

Test Plan / QA Documentation: Online Apparels Shopping Website

1. Introduction and Objectives

This Test Plan outlines the strategy, scope, resources, and schedule for testing the Online Apparels Shopping Website. The primary goal is to verify that the developed system meets all specified **Functional Requirements (FRs)**, adheres to **Non-Functional Requirements (NFRs)**, and satisfies the overall **Business Requirements Document (BRD)** objectives<sup>1</sup>.

1.1 Testing Objectives

- **Verification:** Confirm that all Buyer (Frontend) and Admin (Backend) functions work as specified.
- **Validation:** Ensure the system is secure, performs efficiently under load, and is stable (NFRs).
- **Usability:** Validate that the system is intuitive for the target users (Buyers and Admin).
- **Compliance:** Verify adherence to project constraints (e.g., US-only orders, USD currency)<sup>3</sup>.

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2. Scope of Testing

2.1 In-Scope Components

| Component       | Functionality to be Tested  | BRD Reference    |
|-----------------|---|------------------|
| Frontend        | Registration, Login (Email/Social), Product Search/Listing, Product Details/Variations, Shopping Cart, Wishlist, Checkout, Online Payment (Stripe), Order Tracking, Ratings & Reviews, My Account/Address Book. | FR-001 to FR-013 |
| Backend (Admin) | Admin Login, Dashboard, Product/Category Management, Orders Management, Customer  | FR-014 to FR-026 |

| Component    | Functionality to be Tested   | BRD Reference                  |
|--------------|--|--------------------------------|
|              | Management, Shipping/Payment Management, CMS, Roles/Permissions, Reporting (Statistics). |                                |
| Integrations | Stripe Payment Gateway, Social Media Sharing, Email Verification/Notifications.          | FR-001, FR-002, FR-008, FR-009 |
| NFRs         | Security (SSL), Performance (Speed), Scalability (100 concurrent users) <sup>6</sup> .   | NFR-001 to NFR-004             |

## 2.2 Out-of-Scope Components

- Ordering customized products<sup>7</sup>.
- Real-time order tracking<sup>8</sup>.
- Cash on delivery (COD) option<sup>9</sup>.
- Training the employees regarding use of the system (a separate risk/issue)<sup>10</sup>.

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## 3. Testing Strategy and Phases

The testing process will follow a phased approach, utilizing different types of testing to ensure quality at various stages of development.

| Phase                    | Description   | Key Focus Areas  |
|--------------------------|---|--|
| Unit Testing (UT)        | Developers test individual code modules/components. | Core functions, API endpoints, data validation.          |
| Integration Testing (IT) | Testing the interaction between integrated modules. | Login via Google/Facebook, Add to Cart to Checkout flow, |

| Phase                                | Description   | Key Focus Areas  |
|--------------------------------------|---|--|
|                                      |   | Database communication, Stripe integration.  |
| <b>System Testing (ST)</b>           | Full system testing against all specified FRs.                          | End-to-end buyer journey (search → payment), Admin workflow (order fulfillment, catalog update). |
| <b>User Acceptance Testing (UAT)</b> | Business Owner/Stakeholders validate the system against business goals. | Verify product management and reporting features; confirm site aesthetics and usability.         |

### 3.1 Specific Test Types

| Test Type                  | Objective  | BRD/NFR Reference   |
|----------------------------|--|---|
| <b>Functional Testing</b>  | Validate all features work as described (e.g., login, payment, category management). | All FRs (FR-001 to FR-026)                                    |
| <b>Performance Testing</b> | Verify stability and response time under load.                                       | NFR-001 (Scalability: 100 concurrent users), NFR-002 (Speed). |
| <b>Security Testing</b>    | Validate data encryption, secure login, and payment handling.                        | NFR-004 (SSL Security), FR-014 (Admin Login).                 |
| <b>Usability Testing</b>   | Evaluate ease of use for product search, checkout, and Admin panel operations.       | FR-003, FR-008, FR-015.                                       |

| Test Type          | Objective  | BRD/NFR Reference   |
|--------------------|--|---|
| Regression Testing | Ensure new code changes/bug fixes do not break existing functionality. | All core flows (login, search, checkout, order tracking). |

## 4. Test Environment and Resources

### 4.1 Environment Setup

- **Development (DEV):** Used for UT and initial IT.
- **Staging/QA:** A near-production mirror environment used for ST, Performance, and Security Testing. This environment must be used for testing the timeline impact of enterprise platform updates<sup>12</sup>.
- **Production (PROD):** The live environment. Final smoke testing only.

### 4.2 Required Resources

| Role             | Responsibility   |
|------------------|--|
| Quality Lead     | Overall management, test plan creation, sign-off <sup>13</sup> .   |
| QA Engineers     | Test case design, execution, defect reporting, regression testing. |
| Development Team | Unit testing, defect resolution.                                   |
| Business Owner   | UAT sign-off <sup>14</sup> .                                       |

## 5. Exit Criteria

Testing is considered complete when the following criteria are met:

1. **Test Case Completion:** 100% of planned test cases have been executed.
2. **Pass Rate:**  $\geq 95\%$  of all priority 1 (Critical) and priority 2 (High) functional test cases pass<sup>15</sup>.
3. **Defect Density:** All Critical (P1) and High (P2) defects are fixed, closed, and verified<sup>16</sup>.
4. **NFR Compliance:** All Non-Functional Requirements (NFR-001 to NFR-004) are successfully met.
5. **UAT Sign-off:** Formal sign-off is received from the Business Owner/Project Sponsor<sup>17</sup>.

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## 6. Sample Test Cases (Priority 1 - Critical)

This section provides sample test cases focusing on core Critical requirements for both the Buyer and Admin roles.

### 6.1 Buyer Functionality

| Test ID   | Requirement    | Test Case Description   | Expected Result  | Priority        |
|-----------|----------------|---|--|-----------------|
| BUY-FR002 | Registration   | Verify successful registration and mandatory email verification.              | User cannot log in until the email verification link is clicked; upon verification, login is successful. | 1<br>(Critical) |
| BUY-FR003 | Product Search | Search for a product using a keyword (e.g., "Jeans") and apply a size filter. | Correct listing of jeans appears, accurately filtered by size, without requiring user login.             | 1<br>(Critical) |

| Test ID          | Requirement        | Test Case Description  | Expected Result  | Priority        |
|------------------|--------------------|--|--|-----------------|
| <b>BUY-FR008</b> | Checkout & Payment | Execute a full checkout process, successfully submitting payment via Stripe integration. | Order confirmed, payment successful, order total correctly calculated (including shipping/tax), and buyer receives email notification. | 1<br>(Critical) |

## 6.2 Admin Functionality

| Test ID          | Requirement         | Test Case Description  | Expected Result   | Priority        |
|------------------|---------------------|--|---|-----------------|
| <b>ADM-FR017</b> | Orders Management   | Change a confirmed order status to 'Shipped' and enter Tracking ID.                          | Status updates successfully; buyer is notified via email; shipping details (Tracking ID, Carrier) are visible in the order details.   | 1<br>(Critical) |
| <b>ADM-FR019</b> | Products Management | Create a new product with two variations (Red/Size M; Blue/Size L) and assign to a category. | Product successfully saved; variations are visible on the frontend product details page; the product appears in the category listing. | 1<br>(Critical) |
| <b>ADM-FR015</b> | Dashboard           | Verify dashboard metrics upon login.   | Dashboard displays accurate counts for Total registered buyers  | 1<br>(Critical) |

| Test ID | Requirement | Test Case Description | Expected Result                          | Priority |
|---------|-------------|-----------------------|--|----------|
|         |             |                       | and current Total Revenue (Today/Month). |          |