

Scenario: Developing a Shopping Cart System

Requirements:

1. Add items to the cart
2. Remove items from the cart
3. Calculate the total price of items in the cart
4. Prevent duplicate items
5. Update item quantity
6. Handle empty cart gracefully

Test Specifications

1. Add Items to the Cart

Test Case 1.1: Add a single item to the cart.

- **Given:** An empty cart
- **When:** I add an item 'apple' with a price of 1.00
- **Then:** The cart should contain one item: `[{'name': 'apple', 'price': 1.00, 'quantity': 1}]`

Test Case 1.2: Add multiple different items to the cart.

- **Given:** An empty cart
- **When:** I add items 'apple' with a price of 1.00 and 'banana' with a price of 0.50
- **Then:** The cart should contain: `[{'name': 'apple', 'price': 1.00, 'quantity': 1}, {'name': 'banana', 'price': 0.50, 'quantity': 1}]`

2. Remove Items from the Cart

Test Case 2.1: Remove an existing item from the cart.

- **Given:** A cart with items 'apple' and 'banana'
- **When:** I remove the item 'apple'
- **Then:** The cart should contain: `[{'name': 'banana', 'price': 0.50, 'quantity': 1}]`

Test Case 2.2: Remove an item that is not in the cart.

- **Given:** A cart with item 'apple'
- **When:** I remove the item 'banana'
- **Then:** The cart should remain unchanged: `[{'name': 'apple', 'price': 1.00, 'quantity': 1}]`

3. Calculate the Total Price of Items in the Cart

Test Case 3.1: Calculate the total price for items in the cart.

- **Given:** A cart with items 'apple' (1.00) and 'banana' (0.50)
- **When:** I calculate the total price
- **Then:** The total price should be 1.50

Test Case 3.2: Calculate the total price for an empty cart.

- **Given:** An empty cart
- **When:** I calculate the total price
- **Then:** The total price should be 0.00

4. Prevent Duplicate Items

Test Case 4.1: Add the same item twice.

- **Given:** An empty cart
- **When:** I add 'apple' with a price of 1.00 twice
- **Then:** The cart should contain one item with updated quantity: `[{'name': 'apple', 'price': 1.00, 'quantity': 2}]`

5. Update Item Quantity

Test Case 5.1: Update the quantity of an existing item.

- **Given:** A cart with item 'apple' (1.00) with quantity 1
- **When:** I update the quantity of 'apple' to 3
- **Then:** The cart should contain: `[{'name': 'apple', 'price': 1.00, 'quantity': 3}]`

6. Handle Empty Cart Gracefully

Test Case 6.1: Remove an item from an empty cart.

- **Given:** An empty cart
- **When:** I try to remove 'apple'
- **Then:** The cart should remain empty: []

Test Case 6.2: Calculate the total price of an empty cart.

- **Given:** An empty cart
- **When:** I calculate the total price
- **Then:** The total price should be 0.00