

# Introduction to Software Engineering

## Software Testing

The student team is required to complete the **Software Testing** documentation for the assigned course project, following the attached template.



Software Engineering Department  
Faculty of Information and Technology  
University of Science

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# Software Testing

## Objectives

This document focus on the following topics:

- ✓ Completing the Software Testing document with the following sections:
  - Test Plan
  - Test Cases
- ✓ Understanding the Software Testing document.

# 1 Member Contribution Assessment

ID	Name	Contribution (%)	Signature
23127128	Nguyễn Thành Tiến	100%	
23127157	Nguyễn Hoàng Gia Bảo	100%	
23127184	Lê Phạm Kiều Duyên	100%	
23127396	Lương Linh Khôi	100%	

# 2 Test plan

*This section outlines the testing strategy, scope, environment, and resources required to verify that the **SweetieBakery** system meets the specifications defined in the Software Requirements Specification (SRS) and functions correctly for end-users.*

## 2.1 Introduction

The purpose of this test plan is to define the testing approach for the **SweetieBakery – Food Delivery Website**. The primary goal is to identify defects, ensure the software quality, and verify that both functional and non-functional requirements are met before the final release.

### 2.1.1 Scope of Testing

#### In Scope:

- **Functional Testing:** Verification of all core modules including:
  - Authentication & Account Management (User/Admin).
  - Product Catalog, Search, and Filtering.
  - Shopping Cart & Checkout Process (Cash On Delivery).
  - Order Management (User Tracking & Admin Processing).
  - Admin Dashboard & Reporting.
  - Reviews & Feedback System.
- **Non-Functional Testing:**
  - **UI/UX Testing:** Responsiveness on different screen sizes and browser compatibility.
  - **Performance Testing:** Page load speed verification.
  - **Security Testing:** Authentication barriers, authorization checks (RBAC), and input validation.

#### Out of Scope:

- Live Payment Gateway processing (Real banking transactions are simulated via "Banking Payment" manual check).

- Heavy Load/Stress Testing (e.g., 10,000 concurrent users).

## 2.2 Test Strategy

The project will adopt a combination of **Manual Testing** and **Unit Testing**.

### 2.2.1 Testing Levels

1. **Unit Testing:** Conducted by developers during the implementation phase to verify individual components (React components, Node.js functions).
2. **Integration Testing:** Verifying the communication between the Frontend (React), Backend (Express API), and Database (MongoDB).
3. **System Testing:** End-to-end testing of complete user flows (e.g., A user registers -> searches for a cake -> adds to cart -> places an order -> Admin approves the order).
4. **Acceptance Testing (UAT):** Validating the system against the user requirements to ensure it meets the stakeholders' needs.

### 2.2.2 Testing Techniques

- **Black Box Testing:** Testing functionalities without looking at the internal code structure. Focus on Input/Output.
- **Positive Testing:** Verifying the system works as expected with valid data.
- **Negative Testing:** Verifying the system handles invalid data and errors gracefully (e.g., entering a wrong password, adding out-of-stock items).

## 2.3 Test Environment

The testing will be performed in the following environment:

Component	Specification
Hardware	Personal Laptops (Windows 10/11, macOS)
Browser	Google Chrome (Latest), Firefox, Microsoft Edge
Backend Server	Node.js (Localhost:5000 or Deployed on Render)

<b>Frontend Host</b>	React.js (Localhost:3000 or Deployed on Vercel)
<b>Database</b>	MongoDB Atlas (Cloud Database)
<b>Tools</b>	Postman (API Testing), Chrome DevTools (UI Debugging), Jira/Excel (Bug Tracking)

## 2.4 Test Resources & Responsibilities

The following team members are responsible for the testing phase:

<b>Role</b>	<b>Member</b>	<b>Responsibilities</b>
<b>Test Lead</b>	Nguyễn Thành Tiến	<ul style="list-style-type: none"><li>- Define test strategy and schedule.</li><li>- Review test cases.</li><li>- Final quality sign-off.</li></ul>
<b>Testers</b>	Lê Phạm Kiều Duyên Lương Linh Khôi Nguyễn Hoàng Gia Bảo	<ul style="list-style-type: none"><li>- Execute test cases.</li><li>- Report bugs and defects.</li><li>- Perform regression testing after fixes.</li></ul>
<b>Developers</b>	(All Members)	<ul style="list-style-type: none"><li>- Fix reported bugs.</li><li>- Perform unit testing on their assigned modules.</li></ul>

## 2.5 Test Schedule

The testing phase is aligned with the project timeline:

<b>Phase</b>	<b>Activity</b>	<b>Estimated Time</b>
<b>Phase 1</b>	Unit Testing (Concurrent with Development)	Weeks 6-8
<b>Phase 2</b>	Integration Testing (API & Database connection)	Week 8-9

<b>Phase 3</b>	System Testing (Execution of Test Cases)	Week 9-10
<b>Phase 4</b>	Bug Fixing & Regression Testing	Week 10
<b>Phase 5</b>	Final Review & Report	Week 10

## 2.6 Defect Management

Defects found during testing will be logged (in Excel or Jira) with the following attributes:

- **Defect ID:** Unique identifier.
- **Description:** Summary of the error.
- **Steps to Reproduce:** How to trigger the bug.
- **Severity:**
  - Critical: System crash or data loss.
  - High: Major functionality broken (e.g., cannot checkout).
  - Medium: Minor functionality issue or validation error.
  - Low: UI/Cosmetic issues (typos, alignment).
- **Status:** Open -> Fixed -> Verified.

## 2.7 Entry and Exit Criteria

### Entry Criteria (When to start testing):

- The development of the module is complete.
- The test environment is set up and accessible.
- Test cases are written and reviewed.

### Exit Criteria (When to stop testing):

- 100% of defined test cases have been executed.
- All Critical and High severity bugs are fixed and verified.
- 95% of total test cases have a "Passed" result.



# 3 Test cases

## 3.1 List of test cases

Seq	Test case	Target	Description
<b>1. Authentication &amp; Account Management</b>			
TC-001	User Registration - Successful	Auth Module	Verify that a new user can register successfully with valid email and password.
TC-002	User Registration - Duplicate Email	Auth Module	Verify that the system displays an error when registering with an existing email.
TC-003	User Registration - Weak Password	Auth Module	Verify validation error when the password does not meet complexity requirements.
TC-004	User Registration - Mismatched Password	Auth Module	Verify error message when 'Password' and 'Confirm Password' do not match.
TC-005	User Login - Valid Credentials	Auth Module	Verify that a registered user can log in and is redirected to the Homepage.
TC-006	User Login - Invalid Password	Auth Module	Verify that the system displays an error message for incorrect passwords.
TC-007	User Login - Empty Fields	Auth Module	Verify validation when clicking Login with empty email or password fields.
TC-008	Admin Login - Access Dashboard	Auth Module	Verify that an Admin account is redirected to the Admin Dashboard upon login.
TC-009	Forgot Password - Send Email	Auth Module	Verify that a reset link is sent to the user's email when requesting a password reset.
TC-010	Reset Password - Success	Auth Module	Verify that the user can login with the new password after a successful reset.
TC-011	User Logout	Auth Module	Verify that clicking Logout terminates the session and redirects to Home/Login.

TC-012	Update User Profile	User Module	Verify that the user can update personal details (Name, Phone, Address).
TC-013	Change Password - Success	User Module	Verify that the user can change their password by providing the correct old password.
TC-014	Change Password - Wrong Old Pass	User Module	Verify error message when the user enters an incorrect old password.

## 2. Product Catalog & Browsing

TC-015	View Product List	Product Module	Verify that the product catalog displays products with images, names, and prices.
TC-016	Search Product - Valid Keyword	Product Module	Verify that the search bar returns products matching the entered keyword.
TC-017	Search Product - No Results	Product Module	Verify the "No products found" message when searching for a non-existent item.
TC-018	Filter Product by Category	Product Module	Verify that selecting a category (e.g., Cakes) displays only relevant products.
TC-019	Sort Products by Price	Product Module	Verify that products can be sorted by Price (Low to High / High to Low).
TC-020	Product Pagination	Product Module	Verify that pagination works correctly when there are many products.
TC-021	View Product Details	Product Module	Verify that the detail page shows correct description, stock, price, and images.
TC-022	Product Image Zoom	Product Module	Verify that hovering over the product image zooms in or shows details.
TC-023	Add to Wishlist	Wishlist Module	Verify that a logged-in user can add a product to their wishlist.
TC-024	Remove from Wishlist	Wishlist Module	Verify that a user can remove a product from their wishlist.

## 3. Shopping Cart System

TC-025	Add Item to Cart	Cart Module	Verify that adding an item updates the cart icon count and stores the item.
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TC-026	Add Item - Out of Stock	Cart Module	Verify that the system prevents adding more items than the available stock.
TC-027	Update Cart Quantity - Increase	Cart Module	Verify that the item subtotal and cart total increase when quantity is increased.
TC-028	Update Cart Quantity - Decrease	Cart Module	Verify that the item subtotal and cart total decrease when quantity is decreased.
TC-029	Remove Item from Cart	Cart Module	Verify that clicking the delete button removes the item and updates the Total.
TC-030	Apply Promotion Code - Valid	Cart Module	Verify that a valid coupon code applies the correct discount percentage/amount.
TC-031	Apply Promotion Code - Invalid	Cart Module	Verify error message when applying an expired or non-existent coupon code.
TC-032	Cart Persistence	Cart Module	Verify that cart items remain saved after refreshing the page or re-logging in.

#### 4. Checkout & Order Processing

TC-033	Checkout - Successful (COD)	Order Module	Verify successful order placement using Cash On Delivery method.
TC-034	Checkout - Validation	Order Module	Verify that the system requires all mandatory shipping fields (Address, Phone).
TC-035	Checkout - Empty Cart	Order Module	Verify that the user cannot access the checkout page if the cart is empty.
TC-036	Order Confirmation Email	Order Module	Verify that the user receives a confirmation email after placing an order.
TC-037	View Order History	Order Module	Verify that the new order appears in the User Profile > Order History list.
TC-038	Track Order Status	Order Module	Verify that the user can see the real-time status (New, Processing, Shipping).
TC-039	Cancel Order - Valid	Order Module	Verify that the user can cancel an order if the status is still "New".
TC-040	Cancel Order - Invalid	Order Module	Verify that the user cannot cancel an order once it is "Shipping" or "Completed".

**5. Product Reviews & Feedback**

TC-041	Submit Review - Success	Review Module	Verify that a user who purchased a product can submit a rating and comment.
TC-042	Submit Review - Unpurchased	Review Module	Verify that a user cannot review a product they have not purchased.
TC-043	View Product Reviews	Review Module	Verify that approved reviews are displayed correctly on the product page.

**6. Admin Management (Backend)**

TC-044	Admin - Dashboard Stats	Admin Module	Verify that the dashboard widgets (Revenue, Orders) display accurate data.
TC-045	Admin - Create Product	Admin Module	Verify that Admin can add a new product with image, description, and price.
TC-046	Admin - Create Product (Validation)	Admin Module	Verify error when Admin tries to create a product without a name or price.
TC-047	Admin - Update Product	Admin Module	Verify that Admin can edit product details (e.g., update price or stock).
TC-048	Admin - Delete/Hide Product	Admin Module	Verify that Admin can deactivate a product so it no longer appears to users.
TC-049	Admin - Filter Orders	Admin Module	Verify that Admin can filter the order list by status (e.g., Show only 'New').
TC-050	Admin - Update Order Status	Admin Module	Verify that Admin can change order status (New -> Processing -> Delivered).
TC-051	Admin - View User List	Admin Module	Verify that Admin can view a list of all registered users.
TC-052	Admin - Lock/Unlock User	Admin Module	Verify that Admin can lock a user account to prevent them from logging in.
TC-053	Admin - Manage Promotions	Admin Module	Verify that Admin can create, edit, or delete discount coupons.
TC-054	Admin - Reply to Review	Admin Module	Verify that Admin can reply to customer feedback/reviews.

TC-055	Admin - Export Report	Admin Module	Verify that Admin can export sales reports to CSV or PDF format.
TC-056	Admin - View Logs	System Module	Verify that Admin can view system logs (errors, activities) for debugging.
TC-057	Admin - Backup Database	System Module	Verify that Admin can trigger a database backup successfully.
<b>7. Communication &amp; Notifications</b>			
TC-058	Newsletter Subscription	System Module	Verify that a guest can subscribe to the newsletter with a valid email.
TC-059	Chat with Support	Chat Module	Verify that the chat widget opens and messages are sent/received in real-time.
<b>8. Non-Functional &amp; Security</b>			
TC-060	URL Authorization Check	Security	Verify that a normal user cannot access Admin pages by typing the URL directly.
TC-061	SQL/NoSQL Injection	Security	Verify that input fields (Login, Search) verify against code injection attacks.
TC-062	Performance - Page Load	System	Verify that the Home page and Product page load within 3 seconds.
TC-063	Responsive - Mobile View	UI/UX	Verify that the layout adjusts correctly on mobile devices (Hamburger menu, etc).
TC-064	Broken Link Check (404)	System	Verify that accessing a non-existent URL displays a friendly 404 Error page.
TC-065	Session Timeout	Security	Verify that the user is automatically logged out after a period of inactivity.

### 3.2 Test case specifications

*[Students should present the specifications of a few (10-15) of the most important test cases]*

### 3.2.1 Test case 1

Test case	TC006 - Verify system reports error for invalid password
Related Use case	U001-2 (Authentication and Access Control)
Context	User is on the Login Page. A valid account exists with email: user@sweetie.com and password: Password123.
Input Data	Email: user@sweetie.com, Password: WrongPass999
Expected Output	<ol style="list-style-type: none"> <li>1. The system prevents login.</li> <li>2. An error message "<b>Invalid username or password. Please try again</b>" is displayed on the screen.</li> <li>3. The user remains on the Login Page.</li> </ol>
Test steps	<ol style="list-style-type: none"> <li>1. Navigate to the <b>Login Page</b>.</li> <li>2. Enter user@sweetie.com into the Email field.</li> <li>3. Enter WrongPass999 into the Password field.</li> <li>4. Click the "<b>Login</b>" button.</li> <li>5. Observe the system response.</li> </ol>
Actual Output	The system prevented login. The error message "Invalid username or password. Please try again" was displayed correctly.
Result	Passed

### 3.2.2 Test case 2

Test case	TC018 - Verify product filtering by Category
Related Use case	U010 (Product Catalog Display, Search and Filtering)
Context	User is on the <b>Products / Shop Page</b> . The database contains mixed products (Cakes, Cookies, Bread, etc.).
Input Data	Filter Selection: " <b>Bánh Kem</b> " (Cakes)
Expected Output	<ol style="list-style-type: none"> <li>1. The product grid updates immediately.</li> <li>2. Only products belonging to the "<b>Bánh Kem</b>" category are displayed.</li> <li>3. Products from other categories are hidden.</li> </ol>

<i>Test steps</i>	<ol style="list-style-type: none"> <li>1. Navigate to the <b>Products Page</b>.</li> <li>2. Locate the <b>Category Filter</b> sidebar or dropdown.</li> <li>3. Click on the <b>"Bánh Kem"</b> (Cakes) category.</li> <li>4. Observe the displayed product list.</li> </ol>
<i>Actual Output</i>	The product grid updated immediately. Only "Bánh Kem" products were visible, and others were hidden.
<i>Result</i>	Passed

### 3.2.3 Test case 3

<i>Test case</i>	<b>TC030 - Verify discount code is applied and deduction is correct</b>
<i>Related Use case</i>	<b>U011-1</b> (Manage Shopping Cart) / <b>U007</b> (Promotion)
<i>Context</i>	<p>User is on the <b>Shopping Cart Page</b>.</p> <p>Cart Subtotal is <b>200,000 VND</b>.</p> <p>A valid voucher SALE10 exists (Fixed discount: <b>20,000 VND</b>).</p>
<i>Input Data</i>	Voucher Code: SALE10
<i>Expected Output</i>	<ol style="list-style-type: none"> <li>1. A success message/tag (e.g., <b>"SALE10 applied"</b>) is displayed.</li> <li>2. The <b>"Discount"</b> field in the Order Summary updates to show <b>-20,000 VND</b>.</li> <li>3. The <b>"Total"</b> is recalculated correctly (<math>200,000 - 20,000 = 180,000</math> <b>VND</b>).</li> </ol>
<i>Test steps</i>	<ol style="list-style-type: none"> <li>1. Add items to the cart so Subtotal is 200,000 VND.</li> <li>2. Navigate to the <b>Shopping Cart Page</b>.</li> <li>3. Locate the <b>"Mã giảm giá"</b> (Voucher Code) input field.</li> <li>4. Enter SALE20.</li> <li>5. Click the <b>"Áp dụng"</b> (Apply) button.</li> <li>6. Check the calculations in the Order Summary.</li> </ol>
<i>Actual Output</i>	The success message was displayed. The discount of 20,000 VND was applied, and the Total updated to 180,000 VND correctly.
<i>Result</i>	Passed

## 3.2.4 Test case 4

Test case	TC016 - Verify search bar returns correct products by name
Related Use case	U010 (Product Catalog Display, Search and Filtering)
Context	User is on the <b>Products / Shop Page</b> . The catalog contains "Lemon Cake" and "Chocolate Cookie".
Input Data	Search Query: " <b>Lemon</b> "
Expected Output	<ol style="list-style-type: none"> <li>1. The product list filters to show only the "<b>Lemon Cake</b>".</li> <li>2. Products not matching the keyword (e.g., "Chocolate Cookie") are hidden.</li> <li>3. If no match is found, a "No products found" message is displayed.</li> </ol>
Test steps	<ol style="list-style-type: none"> <li>1. Navigate to the <b>Products Page</b>.</li> <li>2. Click on the <b>Search Bar</b> input field.</li> <li>3. Type "<b>Lemon</b>".</li> <li>4. Press Enter (or wait for the auto-search debounce).</li> <li>5. Observe the results grid.</li> </ol>
Actual Output	The product list filtered correctly, showing only "Lemon Cake" and hiding non-matching items.
Result	Passed

## 3.2.5 Test case 5

Test case	TC027 - Verify Total amount updates when changing item quantity
Related Use case	U011-1 (Manage Shopping Cart)
Context	User is on the <b>Shopping Cart Page</b> .  Cart contains: <b>1x Cupcake</b> (Price: <b>20,000 VND</b> ). Current Total: <b>20,000 VND</b> .
Input Data	Action: Click (+) <b>Plus button</b> on the quantity selector.
Expected Output	<ol style="list-style-type: none"> <li>1. The quantity input changes from <b>1</b> to <b>2</b>.</li> <li>2. The <b>Item Subtotal</b> updates to <b>40,000 VND</b>.</li> </ol>



	3. The <b>Order Total</b> updates to <b>40,000 VND</b> (assuming no shipping/discounts yet).
<i>Test steps</i>	1. Navigate to the <b>Shopping Cart Page</b> with the item in the cart. 2. Locate the <b>Quantity Selector</b> (Minus, Input, Plus). 3. Click the <b>(+) Plus</b> button. 4. Observe the <b>Total</b> price update.
<i>Actual Output</i>	The quantity increased to 2. The Order Total immediately updated to 40,000 VND.
<i>Result</i>	Passed

### 3.2.6 Test case 6

<i>Test case</i>	<b>TC021 - Verify Product Detail Page displays correct price, description, and image</b>
<i>Related Use case</i>	<b>U010</b> (Product Catalog Display) / <b>U003</b> (Product Management)
<i>Context</i>	User is on the <b>Home Page</b> or <b>Products Page</b> . Target Product: <b>"Red Velvet"</b> (Price: 50,000 VND, Image: red_velvet.jpg, Desc: "Classic red cake").
<i>Input Data</i>	Click action on the <b>"Red Velvet"</b> product card.
<i>Expected Output</i>	1. Redirects to the <b>Product Detail Page</b> . 2. Product Name is <b>"Red Velvet"</b> . 3. Price is displayed as <b>50,000 VND</b> . 4. Description matches <b>"Classic red cake"</b> . 5. The correct image (red_velvet.jpg) is loaded and visible.
<i>Test steps</i>	1. Navigate to the product listing. 2. Click on the image or name of <b>"Red Velvet"</b> . 3. Wait for the Detail Page to load. 4. Verify the Name, Price, Description text, and Image against the expected data.
<i>Actual Output</i>	Redirected to the Detail Page successfully. The Name, Price, Description, and Image matched the expected data exactly.
<i>Result</i>	Passed

## 3.2.7 Test case 7

Test case	TC002 – Verify system reports error for duplicate email during registration
Related Use case	U001-1 (User Registration)
Context	User is on the Registration Page. An account already exists with email: <b>user@sweetie.com</b> .
Input Data	Email: <b>user@sweetie.com</b> Username: <b>user123</b> Password: <b>Password123</b> Confirm Password: <b>Password123</b>
Expected Output	<ol style="list-style-type: none"> <li>1. The system prevents account creation.</li> <li>2. An error message <b>"Email already exists. Please use another email."</b> is displayed.</li> <li>3. The user remains on the Registration Page.</li> </ol>
Test steps	<ol style="list-style-type: none"> <li>1. Navigate to the Registration Page.</li> <li>2. Enter <b>"user@sweetie.com"</b> into the Email field.</li> <li>3. Enter <b>"user123"</b> into Username field.</li> <li>4. Enter <b>"Password123"</b> into the Password field.</li> <li>5. Enter <b>"Password123"</b> into the Confirm Password field.</li> <li>6. Click the <b>"Register"</b> button.</li> <li>7. Observe the system response.</li> </ol>
Actual Output	The system prevented registration. The error message <b>"Email already exists. Please use another email."</b> was displayed correctly.
Result	Passed

## 3.2.8 Test case 8

<b>Test case</b>	<b>TC-004 – Verify system reports error for invalid password</b>
<i>Related Use case</i>	<b>U001-2</b> (Authentication and Access Control)
<i>Context</i>	User is on the Login Page. A valid account exists with email: <b>user@sweetie.com</b> and password: <b>Password123</b> .
<i>Input Data</i>	Username: <b>WrongUsername</b> Password: <b>WrongPass999</b>
<i>Expected Output</i>	1. The system prevents login. 2. An error message "Invalid username or password. Please try again" is displayed. 3. The user remains on the Login Page.
<i>Test steps</i>	1. Navigate to the Login Page. 2. Enter “ <b>WrongUsername</b> ” into the Username field. 3. Enter “ <b>WrongPass999</b> ” into the Password field. 4. Click the Login button. 5. Observe the system response.
<i>Actual Output</i>	The system prevented login. The error message "Invalid username or password. Please try again" was displayed correctly.
<i>Result</i>	<b>Passed</b>

## 3.2.9 Test case 9

<b>Test case</b>	<b>TC-007 – Verify user can update profile information</b>
<i>Related Use case</i>	<b>U001-4</b> (User Profile Management)

<i>Context</i>	User is logged in and is on the <b>User Profile</b> page. The user account already exists with initial profile information.
<i>Input Data</i>	Fullname: <b>Nguyễn Văn A</b> Age: <b>22</b> Phone Number: <b>0123456789</b> Address: <b>123 Nguyễn Trãi, Hà Nội</b>
<i>Expected Output</i>	1. The system updates the user profile successfully. 2. A success message such as " <b>Profile updated successfully</b> " is displayed. 3. Updated information (Fullname, Age, Phone Number, Address) is saved and displayed correctly on the Profile page.
<i>Test steps</i>	1. Login with a valid user account. 2. Navigate to <b>Update User Profile</b> page. 3. Enter new values for Fullname, Age, Phone Number, and Address. 4. Click the <b>Save Profile</b> button. 5. Refresh the page or revisit the Profile page.
<i>Actual Output</i>	The system saved the updated profile information and displayed the success message. All updated fields were shown correctly after refresh.
<i>Result</i>	<b>Passed</b>

### 3.2.10 Test case 10

<i>Test case</i>	<b>TC-018 – Verify user leaves empty address when checkout</b>
<i>Related Use case</i>	<b>U011-2</b> (Proceed to Checkout and Confirm Order)
<i>Context</i>	User is logged in and has at least one product in the shopping cart. User is on the Checkout Page.

<i>Input Data</i>	Fullname: <b>Nguyễn Văn A</b> Phone Number: <b>0123456789</b> Address: <i>(left empty)</i> District: <b>10</b> City: <b>Ho Chi Minh City</b>
<i>Expected Output</i>	1. The system prevents order submission. 2. A validation message such as <b>"Shipping address is required"</b> is displayed. 3. The user remains on the Checkout Page.
<i>Test steps</i>	1. Navigate to the Checkout Page. 2. Enter <b>"Nguyễn Văn A"</b> in the Full Name field. 3. Enter <b>"0123456789"</b> in the Phone Number field. 4. Leave the Address field empty. 5. Enter <b>"10"</b> in the District field. 6. Enter <b>"Ho Chi Minh City"</b> in City field. 6. Click the <b>Next</b> button. 7. Observe the system response.
<i>Actual Output</i>	The system prevented checkout and displayed the message <b>"Shipping address is required"</b> .
<i>Result</i>	Passed

### 3.2.11 Test case 11

<i>Test case</i>	<b>TC-025 - Verify that adding an item updates the cart icon count and stores the item</b>
<i>Related Use case</i>	<b>U011.1 (Manage Shopping Cart)</b>
<i>Context</i>	User is logged in and viewing the Product Detail Page of "Tiramisu Cake". The Shopping Cart is currently empty (Cart count is 0). The product "Tiramisu Cake" is in stock.
<i>Input Data</i>	Product: Tiramisu Cake

	Quantity: 1 Action: Click "Thêm vào giỏ hàng" (Add to Cart)
<i>Expected Output</i>	<ol style="list-style-type: none"> <li>1. A success message (e.g., "Đã thêm sản phẩm vào giỏ") is displayed temporarily.</li> <li>2. The Cart Icon badge updates from 0 to 1.</li> <li>3. The item "Tiramisu Cake" is stored in the cart database with the correct price and quantity.</li> </ol>
<i>Test steps</i>	<ol style="list-style-type: none"> <li>1. Navigate to the Product Detail Page of "Tiramisu Cake".</li> <li>2. Click the "Thêm vào giỏ hàng" (Add to Cart) button.</li> <li>3. Observe the notification message.</li> <li>4. Click on the Cart Icon to verify the item is listed inside.</li> </ol>
<i>Actual Output</i>	The success message was displayed. The Cart Icon count updated to 1. The "Tiramisu Cake" appeared correctly in the cart list.
<i>Result</i>	Passed

### 3.2.12 Test case 12

<i>Test case</i>	<b>TC-045 - Verify that Admin can add a new product with image, description, and price</b>
<i>Related Use case</i>	<b>U003-1 (Product Management System - Create)</b>
<i>Context</i>	Admin is successfully logged into the system. Admin is currently on the Products Management page.
<i>Input Data</i>	Product Name: Bánh Mousse Dâu Tây Price: 35,000 Stock Level: 50 (Positive integer required) Description: "Bánh mì giòn tan với sốt bơ tỏi đặc biệt." Image: "strawberry_mousse.jpg"
<i>Expected Output</i>	<ol style="list-style-type: none"> <li>1. System saves the new product record to the database.</li> <li>2. A confirmation message "Product <b>Bánh Mousse Dâu Tây</b> created successfully" is displayed.</li> <li>3. The browser redirects the Admin to the product list or the product's detail page.</li> <li>4. The new product appears in the catalog with correct details (Name, Price, Stock).</li> </ol>
<i>Test steps</i>	<ol style="list-style-type: none"> <li>1. Navigate to the Product Management list.</li> <li>2. Click the "Add New Product" button.</li> </ol>

	<ol style="list-style-type: none"> <li>Fill in the required fields: Name ("<b>Bánh Mousse Dâu Tây</b>"), Price (45,000), Stock Level (20), and Description.</li> <li>Upload the image "strawberry_mousse.jpg"</li> <li>Click the "Save" or "Create Product" button.</li> </ol>
<i>Actual Output</i>	The product was saved successfully. The message "Product <b>Bánh Mousse Dâu Tây</b> created successfully" appeared. The system redirected to the Product List where the new item was visible.
<i>Result</i>	Passed

### 3.2.13 Test case 13

<i>Test case</i>	<b>TC-054 - Verify that Admin can reply to customer feedback/reviews</b>
<i>Related Use case</i>	<b>U006-3 (Respond to Review)</b>
<i>Context</i>	<p>Admin is logged in and is on the Feedback Management page.</p> <p>A customer (User B) has left a review: "Bánh Tiramisu rất thơm và mềm, không bị ngọt quá." regarding the product "Bánh Tiramisu".</p> <p>The review status is currently "Approved"</p>
<i>Input Data</i>	<p>Selected Review: Review from "Bánh Tiramisu".</p> <p>Response Content: "Cảm ơn bạn đã yêu thích món Bánh Tiramisu của tiệm! Hy vọng được phục vụ bạn lần tới ạ."</p> <p>Action: Click "Post Response" button.</p>
<i>Expected Output</i>	<ol style="list-style-type: none"> <li>The system validates the input and saves the response to the database</li> <li>The original feedback's status updates to "Responded"</li> <li>A success message "<b>Response posted successfully</b>" is displayed</li> <li>The Admin's response appears on the interface linked to the original review</li> </ol>
<i>Test steps</i>	<ol style="list-style-type: none"> <li>Navigate to the Feedback Management list.</li> <li>Locate the review for "Bánh Tiramisu".</li> <li>Click the "Respond" button.</li> <li>Type the content: "Cảm ơn bạn đã yêu thích món Bánh Tiramisu của tiệm! Hy vọng được phục vụ bạn lần tới ạ."</li> <li>Click the "Post Response" button.</li> </ol>
<i>Actual Output</i>	The success message "Response posted successfully" was displayed. The review status changed to "Responded", and the reply was visible under the customer's comment.
<i>Result</i>	Passed

