**Resonance Documentation**

**Software Purpose**

Resonance is an e-commerce platform designed for headphone and earphone enthusiasts, providing a personalized shopping experience. It allows users to explore a wide variety of audio products, compare specifications, read expert reviews, and make informed purchases. The system aims to streamline the buying process, recommend suitable products, and enhance user satisfaction by ensuring seamless browsing and checkout.

**Software Scope**

**Inclusions:**

* **Customer Interface**: For browsing products, viewing product details, and making purchases.
* **Product Recommendation Engine**: Suggests products based on user preferences and search history.
* **Cart and Checkout System**: Manages cart items and guides users through a secure checkout process.
* **Admin Panel**: For managing product listings, stock, orders, and customer queries.

**Exclusions:**

* Direct management of physical inventory (integrated with external warehouse systems).
* Payment processing (requires integration with external payment gateways).

**Stakeholders:**

* **Customers**: Audio product buyers.
* **Store Staff**: Managing inventory, orders, and customer support.
* **Development Team**: Building and maintaining the system.
* **Business Owner**: Overseeing business growth and system improvements.

**Software Requirements**

**Functional Requirements:**

**Customers:**

* Browse and search for products based on categories, brands, and specifications.
* View detailed product descriptions, reviews, and multimedia (images and videos).
* Add products to the cart and proceed to check out.
* Receive product recommendations.
* Track orders and view order history.

**Store Staff:**

* Manage product listings (add, update, or remove products).
* Monitor and update stock levels.
* Access order details and process orders.
* Provide support through customer queries.
* View sales reports and analytics.

**Non-Functional Requirements:**

**Performance:**

* The system should handle 500 concurrent users.
* Product pages should be loaded in under 3 seconds.
* Recommendations should generate within 2 seconds of page load.

**Availability:**

* Ensure 99.9% uptime.
* Orders should be retried if payment or network interruptions occur.

**Usability:**

* Mobile-first, responsive design.
* Simple and intuitive interface for smooth navigation.
* Personalized search and filter options.

**Security:**

* Secure user authentication and authorization.
* Protection of payment and personal details.

**Scalability:**

* The system should support a growing product catalog and user base without degradation in performance.

**System Overview**

**Product Catalog:**

* Organized by categories: Over-ear, In-ear, Wireless, Noise-canceling, etc.
* Features detailed descriptions, images, user reviews, and ratings.

**Search and Recommendation:**

* Full-text search engine with autocomplete.
* Personalized suggestions using machine learning.

**Cart and Checkout:**

* Multi-step checkout with address management and payment options.
* Integration with trusted payment gateways for secure transactions.

**Order Management:**

* Real-time tracking with email and SMS notifications.
* Return and refund management.

**Admin Panel:**

* Dashboard displaying real-time sales, order statuses, and product performance.
* Management of user queries and feedback.

This documentation outlines the features and technical specifications necessary for developing the Resonance e-commerce system, ensuring optimal experience for both users and store managers.