#DRAFT UPDATED WEEKLY#

Furniture Management System Requirements Specification

Team 14

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# Project Overview

Given the various challenges that joineries of furniture face in managing multiple tasks daily, the need for an efficient management system has become essential. The Furniture Management System (FMS) is designed to manage operations both within and outside the furniture store, ensuring smooth handling of different tasks. This system aims to provide a versatile and user-friendly platform that enables employees to efficiently manage their work at any time.

The platform will be developed to integrate all essential requirements, bringing them together into a practical and reliable system for tracking stopovers, purchases, payment history, and order plans in an organized and efficient manner.

To ensure the system's continuous improvement, it is crucial to establish a strong communication link between administrators, user needs, and system design.

The FMS software will significantly simplify work processes, addressing key areas such as production, finance, human resources, and sales, while also resolving operational challenges effectively.

# Product Description

X Furniture Joinery is a diverse manufacturing company that operates through multiple departments and follows a range of business processes to ensure success. To enhance efficiency and improve its overall performance, we propose the development of a specialized software solution.

The Furniture Management System (FMS) will serve as a platform for collecting, processing, and analyzing all operational activities. This system will be highly beneficial to the company, as it will aid in managing assets, optimizing investments in personnel, materials, suppliers, and overseeing essential business operations.

The software will provide users with decision-making support, improving workflow efficiency and minimizing time-consuming tasks. It will store and manage critical data related to suppliers, employees, products, sales, invoices, salaries, customers, reports, and the production process.

User levels

**1. Administrator**

* Has the ability to create and manage new user accounts.
* Controls user login credentials and authentication.
* Assigns appropriate access levels to users.
* Has unrestricted access to all system functionalities.

**2. Chief Financial Officer (CFO)**

* Responsible for registering new products in the system.
* Can add and categorize brands under specific product types.
* Manages supplier registrations and their details.
* Generates financial reports on a monthly basis.

**3. Human Resources Specialist**

* Handles the onboarding of new employees.
* Manages employee records and updates staff details.
* Oversees payroll processing and salary management.
* Conducts job performance evaluations.

**4. Sales Agent**

* Registers new customers into the system.
* Maintains a database of customer details.
* Records and tracks sales transactions.
* Generates reports related to sales performance.

**5. Operations Manager**

* Adds and monitors raw materials in the system.
* Tracks labor costs associated with production.
* Manages overhead expenses in the manufacturing process.
* Registers and maintains records of machinery.
* Documents work instructions for production processes.
* Oversees and tracks progress in the manufacturing workflow.

1. **Requirements**
   1. ***Functional Requirements***

Priority Definitions

* Priority 1 – The requirement is a “must have” as outlined by policy/law
* Priority 2 – The requirement is needed for improved processing, and the fulfillment of the requirement will create immediate benefits
* Priority 3 – The requirement is a “nice to have” which may include new functionality

The requirement numbering follows the scheme - FR\_ ##

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Nr ## | Requirement | Further\_comment | Priority | Date |
| FR\_01 | The system should provide a web-based application that enables efficient management and operational functionality. | The system will be utilized by five key roles: Administrator, CFO, HR, Sales Manager, and Operations Manager.  Each of these users will have specific access rights and responsibilities within the system. | 1 | 8/03/2025 |
| FR\_02 | The administrator will have the ability to manage user access and permissions within the system. | He/She will provide them with login information. | 1 | 8/03/2025 |
| FR\_03 | The administrator will update and manage user details within the system. | Whenever an employee leaves, changes roles, or requires updated information, the administrator will be responsible for modifying their records accordingly. | 1 | 8/03/2025 |
| FR\_04 | The administrator will have the ability to generate detailed reports that provide insights into the company’s operations | Reports will include financial summaries, employee performance, sales statistics, and operational efficiency. | 1 | 8/03/2025 |
| FR\_05 | The administrator will be able to generate analytical graphs based on company data. | This feature helps management quickly interpret data and make informed decisions. | 2 | 8/03/2025 |
| FR\_06 | CFO will generate in PDF format and print weekly/monthly reports. | These reports will include revenue analysis, expense tracking, profit and loss statements, and financial forecasting.  They will help the management team assess financial health and make strategic decisions. | 1 | 8/03/2025 |
| FR\_07 | CFO will register every expense in the company | Each transaction related to raw materials, utilities, salaries, and operational costs will be logged into the system.  This ensures transparency in financial records and assists in budgeting. | 1 | 8/03/2025 |
| FR\_08 | The CFO will log every sale transaction made within the company. | Each time a product is sold, the system will record details such as product name, quantity, customer information, and payment method. | 1 | 8/03/2025 |
| FR\_09 | The CFO will be responsible for registering products before they are available for sale. | Each product must be registered with its associated details such as price, brand, category, and supplier information | 1 | 8/03/2025 |
| FR\_10 | The CFO will have the ability to add and categorize brands for the registered products. | To organize inventory effectively, every product will be assigned to a specific brand. | 2 | 8/03/2025 |
| FR\_11 | CFO will calculate salaries and pass to HR. | CFO will calculate and then will pass to HR. | 1 | 8/03/2025 |
| FR\_12 | CFO will add suppliers. | Supply chain is very important for this company so there will be lots of information including prices during the times. | 2 | 8/03/2025 |
| FR\_13 | CFO will view raw materials. | The system will provide the CFO with access to real-time data on raw material stock levels.  This includes quantities available, supplier details, purchase history, and cost tracking. | 2 | 8/03/2025 |
| FR\_14 | HR will have the ability to add, update, and remove employees from the system. | HR personnel will maintain accurate records of all employees, including their roles, departments, and salary details. | 1 | 8/03/2025 |
| FR\_15 | HR will be responsible for managing payroll and processing salaries for employees. | Payroll management will include salary calculations, deductions, and bonus allocations. | 1 | 8/03/2025 |
| FR\_16 | HR will track employee attendance, working hours, and overtime. | This data will be used for payroll processing and performance evaluation. | 2 | 8/03/2025 |
| FR\_17 | Employee award | Each month, the system will evaluate employee performance and automatically identify the top-performing employee for recognition. | 3 | 8/03/2025 |
| FR\_18 | HR will process employee leave requests and approve them accordingly. | Employees can request leave through the system, and HR will be responsible for approvals and tracking. | 1 | 8/03/2025 |
| FR\_19 | Sales agent will add and print orders. | Every sale made by the sales agent will be recorded in the system.  The system will allow sales agents to generate and print order receipts for customers. | 1 | 8/03/2025 |
| FR\_20 | Sales agent will see reports. | This feature helps the sales team analyze performance and adjust sales strategies. | 2 | 8/03/2025 |
| FR\_21 | Sales person will register customers. | Every new customer must be added to the system along with their personal information.  This ensures that customer records are maintained and can be used for future interactions | 1 | 8/03/2025 |
| FR\_22 | Sales person will edit and view customers. | Sales agents will have the ability to modify customer details if necessary.  This includes updating contact information, address, and purchase preferences. | 1 | 8/03/2025 |
| FR\_23 | Sales agents will be able to filter and search customer data efficiently. | The system will include a search and filter functionality for customer profiles.  Sales agents can quickly locate customers based on name, phone number, or purchase history. | 3 | 8/03/2025 |
| FR\_24 | Operations manager will add raw materials. | All materials used in the manufacturing process, such as wood, textiles, and metal, will be registered in the system. | 1 | 8/03/2025 |
| FR\_25 | Operations manager will calculate labor cost. | Labor expenses will be calculated and integrated into financial reports. | 1 | 8/03/2025 |
| FR\_26 | Operations manager will register machineries. | This includes registration in the system and purchase details, maintenance schedules, and usage history. | 2 | 8/03/2025 |
| FR\_27 | Operations manager will put all work instructions. | Employees will follow structured work processes to maintain consistency in production. | 1 | 9/03/2025 |
| FR\_28 | Achievement of production. | All work done by employees will be posted in the system by operation manager. | 1 | 9/03/2025 |
| FR\_29 | System will support role-based dashboards. | Each user role (Admin, CFO, HR, Sales Agent, Operations Manager) will have a personalized dashboard displaying relevant information. | 2 | 9/03/2025 |
| FR\_30 | The system will include an automated backup feature to prevent data loss. | Data backups will be generated periodically to ensure security and business continuity. | 2 | 9/03/2025 |

# 3.2 Non-Functional Requirements

**3.2.1 Product Requirements**

**3.2.1.1 User Interface Requirements**

Our application will be a web-based system, accessible through any web browser on computers with an internet connection.

The first page will be a login interface, requiring users to enter their username and password. If incorrect login credentials are provided, the system will immediately notify the user. Upon successful authentication, the appropriate interface will be displayed. The system will support four user roles: Administrator, Chief Finance Officer (CFO), Human Resource (HR) Specialist, and Sales Agent.

The application will include multiple modules to efficiently manage the company’s operations. These modules include:

1. Employee Management
2. Sales and Order Processing
3. Customer Management
4. Supplier Management
5. Report Generation

The Administrator will be responsible for managing user accounts, including adding new users (CFO, HR Specialist, Sales Agent, or Operations Manager), modifying existing accounts, and reviewing user details. Once a new user is registered, the Administrator will provide their login credentials.

The CFO will oversee company activities, manage financial data, register products, add brands and categories, and generate monthly reports for management. Additionally, the CFO will be responsible for supplier registration and maintaining supplier-related information.

The HR Specialist will handle employee-related tasks, including hiring, modifying employee records, and managing departmental structures. Other key responsibilities include job evaluations and payroll management.

The Sales Agent will track customer data and sales transactions. At the end of each month, they will review reports detailing the most sold products. Additionally, they will be responsible for registering new customers and maintaining records of existing ones.

The Operations Manager will manage raw materials, labor costs, and production expenses. They will also register machinery, monitor work instructions, and track production achievements.

**3.2.1.2 Usability**

* The system will be user-friendly and easy to navigate.
* It will be context-sensitive, ensuring that users clearly understand each function.
* The interface will be designed to be intuitive and efficient, avoiding unnecessary complexity.

**3.2.1.3 Efficiency**

Performance

* Users will be able to complete tasks efficiently within the management system.
* The software will facilitate seamless operations for administrators and financial personnel by providing intuitive management tools.
* First-time users will be able to interact with the system without requiring assistance.
* The system will minimize user errors and ensure all tasks are completed with minimal effort.
* System performance will be optimized to maximize productivity.

Space Requirements

* Since the system is a web application, it will be hosted on a web server.
* The application itself will require approximately 150MB, while the database will be relatively smaller.
* The number of active users will be limited to the registered users in the system.
* The system is expected to consume a maximum of 3GB of bandwidth per month.

**3.2.1.4 Dependability**

Availability

* The application will be accessible anytime and anywhere.
* Users can log in as long as they have an internet connection.
* The system is geographically unrestricted but will only be available in English.
* Downtime will be minimal, ensuring that business operations are not significantly disrupted.

Portability

* The system will function consistently regardless of the user's OS.
* The system will support cross-platform usage without modifications.

Reliability

* The system will be designed to provide fast and accurate task execution with minimal errors.
* Error-prone scenarios will be eliminated, ensuring high reliability.
* The system will minimize the chances of operational failures.
* *Performance benchmarks:* 
  + Login module: Load time ≤ 100ms.
  + Employee module: Load time ≤ 300ms.
  + Sales, Order, and Customer modules: Load time ≤ 300ms.
  + Supplier and Report modules: Load time ≤ 400ms.

Maintainability

Monitoring

* The system will be designed to prevent crashes.
* The login page will enforce strict input validation to prevent errors due to incorrect credentials.
* The employee module will include:
  + Employee registration
  + Modification of records
  + Deletion of employees
* Input validation will prevent errors such as entering numbers in name fields or leaving mandatory fields blank.

Maintenance

* If a system crash occurs, the web application will automatically restart and resume from the last known state.
* The system will include a speed test feature, particularly useful for generating financial reports.
* A backup system will be implemented to preserve progress before any modifications, preventing data loss.

**3.2.1.5 Security**

Data Protection

* To safeguard system data from unauthorized access, modification, or misuse, the system will enforce:
* Strict validation before storing data in the database.
* Regular expressions for validating:
  + Passwords
  + Email addresses
  + Usernames
  + Names
* User activity logs will track system actions.
* Sensitive data (e.g., passwords) will be encrypted using hashing methods.
* Employees will only have access to relevant information, while administrators will have control over all user data.

System Security Measures

* Encryption
* Activity logging
* Data integrity checks

Authorization & Authentication

* Users will only have access to relevant information based on their role.
* Only internet-connected users can access the system.
* *Authentication* will be enforced through:
  + Session management
  + Cookies for persistent login

Data Management

* User data will be restricted based on assigned roles.
* Validation will be enforced for critical fields.
* The system will manage:
  + User profiles
  + Products and suppliers
  + Financial records
  + Sales and production details
* The database will include: Users, Products, Suppliers, Orders, Departments, Customers, Production Details, etc.

**3.2.2 Organizational Requirements**

**3.2.2.1 Operational Process**

The application will assist users in:

* Managing user accounts (CFO, HR Specialist, Sales Agent, etc.)
* Modifying user credentials
* Registering, modifying, and deleting suppliers, products, and employees
* Managing payroll, job evaluations, and financial reports
* Handling sales and order tracking
* Keeping records of raw materials and production costs
* Registering machinery and work instructions

**3.2.2.2 Development Process**

* The system will utilize HTTP & HTTPS protocols.
* It will employ SQL technologies for database management.
* Networking protocols: UDP & TCP/IP.
* Users cannot modify the database structure.
* The system will function over Wi-Fi, mobile data, or any internet connection.
* Authentication will require valid credentials.
* Different user interfaces and functionalities will be assigned based on roles.
* The system will support multiple time zones.

**3.2.2.3 Network & Hardware Interfaces**

* The web application will be hosted on a web server.
* The user’s browser will establish a TCP connection with the server.

**3.2.3 External Requirements**

**3.2.3.1 Regulatory Compliance**

* The system will comply with Law No. 25/2024 on Accounting and Financial Statements.
* It will support financial report generation following national tax authority regulations.

**3.2.3.2 Ethical Considerations**

* User privacy will be strictly maintained.
* All users will be treated *equally* by the system.

**3.2.3.3 Legislative Compliance**

* The system will comply with Law No. 9887 regarding personal data protection.
* A domain registration request will be submitted to AKSHI.
* The system will adhere to copyright and intellectual property laws.

**3.2.4 Domain Requirements**

The system will digitize business operations in furniture retail management. It will provide:

* Detailed reports for decision-making.
* HR management tools for handling employee data.
* Financial tools for managing accounting and suppliers.
* Sales tracking features to oversee customer interactions.

These ensure efficient business operations and better financial oversight.