**Software Requirements Specification (SRS) for Electronic Shop Mobile App**

**1. Introduction**

**1.1 Purpose**

The purpose of this document is to outline the requirements for the development of an electronic shop mobile application. This app will interact with the "ElectronicMPSTME" database, which includes tables for Products, Managers, Customers, Orders, OrderItems, Reviews, ManagerCredentials, and CustomerCredentials.

**1.2 Scope**

The electronic shop mobile app will leverage the capabilities of the "ElectronicMPSTME" database to provide a user-friendly platform for customers to browse, select, and purchase electronic products. It will also facilitate product reviews, order management, and authentication for both customers and managers.

**1.3 Definitions, Acronyms, and Abbreviations**

To ensure clarity and understanding throughout this document, the following definitions, acronyms, and abbreviations will be used:

* **SRS:** Software Requirements Specification
* **API:** Application Programming Interface
* **UI:** User Interface

**1.4 References**

The main reference for this document is the "ElectronicMPSTME" database schema, which defines the data structure and relationships used by the mobile app.

**2. Overall Description**

The mobile app interacts with the "Products" table to display a rich catalogue of electronic products. It also interfaces with the "Customers" table for user account management and authentication.

The app offers several key features, including:

- Product Catalogue: Accesses product information from the "Products" table, displaying product details and images.

- User Accounts: Interfaces with the "Customers" table for user registration, login, and account management.

- Order Management: Connects to the "Orders" and "OrderItems" tables to enable users to place and track orders.

- Product Reviews: Allows customers to submit reviews and ratings for products, which are stored in the "Reviews" table.

The app serves two main user classes:

- Customers: Users who browse, shop for products, manage their accounts, and submit product reviews.

- Managers: Users responsible for overseeing the electronic shop, potentially managing product listings, and processing orders.

**3. Specific Requirements**

**3.1 Functional Requirements**

**3.1.1 User Registration and Login**

- Users can register for an account using their email and password.

- Registered users can log in to their accounts.

**3.1.2 Browse and Search Products**

- Users can browse a catalog of electronic products.

- Users can search for products based on keywords and filters.

**3.1.3 Product Details**

- Users can view detailed information about a product, including name, description, category, price, and image.

**3.1.4 Shopping Cart**

- Users can add products to their shopping cart.

- Users can review and modify the contents of their shopping cart.

**3.1.5 Order Placement**

- Users can place orders for products in their shopping cart.

- Users provide shipping information during order placement.

**3.1.6 Order Tracking**

- Users can track the status of their orders.

- Order status is updated in real-time.

**3.1.7 Product Reviews**

- Users can submit reviews and ratings for products.

- Reviews and ratings are displayed to other users.

**3.2 Usability Requirements**

**3.2.1 User Interface Design**

- The app's user interface is intuitive and user-friendly.

**3.3 Load Handling**

- The app can handle concurrent user sessions without performance degradation.

**3.4 Security Requirements**

**3.4.1 Authentication**

- User authentication is required for all actions that modify user data.

**3.4.2 Authorization**

- Users can only access and modify their own data.

- Managers have access to administrative functions.

**3.5 Supportability Requirements**

**3.5.1 Error Handling**

- Users are provided with error messages for failed actions.

**3.5.2 Upgrades and Maintenance**

- The app can be updated with new features and bug fixes.

**4.1 Database Design**

**4.1.1 Products Table**

- Stores product information, including name, description, category, price, stock quantity, and product image.

**4.1.2 Managers Table**

- Contains manager information, including first name, last name, email, and phone.

**4.1.3 Customers Table**

- Stores customer profiles, including first name, last name, email, phone, and address.

**4.1.4 Orders Table**

- Records order details, including user ID, order date, total amount, and order status.

**4.1.5 OrderItems Table**

- Associates products with orders, including product ID and quantity.

**4.1.6 Reviews Table**

- Contains product reviews, including product ID, customer ID, rating, review text, and review date.

**4.1.7 ManagerCredentials Table**

- Stores manager login credentials, including manager username and password.

**4.1.8 CustomerCredentials Table**

- Contains customer login credentials, including customer username and password.

**4.2 Data Integrity Requirements**

**4.2.1 Primary Keys**

- Each table has a primary key to ensure data uniqueness.

**4.2.2 Foreign Key Constraints**

- Foreign key constraints are enforced to maintain data integrity.

**4.2.3 Indexing**

- Appropriate indexing is applied to enhance data retrieval performance.

**4.3 Data Access Requirements**

**4.3.1 CRUD Operations**

- The app can perform Create, Read, Update, and Delete operations on data.

**4.3.2 Data Retrieval**

- Data retrieval queries are optimized for efficient access.

**4.4 Security and Privacy**

**4.4.1 Access Control**

- Role-based access control is implemented to restrict data access.