Shopping Cart Technical Specification Document

1 Overview

1.1 Business Requirements

The Shopping Cart Application aims to provide an enhanced online shopping experience for customers. The key business requirements include:

- Enable users to browse and search for products.
- Allow users to add, remove, and modify items in their shopping cart.
- Facilitate secure and seamless checkout processes.
- Ensure compatibility with various devices and browsers.
- Support multiple languages for a global customer base.
- Generate daily sales reports for business analysis.

1.2 Assumptions and Dependencies

1.2.1 Assumptions

During the development of the Shopping Cart Application, the following assumptions have been made:

- Assumption 1: The application will be hosted on a secure and reliable server infrastructure.
- Assumption 2: Users will have access to stable internet connections.
- Assumption 3: Payment gateway integration will be available through third-party APIs.
- Assumption 4: Compliance with data privacy regulations will be ensured.

1.2.2 Dependencies

The successful implementation of the Shopping Cart Application depends on the following external dependencies:

- Dependency 1: Integration with Payment Gateway API for processing payments securely.
- Dependency 2: Availability of a reliable web hosting service to ensure uptime and performance.
- Dependency 3: Third-party libraries for multilingual support and responsive design.
- Dependency 4: Compliance with industry standards and regulations governing e-commerce platforms.

1.3 Exclusions

The following functionalities and features are explicitly excluded from the scope of the Shopping Cart Application:

- Integration with third-party loyalty programs.
- Social media sharing features.
- Integration with external inventory management systems.
- Support for cryptocurrency payments.
- Offline shopping capabilities.

1.4 References

The development of the Shopping Cart Application refers to the following documents and resources:

- Shopping Cart Application Business Requirements Document (BRD)
- Payment Gateway API documentation (Version 2.0)
- Web Hosting Service Agreement (Vendor: XYZ Hosting)
- Multilingual Support Library (Version 1.2)
- Data Privacy and Security Compliance Guidelines (Industry Standards)

1.5 Summary of Changes

Summary of changes made to the BRD since the initial version:

- Revision 1.1: Added support for multiple languages based on stakeholder feedback.
- Revision 1.2: Included an exclusion section specifying out-of-scope features.
- Revision 1.3: Updated references to the Payment Gateway API documentation.
- Revision 1.4: Clarified assumptions related to hosting and data privacy compliance.

2 Functionality Changes

The following functionality changes will be implemented in the Shopping Cart Application:

- Enhancement 1: Improved product search functionality with advanced filtering options.
- Enhancement 2: Real-time inventory tracking to prevent out-of-stock items.
- Enhancement 3: Guest checkout option for users without accounts.
- Enhancement 4: Integration with a customer review and rating system.
- Enhancement 5: Support for coupon code and discount functionality.

3 Database Changes

3.1 Schema Table Changes

The following changes will be made to the database schema:

- Added new tables: `product_reviews`, `order_history`.
- Modified existing tables: `user_accounts`, `product_inventory`.
- Removed table: `customer_wishlists`.

3.2 System Supplied Data Changes

Changes to system-supplied data:

- Updated default currency settings to support international transactions.
- Added sample product data for initial database population.
- Enhanced error message handling for payment processing.

3.3 Security Data Changes

Security-related data changes:

- Introduced role-based access control (RBAC) for user accounts.
- Implemented encryption for sensitive user data, such as passwords and payment information.
- Enforced stricter validation rules for user-generated content (e.g., reviews).

4 Implementation

4.1 Pre-Implementation

Prior to implementation, the following tasks will be completed:

- Acquire necessary development and testing environments.

- Perform a security assessment and vulnerability scan.
- Review and finalize the technology stack and frameworks.

4.2 Post-Implementation

4.2.1 Initial Setup

Following implementation, the initial setup tasks will include:

- Deploying the application to the production server.
- Configuring payment gateway integration.
- Running database migration scripts to apply schema changes.

4.2.2 Monitoring

Ongoing monitoring activities will involve:

- Implementing logging and error tracking mechanisms.
- Setting up automated alerts for critical issues.
- Regularly reviewing system logs and performance metrics.

4.2.3 Archiving

Data archiving procedures will be established to:

- Archive order history records older than two years.
- Ensure compliance with data retention policies.
- Maintain data integrity during archiving.

5 Testing

The testing phase will encompass unit testing, integration testing, and user acceptance testing. Test cases will be documented to cover all functionalities and edge cases, ensuring the application meets specified requirements and maintains data integrity and security.

6 Appendix

6.1 Sample XML expected output

[Include a sample XML document illustrating the expected output format for specific functionalities or data exchanges if applicable.]

Please replace the sample content with the actual details and changes relevant to your specific project.