# SuperMarket Management Application Requirements Analysis

## 1. Project Overview

The SuperMarket Management Application is a Windows-based desktop application developed using C# and the .NET Framework. This system provides supermarkets with efficient inventory, product, sales, and user management capabilities. Featuring role-based access, admins and sellers can securely manage operations with dedicated functions for sales tracking, inventory control, and billing.

## 2. Functional Requirements

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| Requirement Area | Details |
| User Management | - Admin: Secure login, ability to create new admin accounts, manage categories, seller information, and sales records. - Seller: Secure login with limited access to sales transactions and product information. CRUD operations on sales. |
| Product Management | - Product List Table: Manages product details (price, availability, category). - Supports CRUD operations to modify or remove products, ensuring an up-to-date catalog. |
| Category Management | - Category Page: CRUD operations for product categories to organize inventory. |
| Sales and Billing | - Selling Page: Allows adding items to cart, and managing sales transactions. - Billing: Generates bill with calculated totals, taxes, and discounts as applicable. Print/save functionality. |

## 3. Non-Functional Requirements

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| Category | Requirement |
| Usability | Simple, user-friendly interface for both roles. |
| Security | Data security with SQL/MySQL database. Role-based access control for secure operations. |
| Performance | Responsive CRUD operations. Efficient data handling to minimize load times for pages. |
| Scalability | Database designed to support large product catalogs and transaction volumes. |

## 4. System Architecture

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| Component | Description |
| Frontend | Windows Forms GUI for intuitive interactions. |
| Backend | C# with .NET Framework handling core logic. |
| Database | Microsoft SQL and MySQL for managing data storage and access. |

### \*\*Database Design\*\*

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| --- | --- |
| Table Name | Description |
| User Table | Stores user credentials for admins and sellers. |
| Product Table | Contains product details such as price, stock, category. |
| Category Table | Holds product categories for inventory management. |
| Sales Table | Logs transactions with product, quantity, and billing info. |

## 5. Implementation Plan

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| Phase | Tasks |
| Initial Setup | Define project structure and database schemas. |
| Login and Authentication | Develop and test login forms integrated with SQL for secure access. |
| Product & Category Management | Create and connect product/category pages with full CRUD functionality. |
| Sales and Billing Pages | Implement cart functionality and bill generation. |
| Testing & Optimization | Comprehensive tests for usability, security, and efficiency. |
| Final Deployment | Deploy application, train users as needed. |

## 6. Future Scope

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| --- | --- |
| Feature | Description |
| Advanced Inventory | Low-stock alerts, supplier management, automated reordering. |
| Enhanced Reporting | Sales reports, product performance metrics, trend analysis. |
| Multi-Platform | Explore mobile and web versions for broader accessibility. |