Software Requirement Specification Document for Qanaa Pharmacy

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Table 1: Document version history

Version	Date	Reason for Change
1.0	18-Mar-2024	SRS First version's specifications are defined.

GitHub: https://github.com/SWE-Project-2023/App

Contents

Abstract

The Qanaa Pharmacy Web Application project is a forward-thinking solution that leverages HTML, CSS, JavaScript, SpringBoot, EJS, and SQL to redefine healthcare access. It addresses the demand for convenient and efficient medication ordering, health information access, and customer engagement while streamlining internal pharmacy operations. Key features include a user-friendly interface for prescription ordering, expert health insights, and seamless interactions. With this innovative technology stack, our development approach ensures a seamless and secure user experience. This project promises to significantly impact how our community accesses pharmaceutical services, providing a visionary solution to modern healthcare needs.

1 Introduction

1.1 Purpose of this document

The SRS document's primary purpose is to define the scope and goals of the Qanaa Pharmacy Web Application. It guides our development team in constructing an advanced online medicine platform. By outlining requirements, applications, and technologies, it fosters a shared vision among stakeholders and developers. Adherence to these requirements throughout development ensures alignment with Qanaa Pharmacy's healthcare transformation mission. In a broader business context, this SRS document enhances the customer experience and pharmacy operations, paving the way for innovation.

1.2 Scope of this document

This Software Requirements Specification (SRS) document outlines the scope for the Qanaa Pharmacy Web Application. It comprehensively defines the boundaries and expectations for the website's development, encompassing features such as medication ordering and internal pharmacy operations streamlining. However, it's important to note that the document does not include the development of a mobile application version. Integrations beyond the chosen technology stack and specified features are also outside the document's scope, setting expectations for the project's detail and requirements.

1.3 Business Context

In an ever-evolving pharmacy landscape, the Qanaa Pharmacy Application operates within a dynamic business context. The pharmaceutical industry is witnessing a profound shift towards accessible and convenient healthcare solutions. Qanaa Pharmacy aims to address these changing market trends by establishing an innovative online platform that caters to the evolving needs of its customers. The website will provide a user-friendly interface for ordering pharmaceutical products, accessing vital health information, and engaging with pharmacy services seamlessly. This strategic move aligns with the broader industry shift towards digital health, aiming to bridge the gap between healthcare seekers and trusted pharmacies. By fostering convenience and reliability through a secure online experience, the Qanaa Pharmacy Web Application integrates seamlessly with Qanaa Pharmacy's strategic vision to lead the way in accessible and customer-centric healthcare services.

2 Similar Systems

2.1 Academic

- In this article author Alwon, B. M highlights the evidence that suggests high risks from purchasing medicine online, the author mentions that using logos may provide some level or assurance but there must be other indicators to provide the safety of these websites. It's objective is to identify characteristics of online pharmacies which are related to whether websites are regulated or non-regulated.It mentions that identified websites were screened for regulatory status, adherence to regulatory standards. Characteristics of regulated and non-regulated websites were compared to identify differences that could be used to improve patient safety [1]

- In this research paper it's aim was to study an up-to-date and comprehensive review of the scientific literature focusing on the broader picture of online pharmacies by scanning several scientific and institutional databases, with no publication time limits. It concludes that online pharmacies are an important phenomenon that is continuing to spread, despite partial regulation, due to intrinsic difficulties linked to the impalpable and evanescent nature of the Web and its global dimension. To enhance the benefits and minimize the risks of online pharmacies, a 2-level approach could be adopted. The first level should focus on policy, with laws regulating the phenomenon at an international level. The second level needs to focus on the individual. This approach should aim to increase health literacy, required for making appropriate health choices, recognizing risks and making the most of the multitude of opportunities offered by the world of medicine 2.0. [2]

- In this article the author talks about the purchasing experience and begins with the statistic that thirty-seven website pharmacies offered prescription drugs without requiring an original prescription. All of the NABP approved and "legally compliant" websites, except one, either demanded original prescriptions or (for two websites) accepted faxed prescriptions but followed-up with the prescribing physician to establish provenance. These website pharmacies appeared to focus on building a long-term relationship with the consumer. [3] Indeed, seven of the 18 websites described by NABP as "recommended" would not even sell prescription drugs to an individual unless he or she was connected with a medical insurer. All of the "not recommended" and "highly not recommended" website pharmacies claiming to require prescriptions accepted faxed or emailed copies without contacting the prescribing physician to confirm. One website openly advertised the provision of drugs off prescription. Other website pharmacies offered to supply drugs after the consumer filled out an online evaluative questionnaire, which varied in length and complexity.

2.2 Business Applications

- Misr Online Pharmacies [4] is a digital platform designed to provide a wide range of pharmaceutical products and healthcare services to consumers in a convenient and secure manner.

3 System Description

3.1 Problem Statement

The Qanaa Pharmacy Web Application addresses critical challenges within the pharmaceutical domain. Currently, customers face hurdles when attempting to conveniently access medications, healthcare information, and pharmacy services. In the existing system, the absence of a user-friendly online platform complicates prescription ordering and impedes access to vital health insights. Furthermore, internal pharmacy operations often lack the efficiency needed to deliver top-notch customer service. These issues underscore the need for the proposed system, which aims to provide a seamless online experience, streamline pharmacy operations, and empower customers in their healthcare journey. The Qanaa Pharmacy Web Application intends to revolutionize the way pharmaceutical services are accessed, enhancing convenience, reliability, and customer engagement in response to these pressing challenges.

3.2 System Overview

The Qanaa Pharmacy Website is a comprehensive online pharmaceutical platform that consists of multiple key components. The primary components include a user-friendly web interface for customers to browse, search, and order medications. It also offers secure user authentication, enabling users to create and manage profiles. The system includes a robust database powered by SQL for managing medication inventory and user accounts.

Key features and functionalities encompass prescription ordering, health information access, secure payment processing, and a dynamic search function to find products efficiently. Additionally, the system provides pharmacy staff tools for order management, inventory control, and seamless customer engagement. Altogether, the Qanaa Pharmacy Web Application aims to deliver a user-centric, secure, and efficient online pharmacy experience, bridging the gap between healthcare seekers and pharmaceutical services in the digital age.

3.3 System Scope

The Qanaa Pharmacy Website system is designed to offer a seamless online pharmaceutical experience while addressing the following key objectives:

- Prescription Ordering: The system will allow customers to conveniently order medications online.
- Health Information Access: Customers can access vital health information and insights through the platform.
- Secure Payment Processing: The system will integrate secure payment processing for a seamless user experience.
- Dynamic Search Function: Users will have access to a robust search feature to efficiently find pharmaceutical products.

Internal Pharmacy Operations: The system will provide tools for pharmacy staff to manage orders, control inventory, and engage with customers.

However, it's important to clarify that the system will not include:

- Mobile Application Development: The development of a mobile application version is outside the defined scope.

3.4 System Context

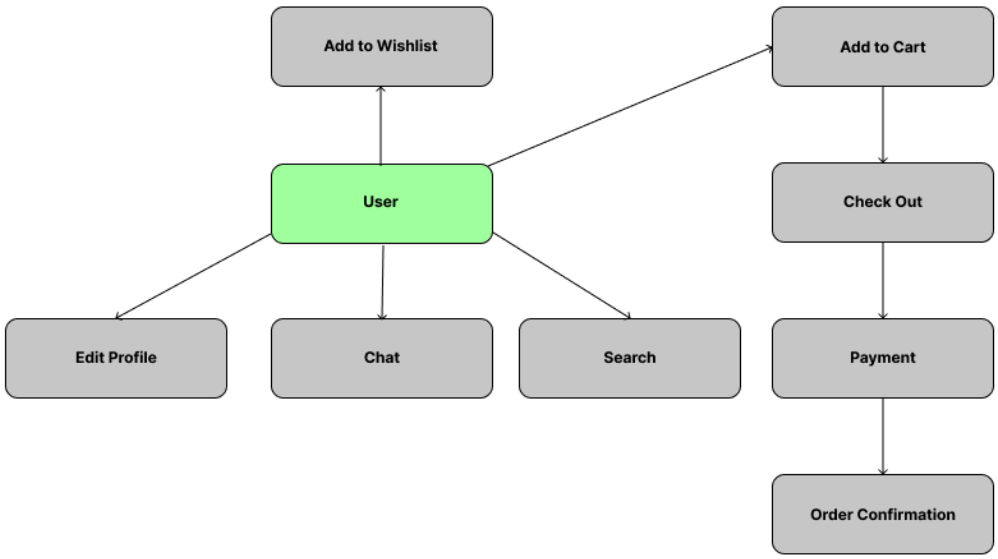

Figure 1: Contextual view of the system within its environment

3.5 Objectives

The objectives of the Qanaa Pharmacy Web Application specify the desired outcomes and benefits of implementing the system

- Efficient Medication Management and Ordering
- Optimized Pharmacy Operations
- Enhanced User Security and Privacy
- Efficient Product Search and Information Retrieval
- Fostering Customer Convenience

3.6 User Characteristics

1. Patient or Customer Users: Patients or customers use the system to order medications and access health information, expecting a user-friendly interface and secure, convenient ordering.
2. Pharmacy Staff Users: Pharmacy staff manage orders and inventory, relying on efficient tools to enhance internal operations and customer engagement.
3. System Administrators: Administrators maintain the system, requiring tools for system upkeep, user access management, and data security.
4. Guest Users: Guest users may browse and explore the application without creating accounts, making the platform accessible to potential customers seeking information before registration.

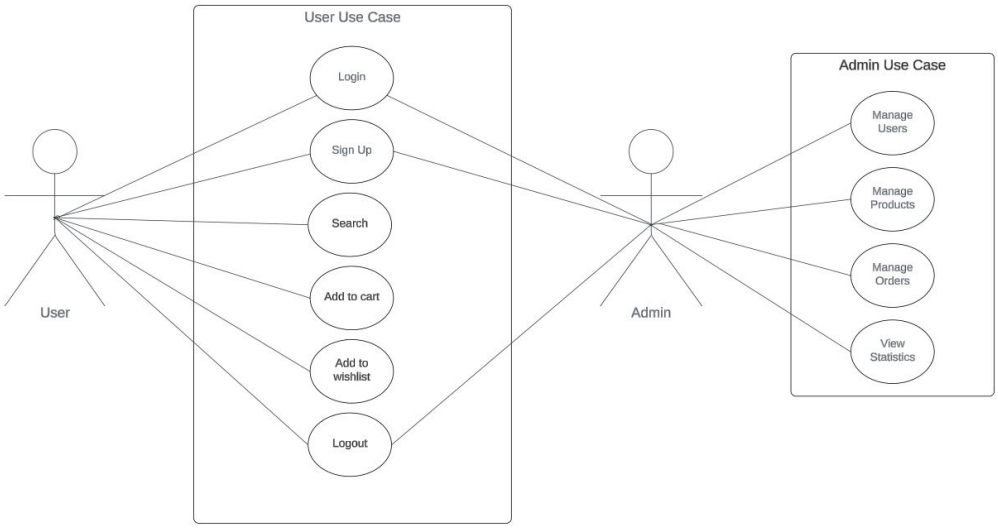

Figure 2: Overview of the system's functions

4 Functional Requirements

4.1 System Functions

- ID:01 Users can "Add to Wishlist" by saving products for future reference.
- ID:02 Users can "Add to Cart" by placing products in their shopping cart for purchase.
- ID:03 Users can "Check Out" to complete their purchase.
- ID:04 Users have the ability to "Edit Profile" by modifying their profile information.
- ID:05 Users can "Search" for products or information within the system.
- ID:06 Users can make "Payment" securely for their purchases.
- ID:07 The admin can "CRUD User" accounts.
- ID:08 The admin can "CRUD Orders".
- ID:09 The admin has control over "CRUD Products" allowing the addition, modification, and removal of products.
- ID:10 The admin can "View Statistics" to access system statistics and analytics, gaining insights into system performance and user behavior.

4.2 Detailed Functional Specification

Table 2: Register Function Requirements

Function	Register
ID	F01
Priority	High
Critical	10/10
Description	Allow user register to the system
Input	User Data
Action	Check whether user already registered or not
Output	Alert with registration status
Precondition	User not already registered
Post-condition	User can buy products
Dependencies	-
Risk	Internet connection is required

Table 3: Login Function Requirement

Function	Login
ID	F02
Priority	High
Critical	10/10
Description	Allow registered users to log into the system
Input	User Credentials
Action	Verify the provided credentials against the user database
Output	Successful login or login failure alert
Precondition	User is registered and not already logged in
Post-condition	User gains access to their account and system features
Dependencies	User registration, Database functionality
Risk	Internet connection is required

Table 4: Order Placement Function Requirement

Function	Order Placement
ID	F03
Priority	High
Critical	10/10
Description	Allow users to place orders for products.
Input	Selected products, shipping details, payment information.
Action	Validate product selection, shipping details, and payment information. Create and confirm the order in the system.
Output	Confirmation of the placed order, order ID, and payment receipt.
Precondition	User is logged in and has selected products for purchase.
Post-condition	Products are reserved, payment is processed, and the order is added to the system.
Dependencies	User login, Product Listing, Payment Processing.
Risk	Internet connection is required, payment security concerns.

Table 5: Product Listing Function Requirement

Function	Product Listing
ID	F04
Priority	High
Critical	9/10
Description	Allow products to be listed in the system for users to view and purchase.
Input	Product details, including name, description, price, images, and attributes.
Action	Validate and upload product information to the system. Display products to users.
Output	Displayed product listings with images, descriptions, and pricing.
Precondition	Admin user is logged in and has product details for listing.
Post-condition	Products are viewable and available for users to purchase.
Dependencies	Admin User Management, Database Functionality.
Risk	Internet connection is required, product data accuracy.

Table 6: Create Product Function Requirement

Function	Create product "CRUD products"
ID	F09
Priority	High
Critical	10/10
Description	Allow admin to create a new product so that users can be able to purchase it.
Input	Product details, including name, description, price, images, and attributes.
Action	A new product object is created in the database holding the attributes the admin entered.
Output	Confirmation message of the creation of the product.
Precondition	The product not existing.
Post-condition	Product is added to the database and available for users to purchase.
Dependencies	Admin Product Management, Database Functionality.
Risk	Internet connection is required, product data accuracy.

Table 7: Update Product Function Requirements

Function	Update Product "CRUD products"
ID	F09
Priority	High
Critical	10/10
Description	Allow admin to edit product details
Input	Product details, including name, description, price, images, and attributes.
Action	Save updated inputs to the database and update the system.
Output	Confirmation of the data saved to the database.
Precondition	Product having some wrong or outdated details.
Post-condition	System updates with the new product details.
Dependencies	Admin Login, Database Functionality.
Risk	Internet connection is required, product data accuracy.

5 Design Constraints

5.1 Standards Compliance

To ensure the effective use and functionality of the Qanaa Pharmacy Web Application:

Users must have a stable and reliable internet connection to access and utilize the Qanaa Pharmacy Web Application. The application's performance and functionality are contingent upon internet availability.

5.2 Hardware Limitations

- RAM and CPU:

  Typically, a device with 4GB of RAM or more and a modern multi-core CPU should be sufficient for our web application.

- Screen Size:

  Our web application is responsive and adapts to various screen sizes, from small smartphone screens to large desktop monitors.

5.3 Other Constraints as appropriate

- The web application only supports the English language

6 Non-functional Requirements

- Performance: The Qanaa Pharmacy Web Application must provide a responsive user experience.
- Security: User data will be stored and transmitted securely using encryption protocols to protect sensitive information. Regular security testing will be conducted to identify vulnerabilities and maintain a high level of security.
- Availability: The system will be available 24/7, with scheduled maintenance windows communicated to users in advance.
- Usability: The user interface will be intuitive and user-friendly, catering to users of diverse technical expertise, enhancing accessibility and overall user satisfaction.
- Compatibility: The application will be compatible with the major web browsers (e.g., Chrome, Firefox, Safari, Edge) and common operating systems and devices.
- Regulatory Compliance: The application will adhere to healthcare and pharmaceutical regulations, ensuring that user data and health information are managed in compliance with legal requirements.
- Maintainability: The system code should be clearly written and easily read, along with providing comprehensive documentation for the website.
- Cost efficiency: Minimizing the cost associated with developing, designing and implementing and to be adapted with changes.

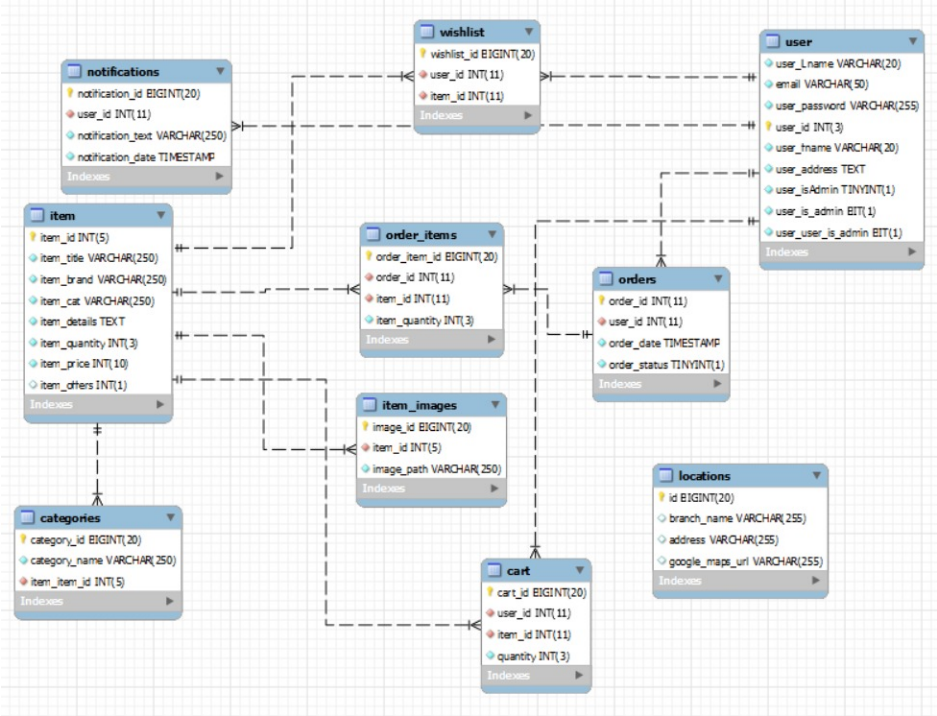

Figure 3: EER Diagram

7 Data Base

8 Preliminary Object-Oriented Domain Analysis

Initial Class Diagram

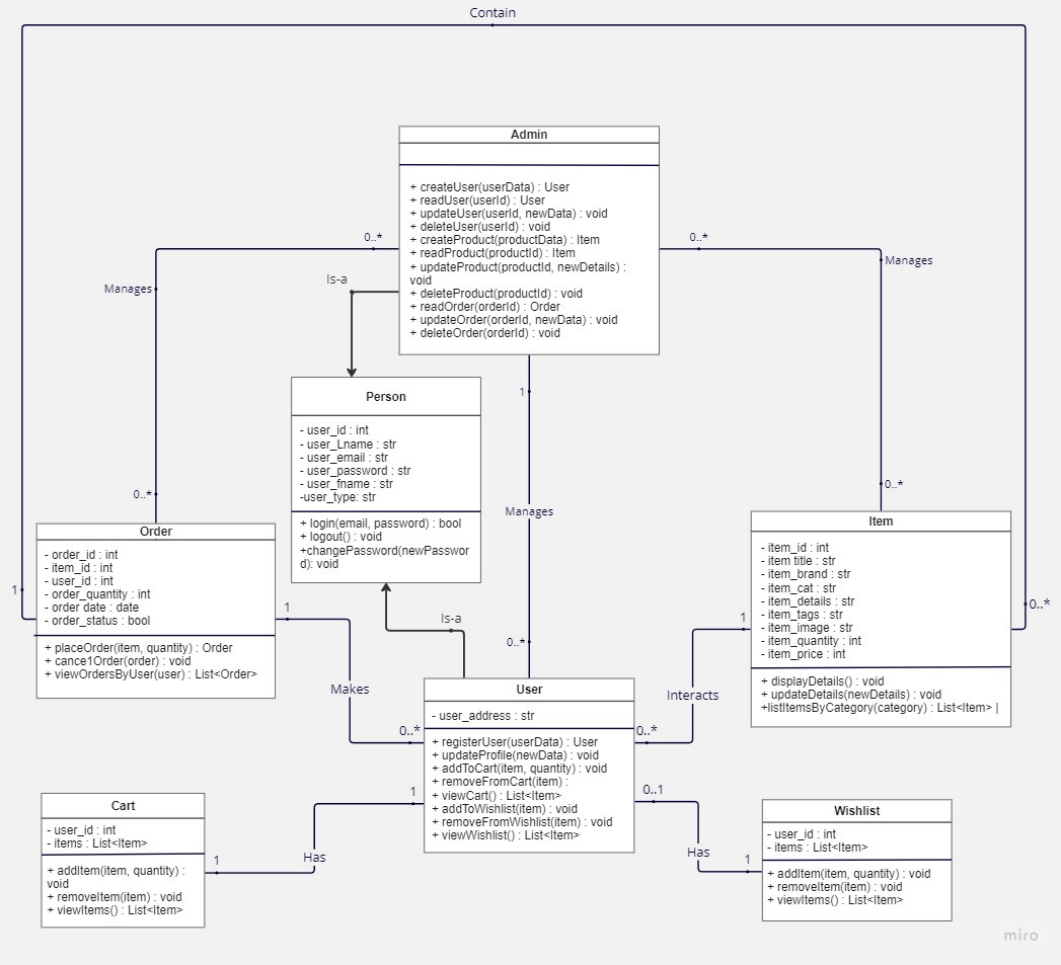

Figure 4: UML Class Diagram.

9 Operational Scenarios

Scenario 1: User Registration and Account Creation

- A new user accesses the e-commerce pharmacy platform and initiates the registration process.
- The user provides personal information and creates an account with a unique username and password.
- The system verifies the user's email address.
- The user's account is successfully created, and they can now log in and browse the catalog.

Scenario 2: Browsing and Product Search

- The user selects a product from the search results.
- The user views detailed information about the product, including usage instructions and side effects.
- The user decides to purchase the product and adds it to their shopping cart.

Scenario 3: Order Placement and Checkout

- The user reviews the items in their shopping cart.
- The user proceeds to the checkout page, where they enter their shipping address and payment details.
- The system calculates the total order cost, including taxes and shipping fees.
- The user confirms the order, and payment is processed securely.

Scenario 4: Product Reviews and Ratings

- After receiving the order, the user has the option to review and rate the purchased products and the overall shopping experience.
- The user's feedback is displayed on the product pages for other users to see.

10 Project Plan

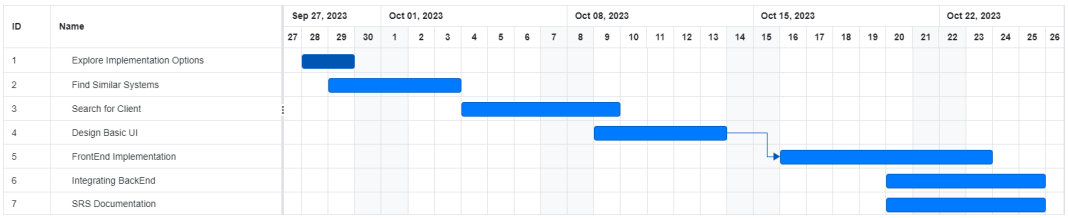

Figure 5: First Phase of Project Plan Gantt Chart

11 Appendices

11.1 Definitions, Acronyms, Abbreviations

SRS - Software Requirements Specification

HTML - Hypertext Markup Language

CSS - Cascading Style Sheets

JS - JavaScript

SQL - Structured Query Language

EJS - Embedded JavaScript

CPU - Central Processing Unit

RAM - Random Access Memory

URL - Uniform Resource Locator

HTTPS - Hypertext Transfer Protocol Secure

API - Application Programming Interface

IoT - Internet of Things

UX - User Experience

EERD - Enhanced Entity-Relationship Diagram

11.2 Supportive Documents

References

[1] Bassam M. Alwon, Greg Solomon, Farrukh Hussain, et al. "A Detailed Analysis of Online Pharmacy Characteristics to Inform Safe Usage by Patients". In: *International Journal of Clinical Pharmacy* 37.1 (2015), pp. 148–158. DOI: 10.1007/s11096-014-0056-1.

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[4] *Misr Pharmacies Misr Online*. Accessed: Insert Access Date. URL: https://misr-online.com/.