INFO 6067

Testing for Development Lab Week 3

## Description – Lab – Authoring Tests Marks - 20

Instructions

Download the java class **ShoppingCart.java and Item.java**

Download the Unit test case template

Create a test case for the ShoppingCart class

* Complete the template creating test cases that test the various methods.
* Ensure you cover the appropriate types of tests.
* If you decide not to test something, explain why not.
* Answer the following questions:

1. Would you test the Item class? Explain in brief (1 Line ANSWER) (2 mark)
2. YOU MAY HAVE ANTICIPATED SOME TEST CASES BEFOREHAND, AFTER GETTING THE CODE, YOU COME UP WITH MORE TESTS. WHAT TESTING APPROACH IS THIS? (2 MARKS)
3. YOUR OBJECTIVE IS TO FOCUS ONLY ON AREA YOU THINK COULD HAVE DEFECTS. WHAT TESTING APPROACH IS THIS? (2 MARKS)

**TEST EVERYTHING THAT NEEDS TO BE TESTED AND POPULATE THE TEMPLATE BELOW.**

**I EXPECT 2 HAPPY PATH TESTS, 2 EDGE CASE TESTS, AND 2 NEGATIVE TESTS FOR FUNCTIONS THAT ARE IN-SCOPE (10 MARKS)**

|  |  |
| --- | --- |
| 1. Unit Test Scope (In Scope – Out of Scope) | |
| **In Scope** | **Out of Scope** |
| In Scope *List features/functions that are tested.*  1. ShoppingCart → addToCart ( .. )  2. ShoppingCart → toString ( … )  3. Item → toString ( … ) | Out of Scope *List features/functions that are not tested.*  1. Item → getName ()  2. Item → getPrice ()  3. Item → getQuantity ()  4. ShoppingCart → increaseSize () |

1. For the functions you have in scope, please provide me with the valid input set before populating Table 2. (E.g. this function should accept 8 alphanumeric characters). Then in sequence, provide the happy path test. Then the edge case tests. Then the negative test (2 marks).

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 2. Unit Test Cases | | | |  |  |
| **ID** | **Test Cases**  Description of Test | **Data (Input or other)** | **Expected Output** | **Method** | **Pass/Fail** |
| 01 | Adding one item to the ShoppingCart object. | ItemName = “Next Item 2”  price = 20.0  quantity = 1 | Item should be added to the cart properly and no exception or output show be thrown | void tryToAddAnItem () | **Pass** |
| 02 | Adding One item to an new ShoppingCart object | Using the auto generated data from test id 1. i.e.  itemName = “Next item {number}+= 1”  price = {price} += 10.0  quantity = {quantity} += 1 | Each item should be added to the cart properly and no exception or output. | Void addToCartOneItems () | **Pass** |
| 03 | Adding Two item to an new ShoppingCart object | Using the auto generated data from test id 1. i.e.  itemName = “Next item {number}+= 1”  price = {price} += 10.0  quantity = {quantity} += 1 | Each item should be added to the cart properly and no exception or output. | Void addToCartTwoItems () | **Fail** |
| 04 | Adding Five item to an new ShoppingCart object | Using the auto generated data from test id 1. i.e.  itemName = “Next item {number}+= 1”  price = {price} += 10.0  quantity = {quantity} += 1 | Each item should be added to the cart properly and no exception or output. | Void addToCartFiveItems () | **Fail** |
| 05 | Adding Ten item to an new ShoppingCart object | Using the auto generated data from test id 1. i.e.  itemName = “Next item {number}+= 1”  price = {price} += 10.0  quantity = {quantity} += 1 | Each item should be added to the cart properly and no exception or output. | Void addToCartTenItems () | **Fail** |
| 06 | Setting the itemName to null | ItemName = null  price = 10.0  quantity = 1 | Should throw an nullString / NullName / EmptyString exception | Void NullNameTestOne () | **Pass** |
| 07 | Setting the itemName to null | ItemName = null  price = 10.0  quantity = 2 | Should throw an nullString / NullName / EmptyString exception | Void NullNameTest () | **Fail** |
| 08 | Setting the name to valid String | ItemName = “Banana”  price = 10.0  quantity = 2 | Should not throw any exception or any output | Void NameTestThree () | **Fail** |
| 09 | Setting a negative value in the price | ItemName = “Apple”  price = -200.0  quantity = 2 | Should throw an exception and not add the item in the list | Void NegativePriceTest () | **Fail** |
|  |  | ItemName =  price =  quantity = |  |  |  |
|  |  | ItemName =  price =  quantity = |  |  |  |
|  |  | ItemName =  price =  quantity = |  |  |  |
|  |  | ItemName =  price =  quantity = |  |  |  |
|  |  | ItemName =  price =  quantity = |  |  |  |
|  |  | ItemName =  price =  quantity = |  |  |  |
|  |  | ItemName =  price =  quantity = |  |  |  |
|  |  | ItemName =  price =  quantity = |  |  |  |
|  |  |  |  |  |  |

1. For each edge case test. Provide the ID from the table and an Explanation of why it’s an edge case. (2 marks)