**Requirements Gathering**

### **1. Introduction**

Requirements gathering is a fundamental phase in software development and testing, aimed at identifying, documenting, and analyzing both functional and non-functional requirements of a system. A well-defined set of requirements ensures that the software meets business needs, enhances user satisfaction, and aligns with industry standards. This document outlines the key stakeholders, user stories, functional and non-functional requirements necessary for the testing and validation of an online shopping platform.

### **2. Stakeholder Analysis**

Understanding stakeholder needs is crucial for ensuring that the e-commerce platform functions effectively and meets expectations. Below are the key stakeholders involved:

* **End Users (Customers):** Expect a seamless, secure, and efficient shopping experience with quick navigation, accurate search results, and multiple payment options.
* **Business Owners & Management:** Require a stable, high-performing website that maximizes sales, maintains customer trust, and ensures smooth order fulfillment.
* **Developers & Engineers:** Need clear and well-documented requirements to build, troubleshoot, and optimize platform features efficiently.
* **QA & Test Engineers:** Responsible for verifying that all functionalities work correctly, performing regression tests, and identifying defects before deployment.
* **Security Teams:** Ensure compliance with cybersecurity standards, protect sensitive user data, and prevent fraud.
* **Marketing & Customer Support Teams:** Require analytics for customer behavior insights and tools for handling inquiries and complaints efficiently.

### **3. User Stories & Use Cases**

User stories define the expected interactions between users and the system. Below are critical user stories that guide the test planning process:

#### **User Authentication & Account Management**

* As a user, I want to create an account so that I can access personalized services.
* As a returning customer, I want to log in securely using my credentials to manage my account.
* As a user, I want to reset my password if I forget it to regain access to my account.

#### **Product Browsing & Search Functionality**

* As a customer, I want to search for products using various filters (category, price range, brand, ratings) to find relevant items quickly.
* As a user, I want to view detailed product descriptions, images, and customer reviews before making a purchase.

#### **Shopping Cart & Checkout Process**

* As a shopper, I want to add, update, or remove items from my cart to modify my purchase selection.
* As a buyer, I want to securely enter my shipping and payment details to complete my order.
* As a customer, I want to receive an order confirmation email with details after making a purchase.

#### **Order Tracking & Post-Purchase Management**

* As a user, I want to track my order in real-time to know the expected delivery date.
* As a customer, I want to request returns and refunds if the product does not meet my expectations.
* As a user, I want to leave feedback and ratings for my purchased products.

### **4. Functional Requirements**

Functional requirements specify the core functionalities that the system must support. The key functional requirements for an online shopping website include:

#### **User Authentication & Account Features**

* Secure login and registration with password encryption.
* Multi-factor authentication for enhanced security.
* Ability to update personal details, saved addresses, and payment methods.

#### **Product Search, Catalog, and Filtering**

* Search functionality with predictive suggestions and autocomplete.
* Advanced filters for refining product search based on attributes like category, price, brand, and reviews.
* Display of related products and personalized recommendations.

#### **Shopping Cart & Checkout Process**

* Add, remove, and update items in the shopping cart.
* Multiple payment gateway integrations (credit/debit cards, digital wallets, COD, etc.).
* Automated calculation of shipping charges and applicable taxes.

#### **Order & Inventory Management**

* Real-time inventory updates to prevent overselling.
* Email notifications for order confirmation, shipping updates, and payment success.
* Ability to cancel or modify an order before shipment.

#### **Security & Compliance Features**

* Implementation of HTTPS for secure transactions.
* Compliance with PCI-DSS for payment security.
* Encryption of customer-sensitive information.

### **5. Non-Functional Requirements**

Non-functional requirements define the system’s attributes such as performance, security, usability, and availability. These include:

#### **Performance & Scalability**

* The website should load within **3 seconds** under standard network conditions.
* The system should handle at least **10,000 concurrent users** without performance degradation.
* Response time for API calls should be less than **200 milliseconds**.

#### **Security & Data Protection**

* Implementation of SSL/TLS encryption for secure communication.
* Protection against SQL injection, cross-site scripting (XSS), and other common vulnerabilities.
* Secure storage of user credentials using hashed and salted encryption.

#### **Usability & Accessibility**

* The platform should adhere to **WCAG 2.1** accessibility guidelines to support users with disabilities.
* The user interface should be intuitive and support multiple languages and currencies.
* Mobile responsiveness to ensure seamless functionality across different screen sizes and devices.

#### **Availability & Reliability**

* The system should maintain **99.9% uptime** to ensure uninterrupted service availability.
* Automated failover mechanisms should be in place to handle unexpected downtime.
* A disaster recovery plan must be implemented to restore services within **30 minutes** in case of system failure.

### **6. Conclusion**

A comprehensive requirements gathering phase is essential for ensuring that all system functionalities and performance expectations align with business goals. By clearly defining functional and non-functional requirements, stakeholders can effectively develop, test, and optimize an e-commerce platform that is robust, secure, and user-friendly. This structured approach will enhance user satisfaction, minimize defects, and support the platform’s scalability in a competitive digital marketplace.