

Kantox Test Cases for Cashier System

Introduction

To ensure comprehensive and accurate coverage of the cashier system, it is essential to design test cases that validate both the basic functionality and the special discount rules applied to the products. This document details the test cases designed to ensure that the cashier system functions correctly and meets the specified requirements.

Assumptions

This test assumes that every Non-Functional characteristic of quality has been addressed for our hypothetical product, focusing only on Functional Suitability. Since this Technical Test Plan targets specific functionality (Cashier System), Integration and System Tests are excluded from this test.

We define a maximum limit, “L”, which represents the highest number of product units that can be added to the Cashier System in a single transaction. This limit is crucial for the design of the test cases to ensure the system handles large numbers of units effectively.

User Stories and Acceptance Criteria

User Story 1:

As a User, I want to select products from a list and manage their quantities while adhering to a maximum limit of units “L” for each product, so that I can accurately reflect my purchase in the Cashier System.

Acceptance Criteria 1.1

Feature: Adding Products to the Cashier Cart

Scenario 1.1.1: Add Multiple Products to the Cashier System

Given the user is logged as a valid user

And the product list is available

When the user adds several products one by one

Then each product's quantity should increase by one (1) with each addition

And the system should display the price per unit for each product

And the system should calculate and show the total price for each product (price x quantity)

And the system should show the cumulative total price for all selected products

Acceptance Criteria 1.2

Feature: Removing Products from the Cart

Scenario 1.2.1: Remove Product Quantity in the Cashier Cart

Given the user is logged in as a valid user
And there is an active product list in the Cashier System
When the user removes a product from the cart
Then the system should decrease the quantity of that product by 1 unit
And the system should recalculate the total price for the product (price x new quantity)
And the system should update the total price for the remaining products in the cart

Scenario 1.2.2: Remove Product from the List When Quantity is Zero

Given the user is logged in as a valid user
And there is an active product list in the Cashier System
When the user deletes a product that has only one (1) unit
Then the system should remove the product from the list entirely
And the remove button should be unavailable
And the system should update the overall total price to zero (0)

Acceptance Criteria 1.3

Feature: Enforce Maximum Units Limit “L” for Adding Products

Scenario 1.3.1: Add Products Without Exceeding Limit L

Given the user is logged in and has access to the product list

When the user adds up to “L” units of a product to the Cashier System
Then the system should accept the addition of units up to the maximum allowed quantity “L”
And the system should display the product’s price per unit and the total price for the product
And the “add another” button should be unavailable
And the system should calculate and show the overall total price for all selected products in the cart

Scenario 1.3.2: Add Products Exceeding the Limit L

Given the user is logged in and has access to the product list
When the user attempts to add more units of a product than the maximum limit “L”
Then the system should prevent the addition of additional units beyond the limit
And the system should display an error message indicating that the maximum limit “L” has been reached
And the current quantity of the product in the list should remain unchanged

Scenario 1.3.3: Adding Units When Quantity is Near the Limit

Given the user is logged in and has access to the product list
And the current quantity of a product is “L - 1”

When the user adds one more unit to the product
Then the system should allow the addition of one more unit, reaching a total quantity of “L”
And the system should display the updated quantity and total price for the product

User Story 2:

Title: Applying Discount Rules to Products

As a User, I want to apply various discount rules to the products in my cart, so that I can see the updated total price reflecting these discounts.

Acceptance Criteria 2.1

Feature: Implement "Buy X Get Y Free" Discount Rule

Scenario 2.1.1: Apply "Buy X Get Y Free" Discount to Selected Products

Given the user is logged in and has access to the product list
When the user selects products eligible for the "Buy X Get Y Free" discount
And the user sets different quantities for these products
Then the system should display the price per unit for each product
And the system should apply the "Buy X Get Y Free" rule where applicable (showing some items at “zero cost”)
And the system should calculate and display the total price for each product type (price x quantity)
And the system should show the overall total price for all selected products with discounts applied

Acceptance Criteria 2.2

Feature: Apply "Buy > N Pay X Price Per Unit" Discount Rule

Scenario 2.2.1: Add More Than N Units with a Discounted Price

Given the user is logged in and has access to the product list
When the user selects more than N units of a product with the "Buy > N Pay X Price Per Unit" discount
Then the system should apply the discounted price X per unit
And the system should display the price for each product type (price x quantity)
And the system should calculate and show the total price for all products with the discount applied

Scenario 2.2.2: Add Less Than N Units Without the Discount

Given the user is logged in and has access to the product list
When the user selects less than N units of a product with the "Buy > N Pay X Price Per Unit" discount
Then the system should display the standard price per unit
And the system should calculate and display the total price based on the standard price (price x quantity)
And the system should show the overall total price for all selected products without any discount

Acceptance Criteria 2.3

Feature: Apply "Buy > N Get X% Off Per Unit" Discount Rule

Scenario 2.3.1: Apply Discount for Buying More Than N Units

Given the user is logged in and has access to the product list
When the user selects more than N units of a product that offers "Buy > N Get X% Off Per Unit"
Then the system should apply a discount of X% on the price per unit
And the system should display the price for each product type after discount (price x quantity)
And the system should calculate and show the total price for all products with the discount applied

Scenario 2.3.2: Add Less Than N Units Without the Discount

Given the user is logged in and has access to the product list
When the user selects less than N units of a product that offers "Buy > N Get X% Off Per Unit"
Then the system should display the regular price per unit
And the system should calculate and show the total price based on the standard price (price x quantity)
And the system should display the overall total price for all selected products without applying the discount

Test Cases

Test Case 1.1: Add Products Within the Limit L

User Story: 1

Acceptance Criteria: AC-1.1

Feature: Enforce Maximum Units Limit "L" for Adding Products

Scenario: Sc-1.1.1

Summary: Add Products Within the Limit L

Pre-conditions:

- The user must be logged into the system.
- The product list should be visible.

- **Steps to Execute:**

Step	Expected Result
Access the Product List	The Product List should be visible
Select a Product	The product should be selected
Add Units Up to L	The product should be added with a total quantity of L
Verify Quantity Verify “add more” button	“add more” bottom is unavailable The quantity should be L
Verify Total Price	The total price should be calculated correctly based on L units

Expected Result: The product is added to the list with the correct quantity and total price within the limit.

Test Case 1.2: Add Products Exceeding the Limit L

User Story: 1

Acceptance Criteria: AC-1.2

Feature: Enforce Maximum Units Limit “L” for Adding Products

Scenario: Sc-1.2.1

Summary: Add Products Exceeding the Limit L

Pre-conditions:

- The user must be logged into the system.
- The product list should be visible.

Steps to Execute:

Step	Expected Result
Access the Product List	The Product List should be visible
Select a Product	The product should be selected
Add Units Exceeding L	The system should prevent adding more than L units
Verify Error Message	An error message indicating the limit L has been reached should be displayed
Verify Quantity	The quantity should remain at L

Expected Result: The system prevents adding units beyond the limit L and displays an appropriate error message.

Test Case 1.3: Adding Units When Quantity is Near the Limit

User Story: 1

Acceptance Criteria: AC-1.1

Feature: Enforce Maximum Units Limit "L" for Adding Products

Scenario: Sc-1.1.3

Summary: Adding Units When Quantity is Near the Limit

Pre-conditions:

- The user must be logged into the system.
- The product list should be visible.
- The current quantity of the product should be L - 1.

Steps to Execute:

Step	Expected Result
Access the Product List	The Product List should be visible
Select a Product	The product should be selected
Add One More Unit	The product's total quantity should be updated to L
Verify Quantity	The quantity should be L
Verify Total Price	The total price should be updated correctly for L units

Expected Result: The product is added up to the maximum allowed quantity L, and the total price is updated correctly.

Test Case 1.4: Adding the Full Limit of Units When Starting from Zero

User Story: 1

Acceptance Criteria: AC-1.1

Feature: Enforce Maximum Units Limit "L" for Adding Products

Scenario: Sc-1.1.4

Summary: Adding the Full Limit of Units When Starting from Zero

Pre-conditions:

- The user must be logged into the system.
- The product list should be visible.
- The current quantity of the product should be zero.

Steps to Execute:

Step	Expected Result
Access the Product List	The Product List should be visible
Select a Product	The product should be selected
Add L Units	The product should be added with a total quantity of L
Verify Quantity	The quantity should be L
Verify Total Price	The total price should be calculated correctly based on L units

Expected Result: The product is added to the list with the correct quantity and total price, starting from zero.

Test Case 1.5: Decrease Quantity of Products in the Cashier List

User Story: 1

Acceptance Criteria: AC-1.2

Feature: Removing Products from the Cashier List

Scenario: Sc-1.2.1

Summary: Decrease Quantity of Products in the Cashier List (Quantity ≥ 1)

Pre-conditions:

- The user must be logged into the system.
- The product list should contain at least one product with a quantity greater than 1.

Steps to Execute:

Step	Expected Result
Access the Product List	The Product List should be visible
Select a Product	The product should be selected
Decrease Quantity	The quantity of the product should decrease by one
Verify Quantity	The quantity should be decremented by one

Step	Expected Result
Verify Total Price	The total price should be updated based on the new quantity

Expected Result: The quantity is decreased by one and the total price is updated correctly.

Test Case 1.6: Remove Product from the List When Quantity is Zero

User Story: 1

Acceptance Criteria: AC-1.2

Feature: Removing Products from the Cashier List

Scenario: Sc-1.2.2

Summary: Remove Product from the List When Quantity is Zero

Pre-conditions:

- The user must be logged into the system.
- The product list should contain a product with a quantity of exactly 1.

Steps to Execute:

Step	Expected Result
Access the Product List	The Product List should be visible
Select a Product	The product should be selected
Remove the Product	The product should be removed from the list
Verify Product Removal	The product should no longer appear in the list
Verify Remove button	Remove button is unavailable
Verify Total Price	The total price should be updated to zero

Expected Result: The product is removed from the list, and the total price is recalculated correctly.

Test Case 2.1.1: Apply "Buy X Get Y Free" Discount to Selected Products

User Story: 2

Acceptance Criteria: AC-2.1

Feature: Implement "Buy X Get Y Free" Discount Rule

Scenario: Sc-2.1.1

Summary: Apply "Buy X Get Y Free" Discount to Selected Products

Pre-conditions:

- The user must be logged into the system.
- The product list should be visible.
- Products eligible for the "Buy X Get Y Free" discount should be available.

Steps to Execute:

Step	Expected Result
Access the Product List	The Product List should be visible
Select Discounted Product	The product eligible for discount should be selected
Add Discounted Product	The system should apply the "Buy X Get Y Free" discount
Verify Discounted Price	The system should show the reduced price per unit for the discounted products
Verify Y Product is FREE	The system should show that Y units are free and have “zero” cost
Verify Total Price	The total price should reflect the discount applied

Expected Result: The discount is applied correctly and the total price is updated to reflect the "Buy X Get Y Free" promotion.

Test Case 2.1.2: Apply "Buy X Get Y Free" Discount When Adding More Units

User Story: 2

Acceptance Criteria: AC-2.1

Feature: Implement "Buy X Get Y Free" Discount Rule

Scenario: Sc-2.1.2

Summary: Apply "Buy X Get Y Free" Discount When Adding More Units

Pre-conditions:

- The user must be logged into the system.
- The product list should be visible.
- Products eligible for the "Buy X Get Y Free" discount should be available.

Steps to Execute:

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Step	Expected Result
Access the Product List	The Product List should be visible
Select Discounted Product	The product eligible for discount should be selected
Add Units Exceeding X	The system should apply the "Buy X Get Y Free" discount for additional units
Verify Discounted Price	The system should show the reduced price per unit for the discounted products
Verify Y Product is FREE	The system should show that Y units are free and have “zero” cost
Verify Total Price	The total price should reflect the discount applied

Expected Result: The discount is applied correctly for units beyond X, Y products are free, and the total price reflects the promotion.

Test Case 2.1.3: Apply "Buy X Get Y Free" Discount for Exact L Units

User Story: 2

Acceptance Criteria: AC-2.1

Feature: Apply "Buy X Get Y Free" Discount Rule

Scenario: Sc-2.1.3

Summary: Verify "Buy X Get Y Free" Discount with Exact L Units Added

Pre-conditions:

- The user must be logged into the system.
- The product list should be visible.
- The product should have a "Buy X Get Y Free" rule where $X = L$.

Steps to Execute:

Step	Expected Result
Access the Product List	The Product List should be visible
Select Discounted Product	The product eligible for the "Buy X Get Y Free" discount should be selected

Step	Expected Result
Add L Units to the Cart	The system should apply the "Buy X Get Y Free" discount for L units added
Verify Discounted Price	The system should show the reduced price per unit for the discounted products
Verify Y Product is FREE	The system should show that Y units are free and have "zero" cost
Verify Total Price	The total price should reflect the "Buy X Get Y Free" promotion for L units

Expected Result: The discount for exactly L units is applied, Y products are free, and the total price reflects the discount.

Test Case 2.2.3: Apply "Buy > N Pay X Price Per Unit" Discount for Exactly L Units

User Story: 2

Acceptance Criteria: AC-2.2

Feature: Apply "Buy > N Pay X Price Per Unit" Discount Rule

Scenario: Sc-2.2.3

Summary: Verify "Buy > N Pay X Price Per Unit" Discount with Exactly L Units Added

Pre-conditions:

- The user must be logged into the system.
- The product list should be visible.
- The product should have a "Buy > N Pay X Price Per Unit" rule where $N = L-1$.

Steps to Execute:

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Step	Expected Result
Access the Product List	The Product List should be visible
Select Discounted Product	The product eligible for the "Buy > N Pay X Price Per Unit" discount should be selected
Add L Units to the Cart	The system should apply the "Buy > N Pay X Price Per Unit" discount for L units added
Verify Discounted Price	The system should show the discounted price per unit based on X
Verify Total Price	The total price should reflect the "Buy > N Pay X Price Per Unit" promotion for L units

Expected Result: The discount is applied correctly for L units, and the total price reflects the promotion.

Test Case 2.2.4: Do Not Apply "Buy > N Pay X Price Per Unit" Discount for N Units

User Story: 2

Acceptance Criteria: AC-2.2

Feature: Apply "Buy > N Pay X Price Per Unit" Discount Rule

Scenario: Sc-2.2.4

Summary: Verify "Buy > N Pay X Price Per Unit" Discount is Not Applied for Less Than N Units

Pre-conditions:

- The user must be logged into the system.
- The product list should be visible.
- The product should have a "Buy > N Pay X Price Per Unit" rule.

Steps to Execute:

Step	Expected Result
Access the Product List	The Product List should be visible
Select Discounted Product	The product eligible for the "Buy > N Pay X Price Per Unit" discount should be selected
Add N Units to the Cart	The system should not apply the "Buy > N Pay X Price Per Unit" discount for N units added
Verify Discounted Price	The system should show the regular price per unit
Verify Total Price	The total price should reflect the regular price for N units

Expected Result: The discount is not applied for N units, and the total price reflects the regular price.

Test Case 2.3.3: Apply "Buy > N Pay X% Price Per Unit" Discount for Exactly L Units

User Story: 2

Acceptance Criteria: AC-2.3

Feature: Apply "Buy > N Pay X% Price Per Unit" Discount Rule

Scenario: Sc-2.3.3

Summary: Verify "Buy > N Pay X% Price Per Unit" Discount with Exactly L Units Added

Pre-conditions:

- The user must be logged into the system.
- The product list should be visible.
- The product should have a "Buy > N Pay X% Price Per Unit" rule where N = L-1.

Steps to Execute:

Step	Expected Result
Access the Product List	The Product List should be visible
Select Discounted Product	The product eligible for the "Buy > N Pay X% Price Per Unit" discount should be selected
Add L Units to the Cart	The system should apply the "Buy > N Pay X% Price Per Unit" discount for L units added
Verify Discounted Price	The system should show the discounted price per unit based on X%
Verify Total Price	The total price should reflect the "Buy > N Pay X% Price Per Unit" promotion for L units

Expected Result: The discount is applied correctly for L units, and the total price reflects the promotion.

Test Case 2.3.3: Apply "Buy > N Pay X% Price Per Unit" Discount for Exactly N Units

User Story: 2

Acceptance Criteria: AC-2.3

Feature: Apply "Buy > N Pay X% Price Per Unit" Discount Rule

Scenario: Sc-2.3.3

Summary: Verify "Buy > N Pay X% Price Per Unit" Discount with Exactly NUnits Added

Pre-conditions:

- The user must be logged into the system.
- The product list should be visible.
- The product should have a "Buy > N Pay X% Price Per Unit" rule where $N = L-1$.

Steps to Execute:

Step	Expected Result
Access the Product List	The Product List should be visible
Select Discounted Product	The product eligible for the "Buy > N Pay X% Price Per Unit" discount should be selected
Add N Units to the Cart	The system should not apply the "Buy > N Pay X% Price Per Unit" discount for L units added
Verify Discounted Price	The system should show the regular price per unit
Verify Total Price	The total price should reflect the regular price for N units

Expected Result: The discount is not applied for N units, and the total price do not reflects the promotion.

User Story: 2

Acceptance Criteria: AC-2.3

Feature: Apply "Buy > N Pay X% Price Per Unit" Discount Rule

Scenario: Sc-2.3.6

Summary: Verify No Discount is Applied When User Adds N+1 Units and Then Removes One Unit, Leaving Exactly N Units

Pre-conditions:

- The user must be logged into the system.
- The product list should be visible.
- The product should have a "Buy > N Pay X% Price Per Unit" rule where $N = L-1$.

Steps to Execute:

Step	Expected Result
Access the Product List	The product list should be visible.

Step	Expected Result
Select the Discounted Product	The product with the "Buy > N Pay X% Price Per Unit" rule should be selected.
Add N+1 Units to the Cart	The system should apply the "Buy > N Pay X% Price Per Unit" discount for N+1 units added.
Verify Discounted Price	The system should show the discounted price based on X% for N+1 units.
Remove One Unit from the Cart	The system should remove one unit from the cart, leaving exactly N units.
Verify Discounted Price	The system should not apply the discount for the N units remaining; it should show the regular price per unit.
Verify Total Price	The total price should reflect the regular price for the remaining N units.

Expected Result: The discount is applied correctly for N+1 units initially. When one unit is removed, the discount should not apply to the remaining N units, and the total price should reflect the regular price.