Software Requirements Specification

Project: MADECOR Inventory and Sales Web System

Version Table

Date	Name	Description	Version
10/11/2024	Elkin Pabon	Functional and nonfunctional requirements	V1.0
10/11/2024	José Proaño	Overview and use case diagram	V1.0
10/11/2024	Darwin Panchez	Introduction,Common interface requirements	V1.0

Document validated by the parties on date:

By the client	By the supplier company
Signed Mr./Mrs. Cesar Pabon	Signed by Team 5 *“Three Musketeers”*

Content

1 Introduction

1.1 Purpose

The purpose of this document is to precisely outline the functional and non-functional requirements necessary for the development of the MADECOR Inventory and Sales System. This system seeks to solve current inventory and sales management needs, offering an integrated tool that facilitates product control and allows real-time updating of stock levels, thus optimizing the decision-making process. Additionally, the system will allow MADECOR to maintain a transaction history and a detailed sales record, which improves the monitoring of commercial activity and reduces errors derived from manual data handling.

1.2 Scope

MADECOR's inventory and sales system will allow you to manage stock control and registration of product sales in real time, generating detailed reports that help in decision making, optimizing stock updates, transaction tracking, and allocation of permissions according to specific roles. Its implementation will centralize and automate inventory and sales operations, thus improving efficiency and accuracy in MADECOR's resource management.

1.3 Staff involved

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1.4 Definitions, acronyms and abbreviations

This section provides definitions and explanations of terms, abbreviations, and acronyms used in this document to facilitate your understanding. Technical and software development context-specific terms are detailed below, ensuring clear and accurate interpretation for readers.

- **MADECOR:** Brand of Teaching Material, Children's Furniture and Toys Store, which is the beneficiary entity of the inventory and sales system.
- **Inventory:** A set of detailed records that represent the store's stock of products, including their quantity, location, and condition.
- **System:** Software application that integrates inventory and sales functionalities, allowing the management of products and transactions in real time.
- **End User:** MADECOR personnel, such as managers, inventory managers and sales personnel, who interact directly with the system.
- **Stock:** Available quantity of each product in inventory, which is automatically updated based on sales and product entry records.
- **Module:** Independent component of the system responsible for performing a specific function, such as inventory management or sales registration.
- **UI (User Interface):** User interface,
- which is the part of the system with which the user interacts to perform specific tasks.
- **API (Application Programming Interface):** Set of protocols and tools that allow communication between the MADECOR system and other external systems or internal modules.
- **DB (Database):** System that organizes and stores all inventory, sales and system user data for consultation and update.
- **Report:** Document generated by the system that summarizes sales, stock and inventory movements data, used for decision making.

1.5 References

Reference	Qualification	Route	Date	Author
IEEE	Standard IEEE 830 - 1998		1998	IEEE

1.6 Summary

This document is organized into three key sections. The first section introduces the document and provides an overview of the requirements specification, providing context on the purpose and scope of the inventory and sales system for MADECOR. The terms are described here, roles and responsibilities of those involved in development.

In the second section, a general description of the system is made, which includes its main functions, the data necessary for its operation and the restrictions that must be considered. In addition, the assumptions and dependencies that could influence its development are explained, without delving into specific details.

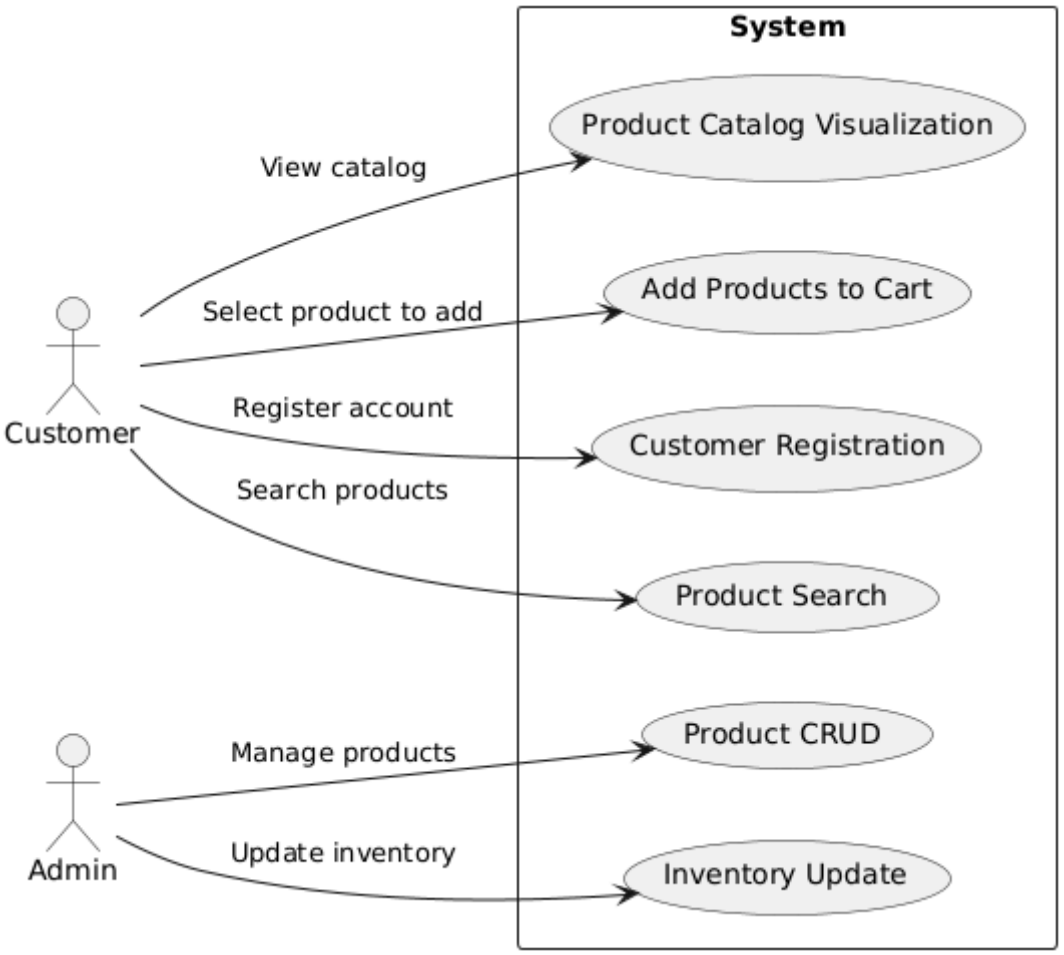
The third section presents the specific requirements of the system in detail, both functional requirements, which describe the tasks and actions of the system, and non-functional requirements, which address performance, security and reliability aspects.

2 Overview

2.1 Product Outlook

The system being developed is a web application designed to support a small business called Madecor, specializing in the manufacture, sale, and distribution of didactic wooden toys. The primary objective of this application is to enhance Madecor's online presence, manage sales, streamline inventory control, and improve internal organizational processes. This application will serve both as an e-commerce platform and an internal tool for inventory management and sales tracking, and will be accessible via multiple platforms, including mobile devices and desktop computers. The application connects Madecor’s product management, sales, and customer interaction functions, integrating them into a single online system that increases both visibility and operational efficiency.

2.2 Product Functionality



2.3 User characteristics

User type	Administrator
Training	Business owner or manager

Skills	Familiarity with online sales, inventory management, and basic computer skills
Activities	Controls system settings, monitors sales, and updates product information

User type	Customer
Training	General users of e-commerce websites
Skills	Basic digital literacy
Activities	Browses catalog, selects products, and completes transactions

2.4 Restrictions

- **Web Interface:** Accessible via internet browsers
- **Technology Stack:** HTML, CSS, JavaScript, Node.js
- **Concurrency:** The server must handle concurrent queries efficiently
- **Platform Independence:** The system should function on various devices without platform dependencies

2.5 Assumptions and dependencies

Assumes internet accessibility and compatibility with modern web browsers
The development environment, technologies, and system requirements outlined remain stable
Assumes that end users will have reliable internet connectivity

2.6 Foreseeable evolution of the system

Potential future improvements include:

- Expanding customer interactivity with customizable accounts and tracking options
- Integrating analytics for customer behavior insights
- Developing advanced inventory tracking

3 Specific requirements

3.1 Common interface requirements

3.1.1 User interfaces

The user interface will consist of a set of interactive windows with buttons, drop-down lists, and text fields that will allow users to perform operations such as inventory management, sales registration, and consulting reports. The interface will be specifically designed for the MADECOR system, seeking to be visually clear and easy to use for personnel with different levels of technological

experience. This system will be accessible through a modern web browser, providing the flexibility to operate on different devices.

3.1.2 Hardware interfaces

To guarantee the proper functioning of the system, the use of computing equipment in optimal conditions that meet the following minimum specifications will be required:

- Network adapters: To ensure connectivity and access to the system in real time.
- Processor: 1.66 GHz or higher,for proper performance in processing inventory and sales data.
- RAM: Minimum of 256 MB (although at least 4 GB is recommended for optimal performance in high-usage environments).
- Peripherals: Mouse and keyboard, necessary for complete interaction with the system.

3.1.3 Software interfaces

The system is designed to be compatible with the following software environments:

- Operating System: Windows XP or higher, in order to ensure compatibility with most office devices.
- Browsers: Mozilla Firefox or Google Chrome, which are popular internet browsers with the ability to run web applications quickly and securely. It is recommended to use the latest version available to maximize compatibility and performance.

3.1.4 Communication interfaces

Communication between servers, clients and other applications will be carried out using standard Internet protocols to ensure interoperability and security. The system will use:

- HTTP/HTTPS Protocol: For data transfer between the client and the server, guaranteeing the security and confidentiality of the information.
- File Transfer Protocols: If you need to send or receive large documents, protocols such as FTP or secure alternatives will be used that allow efficient file management.

3.2 Functional requirements

3.2.1 Product Catalog Visualization

Requirement number	RF-01
Requirement name	Product Catalog Visualization
Type	(X) Requirement ( ) Restriction
Source of requirement	César Iván Pabón Portilla (MADECOR Manager)
Requirement priority	(X) High/Essential ( ) Average/Desired ( ) Low/ Optional

DESCRIPTION:

The system must allow customers to view the available products with their name, price, and an image, organized by categories.

INPUTS:

- Selected category (optional)
- Product data: name, price, image

PROCESSES:

The customer selects the category of products they want to view. The system displays the available products within that category, showing the details mentioned (name, price, and image).

OUTPUTS:

- List of products with name, price, and image.
- Error messages if no products are available in the selected category.

3.2.2 Add Products to Cart

Requirement number	RF-02
Requirement name	Add Products to Cart
Type	(X) Requirement ( ) Restriction
Source of requirement	César Iván Pabón Portilla (MADECOR Manager)
Requirement priority	(X) High/Essential ( ) Average/Desired ( ) Low/ Optional

DESCRIPTION:

The system must allow customers to add products to the shopping cart.

INPUTS:

- Selected product
- Quantity of the product

PROCESSES:

The customer selects the product they want to add to the cart and specifies the quantity. The system validates the product's availability and adds the selection to the customer's cart.

OUTPUTS:

- Confirmation that the product has been added to the cart.
- Cart summary with selected products and quantities.

3.2.3 Customer Registration

Requirement number	RF-03
Requirement name	Customer Registration
Type	(X) Requirement ( ) Restriction
Source of requirement	César Iván Pabón Portilla (MADECOR Manager)
Requirement priority	(X) High/Essential ( ) Average/Desired ( ) Low/ Optional

DESCRIPTION:

The system must allow customers to register by creating an account with their name, email, and password in order to make purchases and manage their information.

INPUTS:

- Full name
- Email address
- Password

PROCESSES:

The customer completes the registration form with their personal information. The system validates the data and creates the account in the database.

OUTPUTS:

- Confirmation of successful registration.
- Error messages if the entered data is invalid or if the email is already registered.

3.2.4 Product CRUD

Requirement number	RF-04
Requirement name	Product CRUD
Type	(X) Requirement ( ) Restriction
Source of requirement	César Iván Pabón Portilla (MADECOR Manager)
Requirement priority	(X) High/Essential ( ) Average/Desired ( ) Low/ Optional

DESCRIPTION:

The system must allow the admin to perform **CRUD** (Create, Read, Update, Delete) operations on the products in the inventory. This includes adding, viewing, modifying, and removing products as needed.

INPUTS:

- Product name
- Description
- Price
- Image
- Category

PROCESSES:

The admin can:

- Create: Add new products to the inventory.
- Read: View details of existing products.
- Update: Modify the product information.
- Delete: Remove products from the inventory.

OUTPUTS:

- Confirmation that the CRUD operation was successful.
- Error messages if the data is invalid or incomplete.

3.2.5 Inventory Update

Requirement number	RF-05
Requirement name	Inventory Update
Type	(X) Requirement ( ) Restriction
Source of requirement	César Iván Pabón Portilla (MADECOR Manager)
Requirement priority	(X) High/Essential ( ) Average/Desired ( ) Low/ Optional

DESCRIPTION:

The system must allow the admin to update the quantities of available products in the inventory, ensuring that stock levels are always up-to-date.

INPUTS:

- Product
- Available quantity

PROCESSES:

The admin enters the available quantities of products, and the system updates the inventory records. If there is a reduction in inventory due to sales, the system should reflect the change in real-time.

OUTPUTS:

- Confirmation of inventory update.
- Error messages if the inventory update fails due to invalid data or product issues.

3.2.6 Product Search

Requirement number	RF-06
Requirement name	Product Search
Type	(X) Requirement ( ) Restriction
Source of requirement	César Iván Pabón Portilla (MADECOR Manager)
Requirement priority	(X) High/Essential ( ) Average/Desired ( ) Low/ Optional

DESCRIPTION:

The system must allow customers to search for products within the catalog using filters such as name, category, or keywords in the description.

INPUTS:

- Search keyword

- Filters (category, price range)

PROCESSES:

The customer enters a search term or selects a filter. The system displays the products that match the search criteria.

OUTPUTS:

- List of products that match the search.
- Error messages if no products match the search criteria.

3.3 Non-functional requirements

3.3.1 Security in Access

Requirement number	RNF-01
Requirement name	Security in Access
Type	() Requirement (X) Restriction
Source of requirement	César Iván Pabón Portilla (MADECOR Manager)
Requirement priority	(X) High/Essential ( ) Average/Desired ( ) Low/ Optional

DESCRIPTION:

The system must ensure that only authorized users can access it by enforcing secure login procedures, including encryption of passwords. Invalid login attempts must be logged and have a limited number of retries to prevent unauthorized access.

3.3.2 System Performance

Requirement number	RNF-02
Requirement name	System Performance
Type	( ) Requirement (X) Restriction
Source of requirement	César Iván Pabón Portilla (MADECOR Manager)
Requirement priority	(X) High/Essential ( ) Average/Desired ( ) Low/ Optional

DESCRIPTION:

The system must be able to handle up to 500 concurrent users without a significant decrease in performance. Response times for product searches, cart updates, and login actions must not exceed 3 seconds.

3.3.3 System Availability

Requirement number	RNF-03
Requirement name	System Availability
Type	( ) Requirement (X) Restriction
Source of requirement	César Iván Pabón Portilla (MADECOR Manager)
Requirement priority	(X) High/Essential ( ) Average/Desired ( ) Low/ Optional

DESCRIPTION:

The system must be available 24/7, with a maximum downtime of 2 hours per month for maintenance. Any planned outages must be communicated to users at least 24 hours in advance.

3.3.4 Usability

Requirement number	RNF-04
Requirement name	Usability
Type	() Requirement (X) Restriction
Source of requirement	César Iván Pabón Portilla (MADECOR Manager)
Requirement priority	(X) High/Essential ( ) Average/Desired ( ) Low/ Optional

DESCRIPTION:

The system must have a user-friendly interface, with clear navigation, intuitive design, and accessibility features. It should support accessibility standards (WCAG 2.1) to ensure usability for all users, including those with disabilities.

3.4 Other requirements

3.4.1 IRQ-01: Customer and User Data Storage

The system must store customer and user information for individuals using the system, including names, addresses, phone numbers, and email addresses. This information is essential for personalizing services, promotions, and billing. Proper storage of this data ensures that the system can deliver customized experiences and track customer interactions effectively.

3.4.2 IRQ-02: Product Data Storage

The system must store detailed information about products, including names, descriptions, prices, categories, and available inventory quantities. Additionally, the system must manage product selection and the offers applied by the administrator. This data will facilitate effective inventory management, efficient product searching for customers, and smooth operations for store staff.

3.4.3 IRQ-03: Data Backup

The system must perform automatic regular data backups to ensure the availability of information in case of system failures or accidental data loss. These backups must be stored securely and be easily recoverable, allowing the system to be restored quickly, minimizing downtime, and ensuring that critical data is never permanently lost.