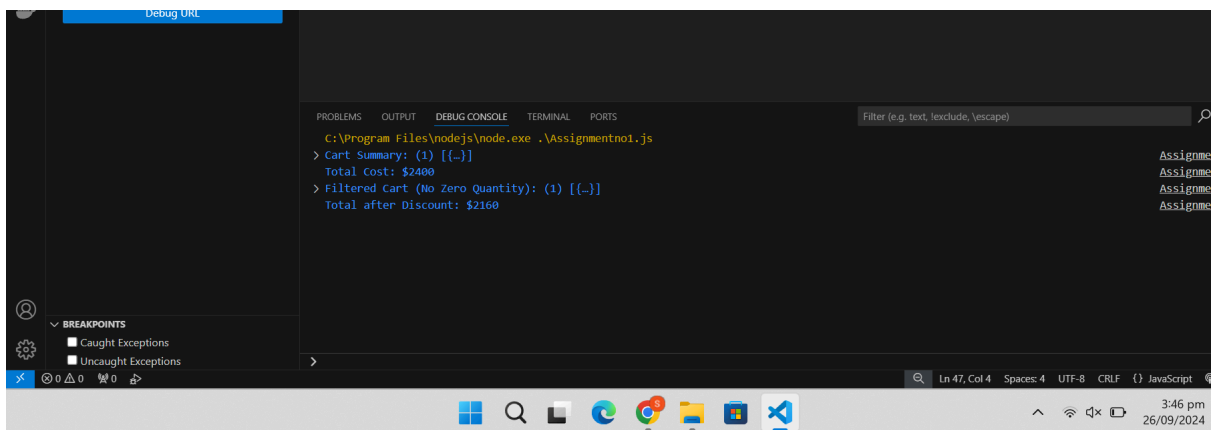
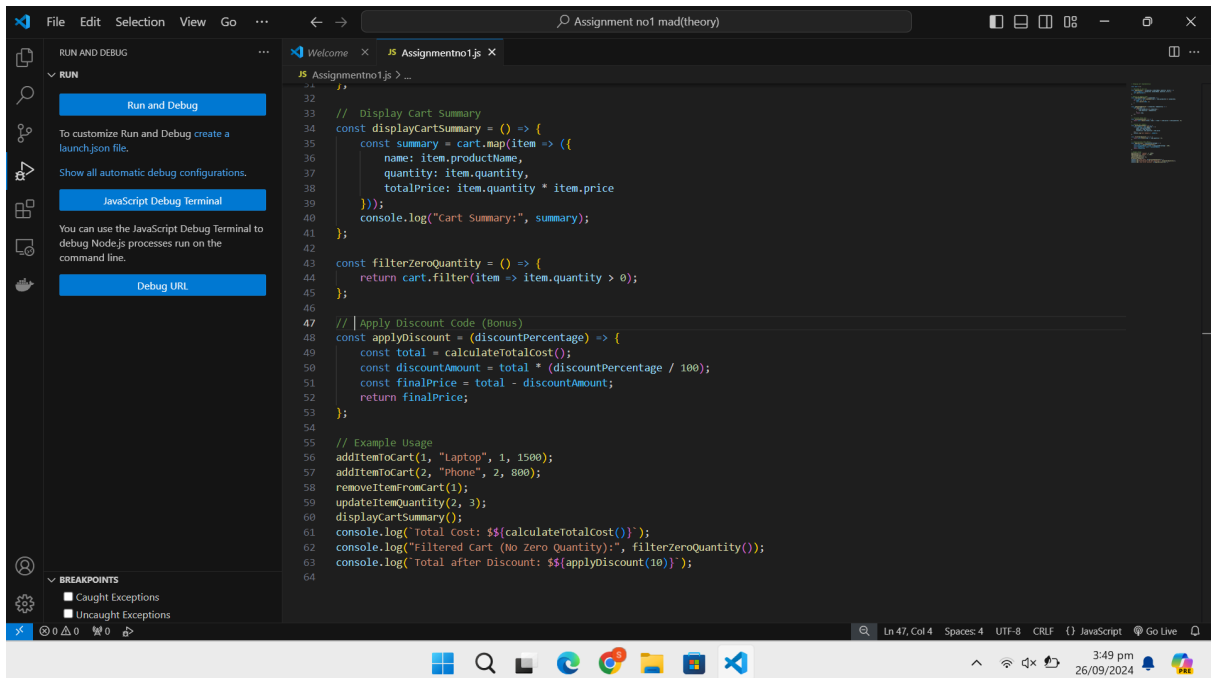
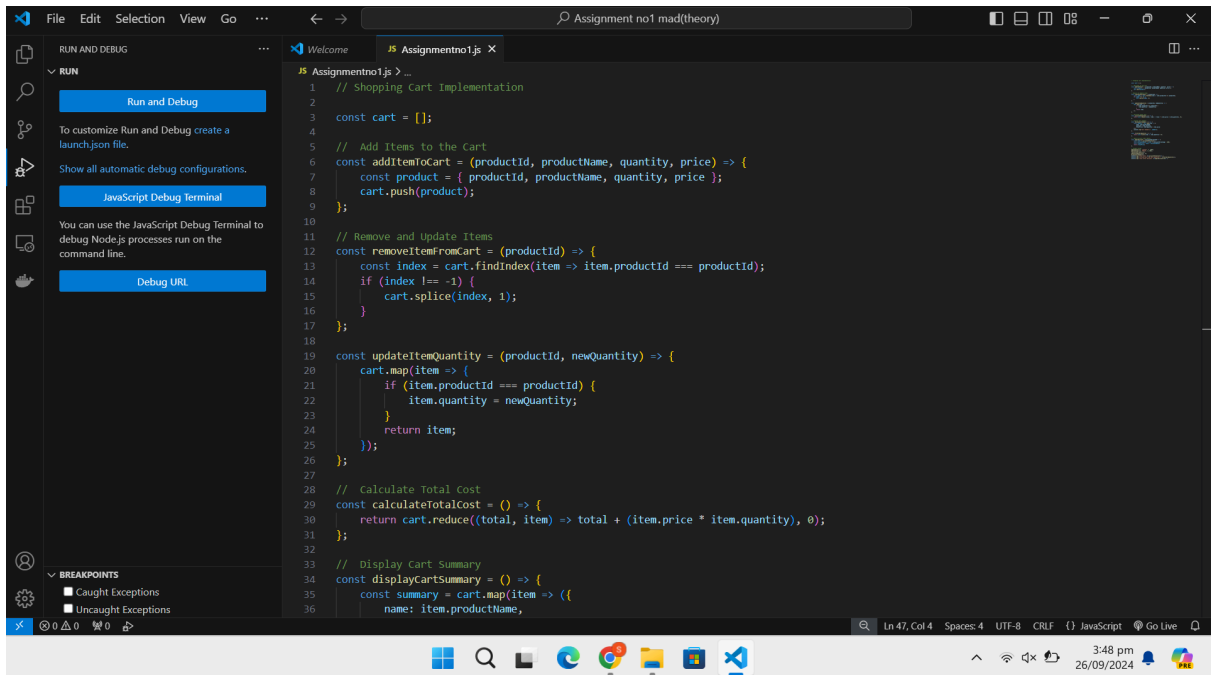


**Name**  
**Assignment no**  
**Date**  
**Subject**

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**Theory no1**  
**25-09-2024**  
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## 1. Cart Array.

Purpose: This initializes an empty array called `cart`, which will store all the product objects added to the cart.

## 2. Step 1: Add Items to the Cart

### Purpose:

A function to add a new item (product) to the cart.

The function takes four arguments: `productId`, `productName`, `quantity`, and `price`.

A product object is created with these properties.

The product is then added (pushed) to the `cart` array.

## Step 2: Remove and Update Items

This function removes a product from the cart based on its `productId`.

`findIndex()` finds the index of the product in the `cart` array that matches the given `productId`.

If the product is found (`index !== -1`), `splice()` is used to remove it from the cart.

## Step 3: Calculate Total Cost

### Purpose:

This function calculates the total cost of all items in the cart.

The `reduce()` method is used to accumulate the total cost, where the total is incremented by multiplying the price of each product by its quantity.

The second argument of `reduce()` is `0`, which initializes the total to zero.

## Step 4: Display Cart Summary

This function displays a summary of all the items in the cart.

It uses the `map()` function to create a new array of objects, where each object contains `productName`, `quantity`, and the `totalPrice` for that product (calculated as `quantity * price`).

The summary is printed to the console.

## Step 5: Apply Discount Code (Bonus)

### Purpose:

This function applies a discount to the total price of items in the cart.

It first calculates the total cost by calling `calculateTotalCost()`.

Then, it calculates the discount amount by multiplying the total by the discount percentage (`discountPercentage / 100`).

Finally, the total price after applying the discount is returned.

### Example Usage

This part demonstrates how the functions can be used together:

Items are added to the cart.

One item (laptop) is removed.

The quantity of the phone is updated.

A cart summary is printed, total cost is calculated, and a discount is applied.

## Conclusion

This code gives you a complete understanding of how to:

Manipulate arrays using methods like `push()`, `map()`, `filter()`, and `reduce()`.

Handle objects within arrays, especially when dealing with products in a cart.

Understand basic functional programming concepts like immutability (in the case of `map`) and accumulating values (with `reduce()`).

Apply basic maths operations for calculating totals and applying discounts.

