3. Requirements

This section defines the complete set of requirements for the product-based software system for a clothing and footwear brand. These requirements are categorized into two main parts:

Functional Requirements: These describe what the system should do - the core functionalities that fulfill user and business needs.

Non-Functional Requirements: These define the quality standards the system must meet, such as performance, security, usability, and maintainability.

This section serves as a blueprint for the development team, quality assurance team, and stakeholders, ensuring that all expectations are clearly defined and can be validated through testing.

3.1 Functional Requirements

FR-1: User Registration and Login

As a new user,

I want to register and securely log in to the system,

So that I can access my personal account, view orders, and manage my preferences.

Confirmation: System must allow unique email-based registration, hashed password storage, and session-based login.

FR-2: Product Browsing and Search

As a shopper,

I want to browse clothing and footwear products by category, size, color, and brand,

So that I can easily find the items I'm interested in.

Confirmation: Product catalog must support keyword-based search.

FR-3: Product Details View

As a customer,

I want to view detailed information about a product,

So that I can understand its features, materials, availability, and customer reviews.

Confirmation: Each product page must include images, size guide, stock status, price, and reviews.

FR-4: Add to Cart and Wishlist

As a logged-in user,

I want to add products to my cart or wishlist,

So that I can purchase them later or keep track of my interests.

Confirmation: System must persist cart and wishlist data even after user logout (for logged-in users).

FR-5: Online Checkout and Payment

As a user with items in my cart,

I want to proceed to checkout, enter shipping details, and make a payment,

So that I can complete my purchase securely.

Confirmation: Payment must be securely processed via third-party gateways (e.g., SSL secured Stripe or bKash).

FR-6: Order Tracking

As a customer,

I want to track the status of my orders,

So that I know when to expect delivery.

Confirmation: System should update status in real-time (e.g., processing, shipped, delivered).

FR-7: Admin Product Management

As an admin,

I want to add, update, or remove products from the catalog,

So that I can keep the product inventory up to date.

FR-8: Feedback and Review System

As a buyer,

I want to leave a review after purchasing a product,

So that others can benefit from my experience.

Confirmation: Review form becomes available only after order delivery confirmation.

3.2 Non-Functional Requirements

Performance: The system shall support up to 5,000 concurrent users with a maximum page load time under 2 seconds.

Scalability:

The architecture must allow horizontal and vertical scaling to accommodate growth in user base and product data.

Security:

User passwords shall be stored using strong hashing algorithm.

Admin actions such as product edits, deletions, or refunds shall require verification or double-confirmation to prevent accidental changes.

Login attempts shall be rate-limited and monitored for brute-force attack prevention.

Logout and session timeout shall be enforced after a defined inactivity period.

Session management must include timeout and re-authentication policies.

Maintainability: The codebase should follow clean architecture principles with modular design, allowing easy updates and debugging.

Usability:

The interface shall be user-friendly and intuitive.

Responsive design must ensure smooth use on mobile, tablet, and desktop devices.

Localization: The system shall support at least English and if possible (Bengali) language options for

a wider reach.

Compliance: The software shall comply with data privacy regulations such as GDPR, and local consumer protection laws, especially if expanded to international markets.