
Software Requirements Specification

Project: Tu Huella Cerámica

Document information

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1 Introduction

This Software Requirements Specification (SRS) corresponds to the information system for process management and inventory control of a website dedicated to the sale of customized ceramic products. This specification has been developed following the guidelines of the IEEE standard Recommended Practices for Software Requirements Specifications.

1.1 Purpose

The purpose of this document is to define the functional and non-functional specifications for the development of a web-based information system that will manage the various administrative and sales processes of the Tu Huella Ceramica store. This system will be designed to be used by administrative, customer service, and purchasing staff, optimizing inventory management, order fulfillment, and customer interaction.

1.2 Project scope

The scope of this software requirements specification focuses on providing a detailed description of Tu Huella Cerámica's web-based information system, which aims to improve the management of key administrative processes such as inventory, orders, promotions, and customer service. The system will facilitate product management, order tracking, and planning of important events, streamlining internal operations and customer communication.

1.3 Personnel involved

Name	Role	Professional Category	Responsibility	Contact Information
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1.4 Definitions, acronyms and abbreviations

Name	Description
User	Person who will use the system to manage processes
Costumer	Person who will use the system to buy a product
ERS	Software Requirements Specification
RF	Functional Requirement
RNF	Non-functional requirement

1.5 References

Título del Documento	Referencia
Standard IEEE 830 - 1998	IEEE

1.6 Summary

This document is structured into three main sections. The first section provides a general introduction that offers an overview of the requirements specification for the web-based information system for Tu Huella Cerámica. The second section describes the proposed system in detail, including its main functionalities, relevant data, as well as the factors, constraints, assumptions, and dependencies that affect its development, without going into too much detail. The third and final section focuses on the complete definition of the specific requirements that the system must meet, addressing each element necessary to ensure a successful implementation that meets the project's expectations and needs.

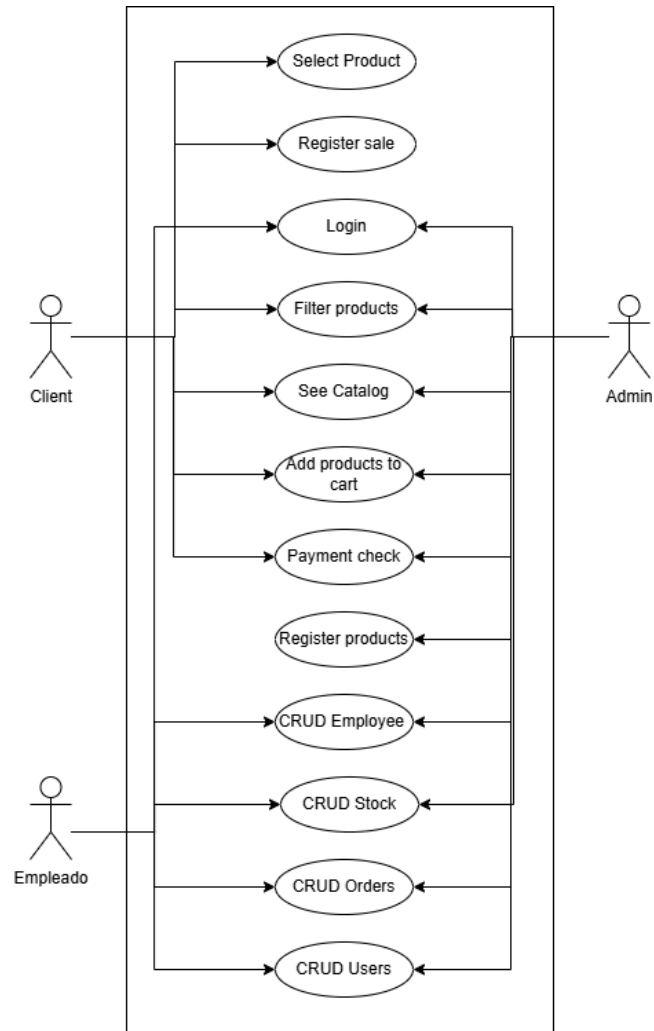
2 Overview

2.1 Overview

El sistema de información de Tu Huella Cerámica será un producto diseñado para operar en entornos web, lo que permite un uso rápido y eficiente. La plataforma estará orientada a optimizar la gestión de inventario, los pedidos y la atención al cliente, facilitando la interacción tanto del personal administrativo como de los usuarios finales. Con la implementación de este sistema, Tu Huella Cerámica podrá ampliar su presencia en línea, mejorar la supervisión de las operaciones y aumentar la eficiencia general, adaptándose a las crecientes demandas del comercio electrónico y fortaleciendo su competitividad en el mercado.

2.2 Product Functionality

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2.3 User characteristics

User type	Administrator
Training	Third level title
Activities	Control and management of employees

User type	Employee
Training	Third level title
Activities	Control and management of the system in general

User type	Customer
Training	None or basic digital literacy
Activities	Browse products, customize items, make purchases, view order history.

2.4 Restrictions

- Tu Huella Cerámica's web information system must comply with current data protection regulations to guarantee the security and privacy of its customers' information. It must be accessible from both mobile and desktop devices to ensure an optimal user experience on any platform. Furthermore, the system must be integrated with secure payment gateways that allow for reliable transactions, protecting users' financial information and complying with e-commerce security standards.

2.5 Assumptions and dependencies

- The web platform operates efficiently. Users are also expected to be familiar with basic online application usage. The system depends on the availability of a reliable web server, a relational database to manage product, order, and customer information, and payment gateway services to ensure secure and seamless transactions. The stability and performance of the system will depend on the capacity and maintenance of these technological elements.

3 Specific Requirements

Functional Requirements

Requirement Identification:	RF01
Requirement Name:	Client Registration
Characteristics:	The system must allow the registration of a new client including personal data, billing, and shipping address.
Requirement Description:	The user can create an account by providing their name, email, password, billing address, and shipping address.
Non-Functional Requirement:	RNF01: Passwords must be encrypted.
Priority of the Requirement: High	

Requirement Identification:	RF02
Requirement Name:	Edit Client Profile
Characteristics:	Allows the client to update their personal, billing, and shipping information.
Requirement Description:	An authenticated client will be able to modify their name, email, phone number, billing, and shipping addresses from their profile.

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Non-Functional Requirement:	RNF02 – All changes must be audited on the backend for security and traceability.
Priority of the Requirement: High	

Requirement Identification:	RF03
Requirement Name:	Client Authentication
Characteristics:	Authentication via email and password.
Requirement Description:	The system must allow registered clients to log in using their email and password.
Non-Functional Requirement:	RNF03 – Authentication must be protected the attacks..
Priority of the Requirement: High	

Requirement Identification:	RF04
Requirement Name:	Login
Characteristics:	Secure login functionality..
Requirement Description:	The system must allow clients to securely log in to access their account and order history.
Non-Functional Requirement:	RNF04: Las contraseñas deben ser almacenadas con hash bcrypt.
Priority of the Requirement: High	

Requirement Identification:	RF05
Requirement Name:	Product Search
Characteristics:	Allows users to search items by name or keyword.
Requirement Description:	The client can enter search terms into a search bar and receive relevant product results.
Non-Functional Requirement:	RNF05: The search must respond in under 1 second to ensure a good user experience.
Priority of the Requirement: High	

Requirement Identification:	RF06
Requirement Name:	Product Filter
Characteristics:	Allows filtering products by category, price, popularity, or availability.
Requirement Description:	Users can apply filters to the product listing to find items more easily.
Non-Functional Requirement:	
Priority of the Requirement: High	

Software Requirements Specification

Requirement Identification:	RF07
Requirement Name:	Add to Cart
Characteristics:	Allows products to be added to the shopping cart.
Requirement Description:	Authenticated users can select products and add them to their cart, including quantity and personalization if applicable.
Non-Functional Requirement:	RNF07: The cart must persist in session until cleared or the purchase is completed.
Priority of the Requirement: High	

Requirement Identification:	RF08
Requirement Name:	Delete products from the cart
Characteristics:	Option to delete individual products from the cart view. Automatic update of the display of the product total and total amount.
Requirement Description:	The system must allow the customer to remove products previously added to the shopping cart directly from the user interface.
Non-Functional Requirement:	RNF08: When you remove a product from your shopping cart, the available quantity of that product in general stock should automatically increase.
Priority of the Requirement: High	

Requirement Identification:	RF09
Requirement Name:	Change quantity of products.
Characteristics:	Validation against current stock before confirming the change. Dynamic update of the product subtotal and cart total.
Requirement Description:	The system must allow the customer to modify the quantity of a product they wish to purchase directly from the shopping cart, provided that it does not exceed the quantity available in stock.
Non-Functional Requirement:	RNF09: Validate that the new requested quantity does not exceed available stock, avoiding errors and overselling.
Priority of the Requirement: High	

Requirement Identification:	RF10
Requirement Name:	Customize products
Characteristics:	Display of customizable options via drop-down menus or buttons. Real-time display of the customization result (if applicable, as in preview products).
Requirement Description:	The customer will be able to customize the features of the selected product according to their preferences, including color, size, design, and other attributes defined by the system administrator.
Non-Functional Requirement:	RNF10: The system must ensure that the available customization combinations are predefined and validated to avoid errors in production or delivery.

Software Requirements Specification

Priority of the Requirement: High

Requirement Identification:	RF11
Requirement Name:	Buy products
Characteristics:	Automatic calculation of subtotals, shipping, and taxes. Validation of the delivery address entered by the customer. Ability to select from multiple saved addresses.
Requirement Description:	The system should automatically calculate the total amount due for the selected products and shipping costs, displaying the final amount to the customer before payment. It should also allow the customer to enter and save a delivery address.
Non-Functional Requirement:	RNF11: The user interface should allow auto-completion or address suggestions to improve the user experience and reduce input errors.
Priority of the Requirement: High	

Requirement Identification:	RF12
Requirement Name:	Pay the order
Characteristics:	Option to select the payment method. Generation of detailed bank transfer instructions. Integration with payment gateways (Stripe, PayPal, or others). Visual and email confirmation of received payment.
Requirement Description:	The system will show the customer the available payment options, including bank transfer and direct online payments through integrated gateways. The system must record and confirm receipt of payment through a notification to the user.
Non-Functional Requirement:	RNF12: The transmission of financial data must be carried out using secure protocols to protect user information.
Priority of the Requirement: High	

Requirement Identification:	RF13
Requirement Name:	Generate order history
Characteristics:	Orders displayed by date. Access to details for each individual order. Ability to repeat a previous order with a single click.
Requirement Description:	The system must allow the customer to view a history of previously placed orders, including date, products purchased, delivery status, and payment method.
Non-Functional Requirement:	RNF13: The history must be available permanently while the customer's account is active, and accessible from any authenticated device.
Priority of the Requirement: High	

Requirement Identification:	RF14
Requirement Name:	Bill
Characteristics:	Automatic generation in PDF format. Invoice sent to the customer's email. Option to download the invoice from the order history.

Software Requirements Specification

Requirement Description:	The system should automatically generate a detailed invoice for each order placed. The invoice will include customer information, products purchased, unit prices, subtotal, taxes, shipping, and the total.
Non-Functional Requirement:	RNF14: The invoice format must comply with current legal regulations (e.g., electronic invoicing, if applicable).
Priority of the Requirement: High	

Requirement Identification:	RF15
Requirement Name:	Role Management
Characteristics:	The system will allow the administrator to manage user roles such as Administrator, Client, and Employee.
Requirement Description:	The administrator can assign, modify, or revoke roles for any user within the platform.
Non-Functional Requirement:	
Priority of the Requirement: High	

Requirement Identification:	RF16
Requirement Name:	CRUD Employees
Characteristics:	The administrator will be able to perform Create, Read, Update, and Delete operations on employee accounts.
Requirement Description:	Admin can manage the lifecycle of employee records in the system..
Non-Functional Requirement:	
Priority of the Requirement: High	

Requirement Identification:	RF17
Requirement Name:	CRUD Stock
Characteristics:	Employees can manage inventory data including creation, updates, deletion, and visualization of stock.
Requirement Description:	The stock module will allow employees to track and update product inventory.
Non-Functional Requirement:	
Priority of the Requirement: High	

Requirement Identification:	RF18
Requirement Name:	CRUD Orders
Characteristics:	Employees can update, logically delete, and view customer orders.

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Requirement Description:	The system will allow employees to manage existing orders without physically removing them from the database.
Non-Functional Requirement:	
Priority of the Requirement: High	

Requirement Identification:	RF19
Requirement Name:	CRUD Users (Costumer)
Characteristics:	Employees can manage client data through create, read, update, and delete operations.
Requirement Description:	The system will allow employees to register, modify or deactivate customer accounts.
Non-Functional Requirement:	RNF13: Any change must trigger an audit log and email confirmation (if deletion).
Priority of the Requirement: Medium	

Requirement Identification:	RF20
Requirement Name:	Product Recommendation
Characteristics:	The system will automatically identify and display top-selling products on a dedicated recommendation section.
Requirement Description:	Using sales data, the system will highlight the best-selling product(s) of the month
Non-Functional Requirement:	
Priority of the Requirement: Medium	

Requirement Identification:	RF21
Requirement Name:	Stock Depletion Alert
Characteristics:	The system will automatically monitor product inventory and alert responsible employees when stock levels fall below a threshold.
Requirement Description:	The system must send a notification to designated employees when a product's quantity is low.
Non-Functional Requirement:	
Priority of the Requirement: High	

Requirement Identification:	RF22
Requirement Name:	Order Generation
Characteristics:	Clients will be able to complete their shopping process by generating a purchase order that includes selected products, customization details, and delivery address.

Software Requirements Specification

Requirement Description:	The system must allow customers to generate an order once the purchase is confirmed.
Non-Functional Requirement:	
Priority of the Requirement: High	

Requirement Identification:	RF23
Requirement Name:	Order Notification to Employees
Characteristics:	Once a new order is placed, the system will automatically notify employees assigned to order management.
Requirement Description:	Upon order generation, the system must notify responsible employees via internal dashboard and/or email.
Non-Functional Requirement:	
Priority of the Requirement: High	

No Functional Requirements

Requirement Identification:	RNF 01
Requirement Name:	Scalability
Characteristics:	Requirement
Requirement Description:	Todos los datos deben almacenarse en formato seguro (contraseña encriptada, dirección en base de datos cifrada).
Associated Requirement:	
Priority of the Requirement: High	

Requirement Identification:	RNF 02
Requirement Name:	Usability
Characteristics:	Requirement
Requirement Description:	Los cambios deben ser auditados en el backend para seguridad y trazabilidad.

Associated Requirement:	
Priority of the Requirement: High	

Requirement Identification:	RNF03
Requirement Name:	Fault Tolerance
Characteristics:	Requirement

Software Requirements Specification

Requirement Description:	El proceso de autenticación debe contar con protección.
Associated Requirement:	
Priority of the Requirement: High	

Requirement Identification:	RNF04
Requirement Name:	Security
Characteristics:	Requirements
Requirement Description:	Las contraseñas deben ser almacenadas con hash bcrypt.
Associated Requirement:	
Priority of the Requirement: High	

Requirement Identification:	RNF05
Requirement Name:	Disponibility
Characteristics:	Requirements
Requirement Description:	La búsqueda debe responder en menos de 5 segundo para una buena experiencia de usuario.
Associated Requirement:	
Priority of the Requirement: High	

Requirement Identification:	RNF06
Requirement Name:	Maintainability
Characteristics:	Requirements
Requirement Description:	The system must be easy to incorporate new features
Associated Requirement:	
Priority of the Requirement: High	

Software Requirements Specification

Requirement Identification:	RNF07
Requirement Name:	Disponibility Rendering Engine
Characteristics:	Requirement
Requirement Description:	The system must run in differents Web Browsers
Associated Requirement:	
Priority of the Requirement: High	

3.1 Common interface requirements

3.1.1 User interfaces

The user interface will be a web page specifically designed to simplify the online commercialization of products. This page will include navigation windows, interactive buttons, product lists, and text fields to perform searches, enter purchase information, and streamline navigation. The platform will feature sections for product categories, product characteristics, prices, and purchasing options. Users will have the ability to access and use this interface from any web browser, enabling them to easily browse the catalog, add products to their cart, make payments, and manage their orders in an intuitive and efficient manner.

3.1.2 Hardware interfaces

The system will require electronic devices such as computers, cell phones, or tablets connected to an internet network. Additional features necessary for optimal navigation will include the following:

- Network adapters
- Processor of 1.66 GHz or higher
- Minimum memory of 256 MB
- Mouse
- Keyboard

3.1.3 Software interfaces

- Operating System: Windows 10 or higher
- Browser: Chrome, Opera, Microsoft Edge, or other web browsers

3.1.4 Communication interfaces

The system will implement a communication interface based on standard Internet protocols to ensure efficient and secure file and data traffic. For file or document exchanges, the system will utilize proven and robust protocols such as FTP (File Transfer Protocol), with the option to use more secure versions like SFTP (Secure File Transfer Protocol) or FTPS (FTP Secure) according to encryption and security requirements.

For internal communication, whether between servers, client applications, or among servers, protocols such as HTTP/HTTPS will be employed. This choice aims to ensure reliability and protection of communications, particularly for handling sensitive data, using HTTPS's intrinsic encryption to safeguard the integrity and privacy of data in transit.

3.2 Functional Requirements

3.2.1 Functional Requirement 1

- **Client Registration:** The system must allow the registration of a new client including personal data, billing, and shipping address.

3.2.2 Functional Requirement 2

- **Edit Client Profile:** Allows the client to update their personal, billing, and shipping information.

3.2.3 Functional Requirement 3

- **Client Authentication:** The system must allow registered clients to log in using their email and password.

3.2.4 Functional Requirement 4

- **Login:** The system must allow clients to securely log in to access their account and order history.

3.2.5 Functional Requirement 5

- **Product Search:** The client can enter search terms into a search bar and receive relevant product results.

3.2.6 Functional Requirement 6

- **Product Filter:** Allows filtering products by category, price, popularity, or availability.

3.2.7 Functional Requirement 7

- **Add to Cart:** The users can select products and add them to their cart, including quantity and personalization if applicable.

3.2.8 Functional Requirement 8

- **Payment Verification:** The system will perform payment verification to ensure transaction validity and confirmation.

3.2.9 Functional Requirement 9

- **Delete products from the cart:** The system must allow the client to delete products previously added to the shopping cart directly from the user interface.

3.2.10 Functional Requirement 1

- **Change quantity of products:** The system must allow clients to change the quantity of products they wish to purchase, ensuring it doesn't exceed available stock.

3.2.11 Functional Requirement 11

- **Customize products:** The client can personalize the product by selecting different attributes such as color, size, or design.

3.2.12 Functional Requirement 12

- **Buy products:** The system should automatically calculate the total amount due for the selected products and shipping costs, displaying the final amount to the customer before payment.

3.2.13 Functional Requirement 13

- **Pay the order:** The system must show available payment options (bank transfer, direct payment) and register payment confirmation.

3.2.14 Functional Requirement 14

- **Generate order history:** The system should display the order history to the client, including details of past purchases.

3.2.15 Functional Requirement 15

- **Bill:** The system should generate invoices automatically for each order, including client information and ordered products.

3.2.16 Functional Requirement 16

- **Role Management:** The system will allow the administrator to manage user roles such as Administrator, Client, and Employee.

3.2.17 Functional Requirement 17

- **CRUD Employees:** The administrator will be able to perform Create, Read, Update, and Delete operations on employee accounts.

3.2.18 Functional Requirement 18

- **CRUD Stock:** Employees can manage inventory data including creation, updates, deletion, and visualization of stock..

3.2.19 Functional Requirement 19

- **CRUD Orders:** Employees can update, logically delete, and view customer orders.

3.2.20 Functional Requirement 20

- **CRUD Users (Customers):** Employees can manage client data through create, read, update, and delete operations.

3.2.21 Functional Requirement 21

- **Product Recommendation:** The system will automatically identify and display top-selling products on a dedicated recommendation section.

3.2.22 Functional Requirement 22

- **Stock Depletion Alert:** The system will automatically monitor product inventory and alert responsible employees when stock levels fall below a threshold.

3.2.23 Functional Requirement 23

- **Order Generation:** Clients will be able to complete their shopping process by generating a purchase order that includes selected products, customization details, and delivery address.

3.2.24 Functional Requirement 24

- **Order Notification to Employees:** Once a new order is placed, the system will automatically notify employees assigned to order management. manage user roles such as Administrator, Client, and Employee.

3.3 Non-functional requirements

3.3.1 NFR01 Scalability

- Design the application to handle significant growth in the number of users and products in the store, considering that it will be used simultaneously by customers and staff. Ensure optimal performance even with a considerable increase in platform load, where you must select and implement an ideal tool for database scalability, ensuring that it can efficiently manage the increase in transactions and data without compromising system performance

3.3.2 NFR02 Usability

- Develop an intuitive and easy-to-use user interface for end users. Guarantee accessibility for users with different levels of technological skill, being friendly to anyone who needs to use the system. tención de consultar y subir información pertinente para cada una de ellas.

3.3.3 NFR03 Fault Tolerance

Software Requirements Specification

- Develop an intuitive and easy-to-use user interface for end users. Guarantee accessibility for users with different levels of technological skill, being friendly to anyone who needs to use the system.

3.3.4 NFR04 Security

- Implement robust security measures to protect user information and transactions. The system must not allow user or client data to be public

3.3.5 NFR05 Disponibility

- Implement robust security measures to protect user information and transactions. The system must not allow user or client data to be public

3.3.6 NFR06 Maintainability

- The system must allow adding new functionalities and have adequate documentation that allows changes to be made within it if necessary.

3.3.7 NFR07 Rendering Engine

- The system works in both Windows browsers such as Chrome, as well as iOS browsers such as Safari, corresponding to the most used operating systems within the Hardware Store, it must be able to display all its contents, without data loss or failures. Visuals, regardless of the browser used, must also be able to send updates and patches without affecting its performance.