PROWASH 365

SOFTWARE CONFIGURATION MANAGEMENT

BASELINE

PRESENTED BY

ING. DANIEL EDUARDO ZIPA BARRERO

UNIVERSIDAD DE GUADALAJA

CENTRO CUVALLES

AMECA

2026

TABLE OF CONTENTS

INTRODUCTION

ProWash365 is a company dedicated to providing interior and exterior house cleaning services, with the goal of delivering high-quality and reliable services to its clients. In order to improve the way these services are offered and managed, the need arises to create a digital environment that enables the organization and digitalization of the business model.

To achieve this, a software system will be developed consisting of a mobile application aimed at users, through which they will be able to register, manage their properties, request cleaning services or purchase memberships, request quotations, receive notifications, and make secure payments.

Additionally, the system will include a CRM exclusively for administrative use, which will allow administrators to manage users, services, membership packages, requests, pricing, on-site appointments, and advertising content. This administrative module will be intended solely for the internal management and control of the company.

With the implementation of this system, ProWash365 aims to facilitate interaction with its clients, optimize service administration, and establish a technological foundation that supports the company's growth and continuous improvement.

FUNCTIONAL REQUIREMENTS

RF01: The system must allow the registration of new users using email address, mobile phone number, and password.

RF02: The system must allow users to log in to the application.

RF03: The system must allow users to log out of the application.

RF04: The system must send a verification code to the user's email address to confirm it.

RF05: The system must request and validate the verification code to confirm the email address.

RF06: The system must send a verification code to the user's mobile phone number to confirm it.

RF07: The system must request and validate the verification code to confirm the mobile phone number.

RF08: The system must allow a registered user to edit their profile picture.

RF09: The system must allow a registered user to change their username.

RF10: The system must allow a registered user to change their password.

RF11: The system must allow users to delete their account.

RF12: The system must display the terms and conditions for using the application.

RF13: The system must allow a registered user to register a maximum of three houses.

RF14: The system must allow editing a previously registered house.

RF15: The system must allow deleting a previously registered house.

RF16: The system must display predefined membership packages to the user.

RF17: The system must allow users to customize a package according to their preferences.

RF18: The system must allow users to request an estimated quotation based on the selected predefined or customized package.

RF19: The system must display individual services.

RF20: The system must allow initiating a service through a request that will be registered with a unique identifier.

RF21: The system must notify administrators and the user about the service request, displaying the identifier via email.

RF22: The system must allow a communication channel to schedule an on-site appointment and generate the service.

RF23: The system must display the price adjustment of the service or membership quotation.

RF24: The system must notify the client about the price adjustment of the service or membership.

RF25: The system must generate a payment order when the price of the service or membership is modified.

RF26: The system must allow users to make payments through a payment gateway.

RF27: The system must display the details of the membership or service once the user has made a purchase.

RF28: The system must display company advertisements.

RF29: The system must allow an administrator to log in to the CRM.

RF30: The system must allow an administrator to log out of the CRM.

RF31: The system must display all registered administrators.

RF32: The system must allow creating an administrator.

RF33: The system must allow editing an administrator.

RF34: The system must allow deleting an administrator.

RF35: The system must display all users registered in the application.

RF36: The system must allow editing a user.

RF37: The system must allow deleting a user.

RF38: The system must display all advertising notices shown in the application.

RF39: The system must allow creating advertising notices for the application, either as an image, image carousel, or video.

RF40: The system must allow editing an advertising notice in the application.

RF41: The system must allow deleting an advertising notice from the application.

RF42: The system must display all registered services.

RF43: The system must allow registering a service.

RF44: The system must allow editing a service.

RF45: The system must allow deleting a service.

RF46: The system must allow grouping services to create a predefined membership package.

RF47: The system must display all service order requests made by users.

RF48: The system must allow scheduling appointments to validate the price of the generated order.

RF49: The system must allow editing the final price for the acquisition of a service or membership.

RF50: The system must display all details of the services registered by users.

NON-FUNCTIONAL REQUIREMENTS:

RNF01: The system must be available 24 hours a day, 7 days a week, except during scheduled maintenance periods.

RNF02: The system must respond to the main user operations within a maximum time of 2 seconds.

RNF03: The system must support at least 1,000 concurrent users without performance degradation.

RNF04: The system must ensure the confidentiality of information through authentication and authorization mechanisms.

RNF05: The system must encrypt user passwords before storing them in the database.

RNF06: The system must comply with best security practices for the protection of personal data.

RNF07: The system must allow secure password recovery.

RNF08: The system must log important system events (login, payments, price changes).

RNF09: The system must be compatible with modern web browsers (Chrome, Firefox, Edge, Safari).

RNF10: The system must be accessible from mobile devices with different screen sizes.

RNF11: The system must provide an intuitive and easy-to-use interface for non-technical users.

RNF12: The system must allow scalability to add new functionalities without affecting existing ones.

RNF13: The system must perform automatic data backups on a periodic basis.

RNF14: The system must ensure the integrity of stored data.

RNF15: The system must handle failures in a controlled manner and display clear error messages to users.

RNF16: The system must allow integration with external services, such as payment gateways and messaging services.

RNF17: The system must comply with maintainability principles and facilitate software updates.

RNF18: The system must allow traceability of requests and orders through unique identifiers.

RNF19: The system must be protected against unauthorized access to the administrative CRM.

RNF20: The system must ensure the availability of advertising content without affecting application performance.

REQUIREMENTS ANALYSIS

MODULES:

- User Management (Mobile Application)

Requirements RF01 to RF12 define the necessary functionalities for user account management within the mobile application. The system must allow user registration using an email address, mobile phone number, and password, as well as the validation of this information through verification codes.

Additionally, the system must support user profile management, including the editing of personal information, password changes, and account deletion, ensuring proper control and security of user data.

- House Management

According to requirements RF13 to RF15, the system must allow each user to register up to a maximum of three houses, which may be edited or deleted. This restriction is intended to facilitate the organization of cleaning services and maintain clear control over the serviced properties.

- Services and Memberships

Requirements RF16 to RF19 establish that the system must display individual services and predefined membership packages, as well as allow the customization of these packages.

Users must be able to request an estimated quotation before purchasing a service or membership, which enhances transparency and supports informed decision-making.

- Service Request and Management

Requirements RF20 to RF28 define the core business workflow. The system must allow users to initiate service requests that will be registered with a unique identifier, which will be notified to both users and administrators via email.

Additionally, the system must provide a communication channel to schedule an on-site appointment, validate the service, and adjust the final price. Users must be notified of any price adjustment and be able to complete the payment through a payment gateway.

Once the purchase has been completed, the system must display the details of the contracted service or membership.

- Mobile Application Advertising

Requirement RF28 establishes that the system must display company advertisements within the mobile application, allowing users to be informed about promotions, services, or important announcements.

- Administrative Management (CRM)

Requirements RF29 to RF50 describe the functionalities of the CRM, which will be intended exclusively for administrative use.

This module will allow full management of administrators, users, services, membership packages, service order requests, on-site appointments, final pricing, and advertising content.

The CRM provides a centralized view of business operations and enables effective administrative control of ProWash365.

NON-FUNCTIONAL REQUIREMENTS:
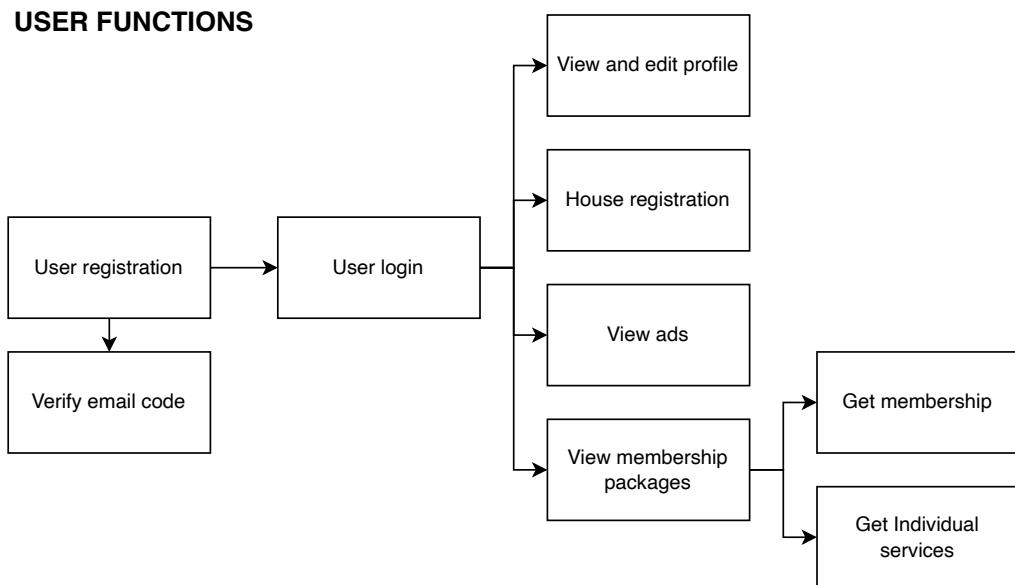
Non-functional requirements complement the system's functionality and ensure its overall quality:

- Performance: The system must respond within acceptable timeframes, even with multiple concurrent users.
- Security: Personal data must be protected, passwords must be encrypted, and access to the administrative CRM must be restricted.
- Usability: The mobile application must be intuitive and easy to use for non-technical users.
- Availability: The system must be continuously available, with proper error handling mechanisms.
- Scalability: The architecture must allow the addition of new functionalities and support business growth.
- Integration: The system must be able to integrate with payment gateways and notification services.
- Maintainability: The system must facilitate updates and maintenance without affecting overall system operation.
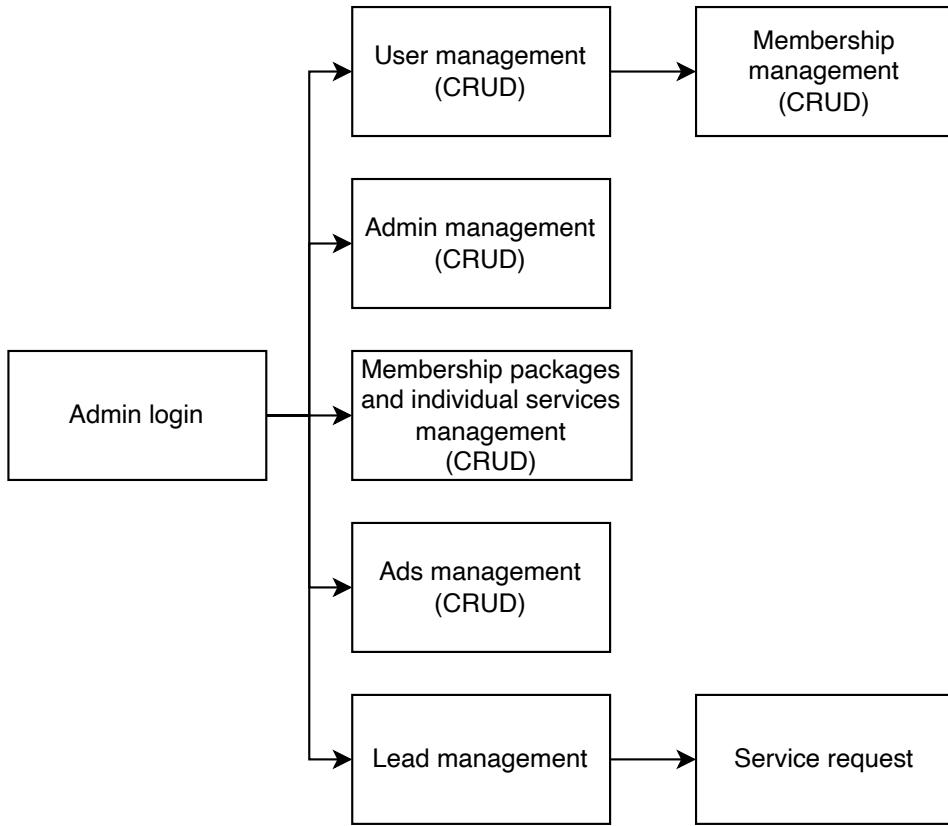
DESIGN

The system must be built for a mobile platform, including both iOS and Android operating systems. And the system management interface must be built for the web.
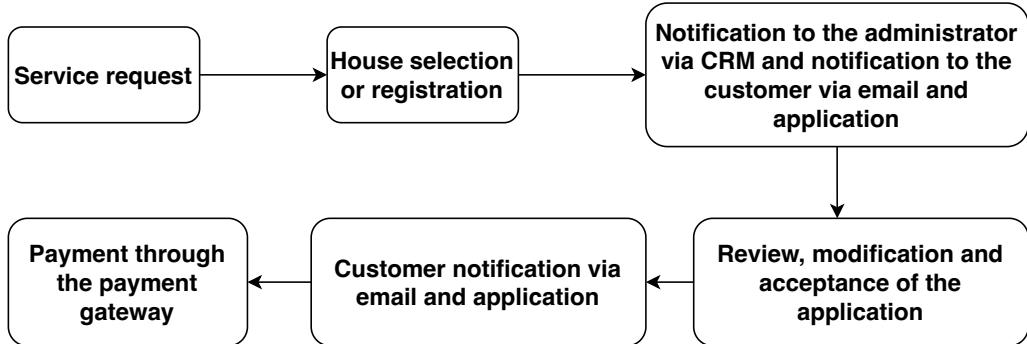
The following images show the administrator and user functions and the flow with which the functions can be executed.

USER FUNCTIONS

```
                                          ┌──────────────────────┐
                                          │ View and edit profile │
                                          └──────────────────────┘

                                          ┌──────────────────────┐
                                          │  House registration   │
                                          └──────────────────────┘

┌────────────────┐    ┌──────────────┐    ┌──────────────────────┐
│ User registration │─→│  User login  │─→ │       View ads       │
└────────────────┘    └──────────────┘    └──────────────────────┘
         │                                                          ┌──────────────────┐
         ↓                                                      ┌─→ │  Get membership  │
┌────────────────┐                        ┌──────────────────┐  │   └──────────────────┘
│ Verify email code │                     │ View membership   │─┤
└────────────────┘                        │    packages       │  │   ┌──────────────────┐
                                          └──────────────────┘  └─→ │  Get Individual  │
                                                                    │     services     │
                                                                    └──────────────────┘
```

ADMIN FUNCTIONS

```
                          ┌─────────────────┐        ┌─────────────────┐
                     ┌───▶│ User management │───────▶│   Membership    │
                     │    │     (CRUD)      │        │   management    │
                     │    └─────────────────┘        │     (CRUD)      │
                     │                               └─────────────────┘
                     │    ┌─────────────────┐
                     ├───▶│ Admin management│
                     │    │     (CRUD)      │
                     │    └─────────────────┘
┌─────────────┐      │    ┌─────────────────┐
│             │      │    │Membership packages
│ Admin login │──────┤───▶│and individual services
│             │      │    │   management    │
└─────────────┘      │    │     (CRUD)      │
                     │    └─────────────────┘
                     │    ┌─────────────────┐
                     ├───▶│ Ads management  │
                     │    │     (CRUD)      │
                     │    └─────────────────┘
                     │    ┌─────────────────┐        ┌─────────────────┐
                     └───▶│ Lead management │───────▶│ Service request │
                          └─────────────────┘        └─────────────────┘
```

PRINCIPAL PROCESS:

```
┌─────────────┐   ┌─────────────┐   ┌─────────────────────┐
│   Service   │──▶│House selection──▶│Notification to the  │
│   request   │   │or registration│  │administrator via CRM│
└─────────────┘   └─────────────┘   │and notification to  │
                                    │the customer via     │
                                    │email and application│
                                    └─────────────────────┘
                                               │
                                               ▼
┌─────────────┐   ┌─────────────────┐   ┌─────────────────┐
│Payment through│◀─│Customer notification◀│Review, modification│
│the payment  │   │via email and    │   │and acceptance of │
│gateway      │   │application      │   │the application  │
└─────────────┘   └─────────────────┘   └─────────────────┘
```

SYSTEM ACTORS:

- User (Client): A person who uses the mobile application to register an account, manage their houses, request cleaning services, or purchase memberships.
- Administrator: ProWash365 staff who access the CRM to manage users, services, memberships, service requests, pricing, and advertising content.
- External Payment System: A third-party service responsible for processing payments made by users.
- Messaging Services: External systems used to send emails and SMS messages for verification and notifications.

PERSONNEL

For the development of this project, we need the next personnel:

- Senior full-stack developer: This profile requires knowledge in mobile, front-end, and back-end development, especially with the language TypeScript, using Node.js, Express, React, Next.js, and React Native. Also, knowledge in databases using PostgreSQL and experience with payment gateways like Stripe.

- Junior full-stack developer: For the project, we need 2 of this profile. This requires knowledge in mobile, front-end, and back-end development, especially with the language TypeScript, using some of the following technologies: Node.js, Express, React, and Next.js.

BUDGET

The project duration is estimated at 3 months.

Senior	40,000 mxn	120,000 mxn
Junior	15,000 mxn	45,000 mxn
Junior	15,000 mxn	45,000 mxn

The total estimated in development personnel is 210,000 mxn.

CLIENT GENERAL DESCRIPTION

The client of this project is an entrepreneur located in the United States, who is starting his business. The company, called ProWash, is a small business with less than five employees. Because of the size of the company, the client is directly involved in the administration and supervision of the main operations.

CLIENT PROFILE AND IMPACT ON THE SYSTEM

Even though ProWash is a small company, its customers are usually people who have large and expensive houses in the United States. This type of customer normally expects a professional service and a modern digital experience.

Because of this, the system must focus on being easy to use, fast, and reliable. Also, since the business is starting and growing, the platform should be scalable, allowing new functionalities in the future. Finally, due to the small number of employees, the system should include automation and simple workflows to help the daily operation.