**Synopsis On Vintronics: Retro Product E-commerce Platform**

**Introduction:**

Vintronics is an innovative e-commerce platform designed to cater to enthusiasts of retro products, including vintage electronics, classic video games, and antique gadgets. This project aims to create a seamless, secure, and scalable online marketplace utilizing modern technologies like Spring Boot, Java, JavaScript, CSS, HTML, and MySQL.

**Objectives:**

* Develop an intuitive and user-friendly interface for buyers and sellers.
* Implement a robust backend using Spring Boot for efficient data management.
* Ensure secure transactions through user authentication and payment gateway integration.
* Provide a scalable and high-performance system architecture.
* Deliver a responsive design compatible with multiple devices.

**Technology Stack:**

* **Backend:** Spring Boot, Java
* **Frontend:** HTML, CSS, JavaScript
* **Database:** MySQL
* **Security:** JWT Authentication, Role-based Access Control
* **Payment Integration:** Stripe, PayPal

**System Architecture:**

The system follows the Model-View-Controller (MVC) architecture, ensuring a structured and maintainable codebase. It comprises:

* **User Management:** Registration, login, role-based authentication
* **Product Management:** Listing, categorization, and search functionalities
* **Order Processing:** Cart management, order history, and payment integration
* **Admin Dashboard:** User and category management, order tracking
* **Seller Dashboard:** Product management, order details

**Database Design:**

The relational database (MySQL) includes tables such as:

* Users (id, name, email, password, role)
* Products (id, name, price, category, description, stock, status)
* Category (id, name, price, category, description, stock, status)
* Orders (id, user\_id, product\_id, status, payment\_details)
* Payments (id, order\_id, transaction\_id, status)
* Widgets (id, name, status, sequence no)
* Seller (id, address, commission percentage, GST no, bank account number, email, IFSC code, name, phone no, status, store name, store address)
* Seller Payment (id, payment id, amount, payment method, status, transaction reference , order id)
* Review (id, rating, user id, product id, review text)
* Wishlist (id, status, product id , user id)

**Features and Functionality:**

* **User Authentication:** Secure login with JWT-based authentication
* **Product Listings:** Filter and search options for users
* **Shopping Cart & Checkout:** Add to cart, apply discount codes, and secure checkout
* **Order Management:** Track order status and history
* **Admin Dashboard:** Manage users, categories, and transactions
* **Seller Dashboard:** Manage orders, products, and payment

**Security Measures:**

* Password encryption with BCrypt
* HTTPS for secure data transmission
* Role-based access control to restrict unauthorized actions
* CSRF and SQL injection prevention techniques

**Future Enhancement:**

* AI-based product recommendations
* Chatbot for customer support
* Mobile app integration for better accessibility

**Conclusion:**

Vintronics- Retro Products E-Commerce site aims to bridge the gap between retro product enthusiasts and a seamless online shopping experience. With its secure, scalable, and feature-rich architecture, it has the potential to become a leading platform in the niche e-commerce market.