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# **Automation Exercise Project**

**Software Requirements Specification**

**3/10/2025**

**Prepared for**

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## 0.1 Revision History

Date	Description	Author	Comments
3/10/2025	Version 1	Amr Ashraf	Initial Draft
5/10/2025	Version 1.1	Amr Ashraf	Added products and Search
6/10/2025	Version 1.2	Madonna Ramadan	User Management
6/10/2025	Version 1.3	Shahd Salah	Orders & Account
6/10/2025	Version 1.4	Jomana Khodir	Navigation & static pages
6/10/2025	Version 1.5	Rana Mamdouh	Cart

## 1. Introduction

The Automation Exercise - Test Plan & Requirements Overview this document describes the minimal release and testing scope for the “Automation Exercise” practice website (a public demo site used for automation and API practice). The goal of this release is to provide a clear, test-oriented requirements baseline so developers and testers can plan, implement and automate test cases against the demo site.” [automationexercise.com](http://automationexercise.com)”

## 1.1 Purpose

The purpose of this document is to define what will be delivered and tested for the initial release of the automation exercise practice site (functional features and the testing boundaries). This document will be used by stakeholders: product owner, developers, QA engineers, automation engineers, and reviewers. (Templates and structure follow common SRS / Test Plan practice as recommended by ISO/IEEE requirements guidance).

## 1.2 Definitions, Acronyms, and Abbreviations

Term	Definition
UI	User interface
SRS	Software Requirements Specification
FR	Functional Requirement
TR	Technical Requirement
BC	Bar code - unique product identifier
QTY	Quantity of items added to the cart
ST	Sub Total –the price before any discounts and taxes
TL	Total after the taxes and discounts “if it exists”
AC	Adding to cart-Adding items to the shopping cart
RC	Remove from cart-Remove / delete items from the shopping cart
IC	Inventory Check -ensures the quantity added to cart does not exceed available stock

## 1.3 Audience

Developers, Testers / Automation Engineers, Product Owner, Release Manager, and other stakeholders responsible for test coverage and release decisions.

## 2. Specific Requirements

### 2.1 Functional Requirements

ID	Description
FR1	Users should be able to view a list of all available products.
FR2	Each product must display a name, price, and image.
FR3	Users should be able to open the product details page.
FR4	Product details page must show description, price, availability, and add-to-cart button.
FR5	The search bar should allow users to find products by name or keyword.
FR6	Search results should only display relevant products.
FR7	User should be able to filter products by category (e.g., Men, Women, Kids).
FR8	Users should be able to filter products by brand.
FR9	Search results must be cleared or reset when the user navigates away.

## Checkout Process

ID	Description
FR10	The system shall allow users to review items in the shopping cart before proceeding to checkout.
FR11	The system shall display the subtotal, tax, shipping cost, and total amount.
FR12	The system shall allow users to update the quantity or remove products from the cart.
FR13	The system shall require users to log in or register before completing checkout
FR14	The system shall collect necessary billing and shipping information from the user.
FR15	The system shall display a summary of the order before final confirmation.

## Payment Module

ID	Description
FR16	The system shall allow users to choose a payment method (Credit/Debit Card).
FR17	The system shall securely transmit payment details using HTTPS.
FR18	The system shall validate payment card details (number, expiry date, CVV).
FR19	The system shall display appropriate error messages for failed or incomplete payments.
FR20	The system shall update the order status to 'Paid' once payment confirmation is received.
FR21	The system shall send an email confirmation to the user after successful payment.

## Order Management

ID	Description
FR22	The system shall store all order details in the database for future reference.

FR23	The system shall allow users to view their order history in their profile section.
FR24	The system shall allow admins to view and manage all orders.
FR25	The system shall display order tracking details (if applicable).
FR26	The system shall allow users to cancel orders before shipment if payment is pending.

## Sign up

ID	Description
FR-27	The system shall allow new users to sign up by completing all required fields .
FR-28	The system shall includ two main section: Account informaion and Address information
FR-29	Account information must include: Title ,Name ,Email ,Password and Date of Birth
FR-30	Address information must include: First name ,Last name ,company ,Address_1 ,Address_2 ,country ,State ,City ,Zip code and mobile number.
FR-31	The system shall validate all mandatory fields before submission.
FR-32	The system shall verify that the entered e mail address is in a valid format
FR-33	the system shall check for duplicate email addresses before creating an account
FR-34	The Password field must require at least 8 characters with uppercase, lowercase, digits, and symbols.
FR-35	The system shall verify that "Confirm Password" matches "Password".
FR-36	The system shall encrypt the user's password before saving it in the database.
FR-37	The system shall display an appropriate error message for missing or invalid input fields

FR-38	Text fields like Name and City must allow only letters and spaces
FR-39	Numeric fields (Zip code, Mobile) must allow only positive number
FR-40	The system shall provide checkboxes for newsletter and partner offers
FR-41	Clicking "Create Account" shall submit data to the backend for verification.
FR-42	Successful signup displays "Account created successfully" and redirects to login.
FR-43	If signup fails, an appropriate error message shall appear without page reload.
FR-44	The system shall display a success message upon successful account creation.
FR-45	The page shall remain responsive and properly formatted on all devices

## Login

ID	Description
FR-46	The system shall allow registered users to log in using their Email, password
FR-47	The system shall validate all required login fields are filled
FR-48	Both Email and Password fields must be mandatory
FR-49	The Email field must accept only valid email formats
FR-50	The Password field must mask characters during input
FR-51	The system shall compare entered credentials with stored data in the database.
FR-52	On successful login, the user shall be redirected to the Home or Dashboard page
FR-53	"Remember Me" checkbox shall keep the session active after browser close

FR-54	“Forgot Password” link shall navigate to the password reset page
FR-55	Login page shall remain responsive on desktop, tablet, and mobile
FR-56	The system shall display an error message for invalid email and password.
FR-57	“Login” button shall have hover and active interactivity states
FR-58	The system shall lock the account temporarily after multiple failed login attempts (optional security measure)

## Logout

ID	Description
FR-59	The system shall allow logged-in users to log out securely
FR-60	The system shall terminate the active session upon logout
FR-61	The system shall clear cookies and temporary data related to the user session
FR-62	the system shall display a confirmation message after successful log out.

## Delete account

ID	Description
FR-63	The system shall allow new users to permanently delete their account.
FR-64	The system shall ask users to confirm deletion before proceeding
FR-65	The system shall require password re-entry before deleting the account
FR-66	The system shall verify user credentials before deletion.
FR-67	The system shall delete the user’s data and related records from the database.
FR-68	the system shall display a confirmation message after successful deletion

FR-69	The system shall display an error message if password verification fails
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## Contact Us

ID	Description
FR-70	The system shall provide "contact us" form with input field: name, email, subject, and message.
FR-71	The system shall validate all input fields before submission
FR-72	The system shall check that email field contains a valid email address.
FR-73	the system shall send the message content to the support team's email address.
FR-74	The system shall display a success message upon successful message delivery.
FR-75	The system shall display an error message for incomplete or invalid fields

## Orders & accounts

ID	Description
FR-76	The system shall display an 'Order Confirmed' page after a successful checkout.
FR-77	The system shall allow users to view their past orders in an 'Order History' section.
FR-78	Each order entry shall display order ID, date, total amount, and status.
FR-79	The system shall allow users to download invoices for completed orders in PDF format.

FR-80	The system shall allow users to edit their account information including name, email, and password.
FR-81	The system shall validate all account update fields before submission.
FR-82	The system shall send an email notification to users after account information is updated.
FR-83	The system shall ensure that post-checkout data (order ID, total price, date) matches checkout input data.

## Navigation & Static Pages

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ID	Description
FR-84	Header links work correctly and open the expected pages.
FR-85	Footer links work correctly and navigate to proper pages.
FR-86	Clicking the site logo redirects user to the homepage.
FR-87	Static content pages (Contact Us, Test Cases) display completely and correctly.

## Cart operations

ID	Description
FR-89	Users can add products to the cart from the product page or listing page.
FR-90	The system validates stock availability before adding an item.
FR-91	If requested quantity > available stock, show: "Only X items available in stock."
FR-92	Users can update the product quantity directly from the cart page.
FR-93	Quantity field restricted between 1 and available stock.
FR-94	Users can remove products individually from the cart.
FR-95	"Clear Cart" removes all items after confirmation prompt.

FR-96	Cart items remain after refreshing using cookies or local storage (Cart Persistence).
FR-97	Subtotal, tax, and total auto-update when quantity or product list changes.
FR-98	Cart displays image, name, price, quantity, subtotal, and availability.

## Checkout Preparation

ID	Description
FR-99	Prevent checkout if cart is empty.
FR-100	Validate product availability before checkout.
FR-101	If item becomes OOS during checkout, show: “Item unavailable — please update your cart.”
FR-102	Cart summary must be accurate before redirection to checkout.
FR-103	Cart data must sync with user account if logged in.

## 3.Front End Details

### Checkout & payment page

ID	Component	Description	Technical Requirements
FR-1	Checkout Button	“Proceed to Checkout” button visible when cart has items	Redirects to Checkout page via HTTPS.
FR-2	Checkout Page	Displays cart summary, subtotal, and taxes	Page loads under 3 seconds.
FR-3	Address Section	Collects billing/shipping address	All fields validated for emptiness and format.
FR-4	Shipping Method	Shows shipping options	One option preselected; cost included in total.

FR-5	Payment Method	Displays payment choices	Disabled methods appear greyed out.
FR-6	Card Payment Form	Input for card details	16-digit number, valid expiry, 3-digit CVV.
FR-7	Submit Payment	User submits payment	Front-end validation before submission.
FR-8	Payment Response	Displays success or failure message	Shows appropriate feedback to user.
FR-9	Confirmation Page	Displays order details and total	Data must match checkout input.
FR-10	Email Notification	Confirmation message displayed	Shows message: "A confirmation email has been sent."

## User Management pages

ID	Component	Description	Technical Requirements
FR-11	Signup Page	<p>the Signup page contains two main sections:</p> <p><b>Account Information</b>            (Title, Name, Email, Password, Confirm Password, Date of Birth, Newsletter options) and</p> <p><b>Address Information</b>            (First Name, Last Name, Company, Address, Country, State, City, Zip code, Mobile Number).</p> <p>Users can create an account by filling all required fields and clicking "Create Account." The layout is form-based, structured</p>	<ul style="list-style-type: none"> <li>- Built using <b>HTML5, CSS3, and JavaScript</b> (or equivalent front-end framework). Supports <b>client-side validation</b>, form field restrictions (regex, numeric limits), and responsive layout for desktop, tablet, and mobile. Uses <b>HTTPS</b> for secure data transmission and JS validation for all mandatory inputs.</li> <li>The "<b>Create Account</b>" button triggers a POST request to the backend API.</li> </ul>

		into labeled input fields, dropdown menus, and checkboxes. Success and error messages are displayed inline.	
FR-12	Login Page	The Login page allows registered users to access their accounts. It contains fields for <b>Email</b> and <b>Password</b> , along with a “Remember Me” checkbox, “Forgot Password” link, and “Login” button. It also includes a navigation link for new users to redirect to the Signup page. Error messages appear below the form for invalid credentials, while valid users are redirected to the home/dashboard page.	- developed using <b>HTML5, CSS3, JavaScript</b> . Input fields use client-side validation (regex for email, masked password field). Form submission is handled via <b>AJAX/Fetch API</b> . The page layout is <b>responsive</b> , ensuring elements scale properly across devices. Uses <b>secure authentication (JWT/session cookies)</b> and prevents multiple form submissions. Includes hover/active button states and accessible labels for all form controls.
FR-13	Logout Function	The logout feature enables users to securely end their session. Once clicked, it clears session data/cookies and redirects the user to the homepage or login page.	- Logout button in navigation bar. - JavaScript function to clear user token/session. - Redirect to Login or Home page after logout. - Visible only when the user is logged in. - Responsive button placement for mobile/desktop.
FR-14	Delete Account Page	This page allows users to permanently delete their accounts. It requires confirmation before deletion (e.g., a popup or “Are you sure?” message). After	- “Delete Account” button in user profile settings. - Confirmation modal using JavaScript. - Frontend call to DELETE API endpoint. - CSS for alert/popup styling. - Redirect function after successful deletion.

		confirmation, it triggers the backend API to delete the account and redirects the user to the homepage.	- Secure action confirmation to prevent accidental deletion.
FR-15	Contact Us Page	The Contact Us page enables users to send messages or inquiries to the support team. It contains fields like Name, Email, Subject, and Message. The form validates input before submission and shows a success message once sent.	- HTML form with text inputs and textarea. - JavaScript validation for empty fields and valid email format. - CSS for layout and mobile responsiveness. - Submit button triggering backend POST request. - Display success/error messages dynamically. - Optional integration with email API or backend message system.

## Orders & Accounts

Component	Description	Technical Notes
Order Confirmation Page	Displays message confirming successful order placement with summary details.	Includes order ID, date, and total. Redirects automatically after payment confirmation.

Order History Page	Shows list of all previous orders placed by the logged-in user.	Pagination enabled; latest order shown first. Option to download invoice.
Download Invoice Button	Allows users to download a PDF invoice for completed orders.	Triggers backend PDF generation API; downloaded securely via HTTPS.
Edit Account Page	Enables users to update name, email, or password.	Validates all input fields; password strength indicator included.
Post-Checkout Verification	Ensures that order data is consistent with checkout details.	Cross-checks total amount, order ID, and timestamp against checkout record.

## Cart page

ID	Component	Description	Technical Requirements
FR-1	Cart Table	Displays product image, name, price, quantity, and subtotal.	Updates dynamically without full reload.
FR-2	Quantity Selector	Increase/decrease product quantity.	Numeric only + stock validation.
FR-3	Remove Button	Deletes one product from cart.	Updates total immediately.
FR-4	Clear Cart Button	Deletes all items.	Requires user confirmation.

FR-5	Stock Message	Shows “Only X available” if exceeding stock.	Appears in red below quantity.
FR-6	Cart Summary	Shows subtotal, tax, total.	Auto-updates dynamically.
FR-7	Proceed to Checkout	Redirect to checkout page.	Disabled if cart invalid.

### 3.1. Technical Requirements

#### Products

- T1 The “Products” page must load within 5 seconds on a stable internet connection.
- T2 All product images, names, prices, and ratings must be displayed properly without broken links or missing data.
- T3 Each product card on the Products page must contain the following elements: image, title, price, and “View Product” button.
- T4 Clicking “View Product” must open the corresponding Product Details page for the correct product.
- T5 The Product Details page must display the following fields: Product image, name, category path, star rating, price, quantity selector, Add to Cart button, Availability, Condition, and Brand.
- T6 The Quantity field must accept only **positive** integers; negative, zero, or non-numeric values must be restricted.
- T7 Clicking the Add to Cart button must correctly add the product with the selected quantity to the cart.
- T8 The Price field must dynamically calculate the total cost (price × quantity) and display correctly in the cart.
- T9 Availability should display “In Stock” or “Out of Stock” based on product status.
- T10 Condition should always display accurate status (“New” or “Used”).
- T11 The Brand displayed must match the brand selected or shown on the previous page.

- T12 Category and brand filters on the left sidebar must dynamically refresh the products shown on the page.
- T13 Product reviews section must include input fields for Name, Email, and Review message.
- T14 Clicking Submit under the review section must display a confirmation message “Thank you for your review”) or equivalent feedback.
- T15 The “Add to Cart” and “Submit” buttons must have visible hover and active states to indicate interaction.
- T16 The navigation menu (Home, Products, Cart, etc.) must remain accessible and functional on the Product Details page.
- T17 The Product Details layout must remain responsive — all sections visible without overlapping or cutoff at 100%, 75%, and 50% zoom levels.
- T18 When navigating between products, the URL should dynamically reflect the product ID or name for clarity.
- T19 The Back button or browser navigation must correctly return to the previous Products list page with same filters active.
- T20 The Product Details page must be compatible across browsers (Chrome, Edge, Firefox – latest versions).
- T21 If any field (price, brand, image, etc.) fails to load, the system must handle it gracefully without page crash.
- T22 Applying search results, category, or brand filters must not break or distort the Product Details layout.
- T23 The user session must retain product browsing context until logout or browser close.
- T24 **Reviewer Name** field must follow these rules:
- Can contain letters and spaces only
  - **Cannot contain numbers**
  - Cannot be blank

- Cannot contain special characters
- Cannot start with a space

T25 Email field must follow valid email format

T26 Review field must follow these rules:

- Cannot be blank
- Must contain at least 10 characters.

## Signup

T27 The “Signup” page must load within 3 seconds on a stable internet connection.

T28 All input fields (Full Name, Email, Password, Confirm Password, Date of Birth, Address details, etc.) must be displayed correctly without overlapping or missing elements.

T29 Full Name field must not accept numbers, special characters, or leading/trailing spaces.

T30 Email field must accept only valid email formats and must be unique in the system.

T31 Password field must hide input characters and require a minimum of 8 characters, including uppercase, lowercase, digits, and special characters.

T32 Confirm Password field must match the Password field before submission.

T33 All required fields must show a red border or validation message when left empty.

T34 Clicking “Sign Up” must send user data to the backend and show a success message (“Account created successfully”) or an error message if failed.

T35 If the email already exists, a validation message (“Email already registered”) must appear below the Email field.

T36 The page must remain responsive and properly formatted on desktop, tablet, and mobile screens.

T37 “Sign Up” button must have visible hover and active states to indicate interactivity.

- T38 The form must support **client-side** and **server-side** validation for all inputs.
- T39 The **Date of Birth** dropdowns (day, month, year) and **Country** list must be dynamically populated.
- T40 All numeric fields (Zipcode, Mobile Number) must restrict non-numeric or negative input.
- T41 The **Create Account** button must have visible hover and active states to indicate interactivity.
- T42 The page layout must remain **responsive** across all screen sizes (desktop, tablet, and mobile).
- T43 The system must prevent multiple form submissions by disabling the button after click until a response is received.
- T44 The signup process must use **HTTPS protocol** for secure data transmission.
- T45 Successful registration must automatically redirect the user to the Login page after showing “Account created successfully.”
- T46 The system must handle backend failure gracefully by displaying appropriate error messages without reloading the page.
- T47 On successful signup, the system must trigger an automated **confirmation email** to the user’s registered email address.

## Login Page

- T48 .The Login page must load within 3 seconds on a stable internet connection.
- T49. All input fields (Email and Password) must be properly aligned and visible on all devices.
- T50. The Email field must accept only valid email formats and must be trimmed of any leading or trailing spaces.
- T51. The Password field must hide all entered characters and support keyboard accessibility.
- T52. Clicking Login must send a POST request to the backend authentication API.
- T53. If login credentials are correct, the system must redirect the user to the Home or Dashboard page.
- T54. If credentials are incorrect, an error message “Invalid email or password” must be

displayed without reloading the page.

T55. The Remember Me checkbox must allow the system to store an authentication token or cookie to keep the user logged in until logout.

T56. The Forgot Password link must navigate to the Password Reset page.

T57. The login form must validate inputs both client-side (JavaScript) and server-side for security.

T58. Backend responses must return standard HTTP codes:

- 200 → Successful authentication
- 401 → Invalid credentials
- 500 → Server error

T59. The session or token must be stored securely and cleared immediately upon logout.

T60. The Login button must have hover and active states to provide visual interaction feedback.

T61. The form layout must remain responsive and visually consistent on desktop, tablet, and mobile devices.

T62. Invalid login attempts must not expose sensitive information or internal system data.

T63. The system must include rate limiting to prevent brute-force login attacks.

T64. If the “Remember Me” option is enabled, user session persistence must be maintained for up to 30 days.

T65. The login process must comply with HTTPS encryption and secure cookie handling standards.

## Logout Functionality

T48 Clicking “Logout” must immediately terminate the current session.

T49 User must be redirected to the homepage or login page after successful logout.

T50 A message (“You have logged out successfully”) must be displayed after logout.

T51 All authentication tokens and session data must be cleared from the browser.

- T52 Logout button must be accessible from all pages (usually via the navigation bar).
- T53 Logout button must display hover and active states for better user experience.

## Delete Account Feature

- T54 “Delete Account” button must be visible under user settings or profile section.
- T55 Clicking “Delete Account” must open a confirmation popup asking “Are you sure you want to delete your account?”.
- T56 Popup must include a password confirmation field before deletion can proceed.
- T57 If the password entered is incorrect, an error message (“Incorrect password”) must be displayed.
- T58 On confirming deletion, the system must remove the account and redirect to the homepage or signup page.
- T59 A success message (“Your account has been deleted successfully”) must be displayed.
- T60 If the deletion fails, an error message must appear without reloading the page.
- T61 All related user data (session, cart, saved items) must be cleared from the browser.
- T62 The confirmation popup and layout must remain responsive on all screen sizes.

## Contact Us Page

- T63 The “Contact Us” page must load within 3 seconds on a stable internet connection.
- T64 Form must include: Name, Email, Subject, Message fields, and “Send” button.
- T65 Name field must not accept numbers or special characters.
- T66 Email field must accept only valid email formats.
- T67 Subject must allow alphanumeric characters up to 100 characters.
- T68 Message field must require at least 10 characters and cannot be left blank.
- T69 All fields must show validation errors if left empty or filled incorrectly.
- T70 Clicking “Send” must display a confirmation message (“Your message has been sent successfully”) or show an error if submission fails.

- T71 If the internet connection fails, an appropriate error message must be shown (“Failed to send. Please try again.”).
- T72 “Send” button must have hover and active states for interactivity feedback.
- T73 Contact form layout must remain responsive and accessible across browsers (Chrome, Edge, Firefox, Safari).
- T74 After successful submission, all input fields must be cleared automatically.

## Orders & Accounts

**T75.** Each order placed must have a unique, system-generated *Order ID* that is automatically created upon successful completion of the checkout process.

**T76.** The *Order ID* must be displayed on both the order confirmation page and within the user’s order history.

**T77.** The *Order Total* must correctly calculate the sum of all items in the order, including product price multiplied by quantity, and must add any applicable shipping fees.

**T78.** The *Payment Status* field must display “Paid” only after a successful checkout confirmation has been received.

**T79.** The *Order Date* must reflect the current system date and time when the user completes the order.

**T80.** The *Download Invoice* option must generate a readable PDF invoice that includes the Order ID, date, product list, quantities, total amount, and shipping address.

**T81.** The generated *Invoice File Name* must follow a consistent format:  
*Invoice\_<OrderID>.pdf*.

**T82.** The *Order History* page must display all previous orders made by the user, sorted in descending order based on date.

**T83.** Each entry in the *Order History* must display the Order ID, date, status, total cost, and a “View Details” link.

**T84.** When the user clicks “View Details”, the system must open a page showing full order details, including the product list, quantities, prices, and shipping information.

**T85.** The *Order Status* must accurately show values such as “Pending”, “Processing”, or “Delivered”, depending on the current stage of the order.

**T86.** The *Edit Account Information* page must display pre-filled fields for Name, Email, Address, and Password using the user’s existing data.

**T87.** The *Name* field must not be blank, must not contain numbers or special characters, and must not start with a space.

**T88.** The *Email* field must not be blank and must follow a valid email address format **T89**. The *Password* field must contain at least eight characters and include at least one number and one special character.

**T90.** The *Address* field must not be blank, must not start with a space, and must not contain unsupported special characters.

**T91.** The *Phone Number* field must not be blank, must contain only numeric characters (10–15 digits), and must not start with zero unless prefixed by a valid country code.

**T92.** When the user clicks “Save Changes”, the system must validate all input fields and display a confirmation message indicating that the changes were saved successfully.

**T93.** If any input field is invalid, the system must highlight the invalid field in red and show a descriptive error message without reloading the page.

**T94.** The *Orders* and *Account Information* pages must load properly across the latest versions of Chrome, Microsoft Edge, and Firefox, without any visual or functional layout issues.

## **Navigation & static pages**

**T95.** The homepage must load successfully when the user enters the website URL and presses Enter. All sections (header, footer, and main content) must display correctly without any errors.

**T96.** All header navigation links (e.g., About, Services, Contact) must be clickable and redirect the user to the correct corresponding pages without any broken links or errors.

**T97.** All footer links (e.g., Privacy Policy, Terms & Conditions) must be clickable and open the correct corresponding pages either in the same tab or a new one.

**T98.** Clicking the website logo from any internal page must redirect the user back to the homepage successfully.

**T99.** All static pages such as “Contact Us” and “Test Cases” must display their content correctly, including text, images, and layout, with no missing or misaligned elements.

**T100.** The website layout, fonts, and visual elements must remain consistent across different browsers (e.g., Chrome, Firefox, Edge, Safari), with no distortion or alignment issue

## Cart Module

**T101.** The cart data must persist using cookies or user session storage so that products remain available even after page refresh or temporary navigation away from the site.

**T102.** All cart updates, such as adding, removing, or modifying product quantities, must reflect instantly using AJAX or JavaScript without requiring a full page reload.

**T103.** Any change in the quantity of items must automatically trigger recalculation of the subtotal and total price in real time.

**T104.** Before the user proceeds to checkout, the system must perform a stock validation check to ensure all items in the cart are available for purchase.

**T105.** The system must prevent users from adding inactive, out-of-stock, or discontinued products to the cart.

**T106.** All cart-related user actions — including item addition, removal, and quantity modification — must be logged in the system for tracking and analytics purposes.

**T107.** The cart functionality must be compatible with the latest stable versions of major browsers, including Google Chrome, Microsoft Edge, and Mozilla Firefox.

**T108.** Each cart operation, such as adding or updating an item, must have an average response time of less than three seconds under normal internet conditions.

**T109.** If a product image or price fails to load, the system must display a default placeholder image and an “N/A” label to maintain consistent layout and prevent display errors.

**T110.** Cart data for guest users must be automatically cleared upon logout or session timeout, while registered users’ carts must persist under their accounts until manually emptied.

### 3.2 Functional validations

#### Product Page

ID	Validation Description
F1	System must display all available products on the “All Products” page.
F2	Each product must show correct name, price, and image.
F3	Clicking on a product’s image or View Product button must open the correct Product Details page.
F4	Product information on the listing page (name, price, brand) must match data shown on the Product Details page.
F5	The total number of products displayed must match the count shown beside each brand and category name.
F6	Products must remain correctly aligned and visible when scrolling through the page.
F7	“Add to Cart” button on each product card must be clickable and add the selected product successfully to the cart.
F8	If a product image or data is missing, a placeholder or default message must appear without breaking page layout.

## Search bar

ID	Validation Description
F9	User must be able to enter a keyword in the search bar and click the search button.
F10	When a valid keyword (e.g., “Dress”) is entered, only matching products must be displayed.
F11	When a partial keyword is entered (e.g., “Dre”), all products containing that string must appear.
F12	When an invalid keyword is entered, system must display “Product not found” message.
F13	Search results must appear within 3 seconds after submitting the query.
F14	Search results must display products in the same format (image, name, price) as the main Products page.
F15	Clearing the search input or navigating away must reset product list to All Products view.
F16	Search must not be case-sensitive (e.g., “dress” and “Dress” should return same results).
F17	Search function must ignore <b>leading or trailing spaces</b> in the entered keyword.
F18	Searching must not cause layout breakage or blank product frames.

## Category and filters

ID	Validation Description
F19	Clicking on a category (e.g., Women, Men, Kids) must display products belonging to that category only.
F20	Clicking on a subcategory (e.g., Women → Tops) must show only products under that subcategory.
F21	Selecting a brand (e.g., Polo, H&M) must filter and display products for that brand only.
F22	The number of products shown after applying a filter must match the count in parentheses beside that brand/category.
F23	Switching between different categories or brands must refresh the product list accordingly.
F24	Only one brand or category filter must be active at a time.
F25	After applying filters, clicking “All Products” must restore the full product list.
F26	Product filters must function consistently across browsers (Chrome, Edge, Firefox).
F27	Filtered product results must display correct names, prices, and images.

## Product Details Page

ID	Validation Description
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F28	The product Details page must display product name, image, price, category, availability, condition, and brand.
F29	The quantity input must accept only numeric values greater than zero.
F30	Clicking “Add to Cart” from Product Details must add the correct product and quantity to the cart.
F31	The availability field must display “In Stock” for available items and “Out of Stock” otherwise.
F32	The condition field must correctly display “New” or “Used” as defined for the product.
F33	The brand displayed must match the brand shown in the product list and sidebar.
F34	Clicking browser Back or “Products” link must return user to previous Products list with filters intact.
F35	When switching products using navigation, Product Details must update accordingly without reload errors.
F36	Page layout must remain consistent at all resolutions (100%, 75%, 50%).
F37	Star ratings (if enabled) must accurately display an average rating for the product.
F38	button (Add to Cart) must show hover/active effects to confirm interaction

## Review Section

ID	Validation Description
F39	The review form must display input fields for Name, Email, and Review message.
F40	

	<p>Reviewer Name field:</p> <ul style="list-style-type: none"> <li>• Cannot be blank</li> <li>• Must not contain special characters</li> <li>• Can contain letters and spaces only</li> <li>• Cannot start with a space</li> </ul>
F41	<p>Email field:</p> <ul style="list-style-type: none"> <li>• Cannot be blank</li> <li>• Must follow valid email format</li> </ul>
F42	<p>Review message:</p> <ul style="list-style-type: none"> <li>• Cannot be blank</li> <li>• Must contain at least 10 characters</li> </ul>
F43	Clicking Submit must display confirmation message (“Thank you for your review”) or equivalent success alert.
F44	Review form must prevent submission if any required field is missing or invalid.
F45	Review fields must clear automatically after successful submission.
F46	Submitting multiple reviews in a row must create new entries, not overwrite existing ones <b>(if review list visible)</b>

## Checkout & payment page

Validation ID	Validation Description	Expected Behavior
F47	Required Fields	Displays inline error for missing mandatory fields.
F48	Card Number	Accepts only 16 numeric digits; error for invalid input.
F49	Expiry Date	Rejects past or invalid dates.
F50	CVV	Accepts exactly 3 digits; non-numeric disallowed.

F51	Total Amount	Final total matches cart total + shipping.
F52	UI Compatibility	Valid layout across Chrome, Edge, and Firefox.

## Sign up Page

ID	Validation Description
F53	Validate that all required fields on the Signup page are filled before submission.
F54	Validate Name input format.
F55	Validate Email format on Signup.
F56	Check for duplicate Email registration.
F57	Validate Password strength(uppercase ,lowercase ,number ,symbol).
F58	Validate Confirm Password matches Password.
F59	Name, City, and State fields must contain letters only.
F60	numeric fields (Zip code, Mobile) must contain valid positive numbers.
F61	Dropdowns (Title, Country, DOB) must have a selected value.
F62	Validate Terms and Conditions checkbox (if available).
F63	Checkbox states (Newsletter, Offers) must be captured correctly.
F64	In valid input, form must submit and display “Account created successfully.
F65	On invalid input, appropriate inline error messages must display.

F66	Verify successful signup submission.
F67	Page layout must remain responsive and accessible.

## Login Page

F68	Validate empty Email or Password fields during Login.
F69	Email must follow valid format.
F70	password must be hidden during entry.
F71	Validate incorrect login credentials.
F72	valid credentials must redirect to Home/Dashboard.
F73	Validate Remember Me checkbox functionality.
F74	Validate Forgot Password link.
F75	Validate successful login.
F76	Validate Logout action.
F67	Validate that user cannot access restricted pages after logout.
F68	Validate Delete Account button visibility.
F69	Validate confirmation popup on Delete Account.
F70	Validate password confirmation during Delete Account.
F71	Validate successful account deletion.
F72	Validate data clearance after account deletion.
F73	Validate Contact Us form required fields.
F74	Validate Contact Us Name field.
F75	Validate Contact Us Email format.

F76	Validate Message field length.
F77	Validate successful Contact Us submission.
F78	Validate Contact Us error handling.
F79	Validate clearing of fields after successful submission.
F80	Validate responsive layout for all pages.
F81	Validate hover and active states for buttons.
F82	Validate redirection after successful actions.
F83	Validate error message display location.

## 5. Non-Functional Requirements

### Cart

ID	Category	Requirement
NFR1	Performance	Cart updates (add/remove/update) must execute under 3 seconds.
NFR2	Usability	UI must be simple, responsive, and intuitive.
NFR3	Security	Only authorized users can access saved cart data.
NFR4	Reliability	Cart data must not be lost after browser refresh or crash.
NFR5	Portability	Works across web and mobile versions.
NFR6	Maintainability	Code structure must support future scalability.
NFR7	Availability	Cart service should have 99% uptime.

NFR8	Compatibility	Must support all major browsers and screen sizes.
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## Navigation & static Pages

<b>NFR9</b>	Cross-browser compatibility: Pages render correctly on Chrome, Firefox, Edge, Safari.
<b>NFR10</b>	Performance: Each page loads within 3 seconds on a stable internet connection.
<b>NFR11</b>	Usability: Navigation between pages is clear and user-friendly.

