**Online Furniture Shop**

The Online Furniture Shop project is a web-based application that allows users to browse, search, and purchase furniture items. The application provides an intuitive and user-friendly interface for customers to explore a wide range of furniture products and manage their orders. Additionally, it includes an administrative panel for managing products, orders, and users.

**Objectives**

The main objectives of the Online Furniture Shop project are:

1. To develop a functional and efficient online platform for selling furniture.
2. To implement a user-friendly interface for customers and administrators.
3. To ensure secure and smooth user authentication and authorization.
4. To facilitate easy management of products, orders, and users through an admin panel.
5. To provide a seamless shopping experience with features like a shopping cart and order history.

**Scope**

The project includes following features:

User Features:

1. User Registration and Login: Users can register with a unique username and password and securely log in to their accounts.
2. Product Browsing and Search: Users can browse through a catalog of furniture items and search for specific products.
3. Product Details: Users can view detailed information about each product, including images, detailed descriptions, and prices.
4. Shopping Cart: Users can add products to a shopping cart and manage the items in their cart.
5. Order Placement: Users can place orders and receive order confirmations.
6. Order History: Users can view their past orders and order details.

Admin Features:

1. Admin Login: Admins can securely log in to access the admin panel.
2. Product Management: Admins can add, edit, and delete products, including uploading images and setting prices and descriptions.
3. Order Management: Admins can view and manage all customer orders.
4. User Management: Admins can view and manage user accounts.
5. Sales Reports: Admins can view sales reports and analytics.

Functional Requirements

The System MUST Do:

Non-Functional Requirements

The System Should Do:

* System should be available 24/7
* Compatible with Computer and mobile Screen.

1. **Project Planning**

* Define the scope of the project.
* Create a detailed requirements document.
* Design the architecture of the application.

**2. Technology Stack:**

Backend:

* Java: Programming language.
* Spring Boot: Framework for building the application.
* Spring MVC: For building web applications.
* Spring Security: For authentication and authorization.
* Spring Validation:
* Lombook:
* Spring Data JPA: For database interactions.

Frontend:

* Thymeleaf: Modern server-side Java template engine for both web and standalone environments.
* HTML/CSS/JavaScript: Core technologies for web development.

Database:

* PostgreSQL: Relational database management system.
* H2: For testing environment

Build Tool:

* Maven: Dependency management and build automation tool.

Version Control:

* Git: Version control system for tracking changes and collaborating.

**Functional Requirements:**

User Registration and Authentication

Product Management (CRUD operations for furniture items)

Shopping Cart functionality

Order Management

User Roles (Admin and Customers)

Product Search and Filter

**Non-Functional Requirements:**

Security (Encryption, secure authentication)

Performance (Efficient querying and data handling)

Scalability (Designing with future growth in mind)

Usability (Intuitive user interface)