MyWelly

Smart Medical Appointment Platform

Connecting Healthcare in Morocco

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Software Requirements Specification

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1 Introduction

1.1 Purpose

This document specifies the software requirements for **MyWelly**, a smart medical appointment booking platform designed to connect patients with healthcare providers in Morocco.

The purpose of this Software Requirements Specification (SRS) document is to provide a comprehensive and detailed description of the MyWelly application. This document defines all functional and non-functional requirements of the system, serving as a contractual agreement between stakeholders and the development team.

The primary purpose of MyWelly is to streamline the appointment booking process between patients and doctors by providing a secure, user-friendly platform that enables real-time scheduling, patient feedback management, and secure data handling. The application aims to reduce waiting times, improve healthcare accessibility, and enhance patient satisfaction through transparent doctor reviews and efficient appointment management.

This document is intended for:

- Development team members who will implement the system
- Project managers for planning and tracking
- Healthcare professionals (doctors) who will use the platform
- Patients who will benefit from the service
- System administrators responsible for maintenance

1.2 Product Scope

1.2.1 Software Product Identification

MY WELLY is a comprehensive digital healthcare management ecosystem uniting patients, doctors and laboratories on a secure platform. Developed as a cross-platform mobile app (Android), it targets Morocco's healthcare sector.

1.2.2 What the System Will and Will Not Do

What the System WILL Do:

1. Maintain centralized database of patients, doctors, appointments, prescriptions, and medical records
2. Provide secure registration, multi-factor authentication, and encrypted health accounts
3. Enable doctor search by specialty, location, name
4. Allow real-time appointment booking, modification, cancellation with conflict detection
5. Send automated notifications (Email) for appointments
6. Enable doctors to manage prescriptions, patient data, and consultation history
7. Allow patients to access prescriptions, test results, and records anytime
8. Facilitate verified patient reviews and ratings

What the System Will NOT Do:

1. Offer telemedicine, video consultations, or remote diagnosis features
2. Process insurance claims or verify coverage
3. Handle direct payment processing
4. Provide pharmaceutical sales or medication delivery
5. Function as complete Hospital Management System
6. Display advertisements or send promotional notifications

1.2.3 User Classes and Benefits

Patients: Individuals seeking healthcare services.
Benefits: 24/7 appointment booking, secure medical record access, encrypted doctor communication, automated reminders, facility location verified reviews, medication availability checking.

Doctors: Healthcare professionals managing practice.
Benefits: Automated appointment management, digital prescription/patient data management, patient history access, availability control, and GDPR compliant storage.

Laboratories: Diagnostic testing facilities.
Benefits: Secure result upload/sharing, reduced administrative overhead, instant patient access, and enhanced doctor collaboration.

System Administrators: Technical staff managing platform.
Benefits: Centralized account management, content moderation, performance monitoring, security oversight and platform analytics.

1.3 Definitions, Acronyms, and Abbreviations

- **SRS:** Software Requirements Specification
- **FR/NFR:** Functional/Non-Functional Requirement

- **API:** Application Programming Interface
- **2FA:** Two-Factor Authentication
- **GDPR:** General Data Protection Regulation
- **REQ:** Requirement

1.4 References

https://github.com/alekhgupta1441/Hospital$_{M}$*anagement*$_{S}$*ystem/blob/main/Hospital A mobile App : Doctorlib*

2 Overall Description

2.1 Product Perspective

2.1.1 Business Case and Operational Concept

MY WELLY addresses inefficiencies in Morocco's healthcare system, such as long wait times, fragmented communication, and lack of digital records. It connects patients, doctors, laboratories, and administrators in a central digital platform, allowing 24/7 appointment booking, secure medical record access, digital prescriptions. The system reduces administrative workload, improves patient care, and increases overall healthcare efficiency.

2.1.2 How the System Fits into the Business Context

Doctors: *Replaces phone-based appointments and paper records with digital tools while maintaining doctor control.*

Laboratories: *Provides secure, instant result delivery.*

Patients: *Centralizes all healthcare interactions digitally while keeping traditional in-person care options.*

2.1.3 External Interfaces

System Interfaces:

MyWelly will integrate with external services through secure APIs developed in Python. Examples include email servers for appointment reminders and authentication APIs for secure login. Laboratories may upload test results through a secure web interface connected to the backend.

User Interfaces:

A responsive web interface will be provided, built with Python frameworks (Django or Flask). Patients, doctors, laboratories, and administrators will interact with the platform through web forms, dashboards, and notification pages. The design will support accessibility and be simple for users with limited digital literacy.

Hardware Interfaces:

No special hardware is required. The system will run on standard computers or smartphones with a web browser and internet connection.

Software Interfaces:

The backend will be fully implemented in Python (Django/Flask). A relational database (such as PostgreSQL or MySQL) will store appointments, medical records, and user accounts. The system will comply with Moroccan Data Protection Law and GDPR standards.

Communication Interfaces:

All communication between the Android app and the backend will be encrypted using HTTPS. HTTP will ensure secure client-server interactions, while FTP may be applied for downloading reports, bills, or large files. The app itself will handle data transfer directly without relying on a browser. Users will also receive updates and reminders via Email or in-app push notifications.

2.1.4 Constraints

Memory Constraints:

The application should run efficiently on servers with at least 2GB RAM and 100MB storage for the application code. Client devices only need a modern web browser and minimal memory.

Operational Constraints:

The system requires a stable internet connection for real-time appointment booking and record access. Offline use is limited to cached pages (if supported by the browser).

Site Adaptation Constraints:

MyWelly will be tailored for Morocco's healthcare system. The interface must support French and Arabic, comply with Moroccan Data Protection Law, and integrate smoothly into local healthcare practices.

2.2 Product Functions

This section illustrates the main functional modules of MyWelly through use case diagrams.

2.2.1 Sign Up

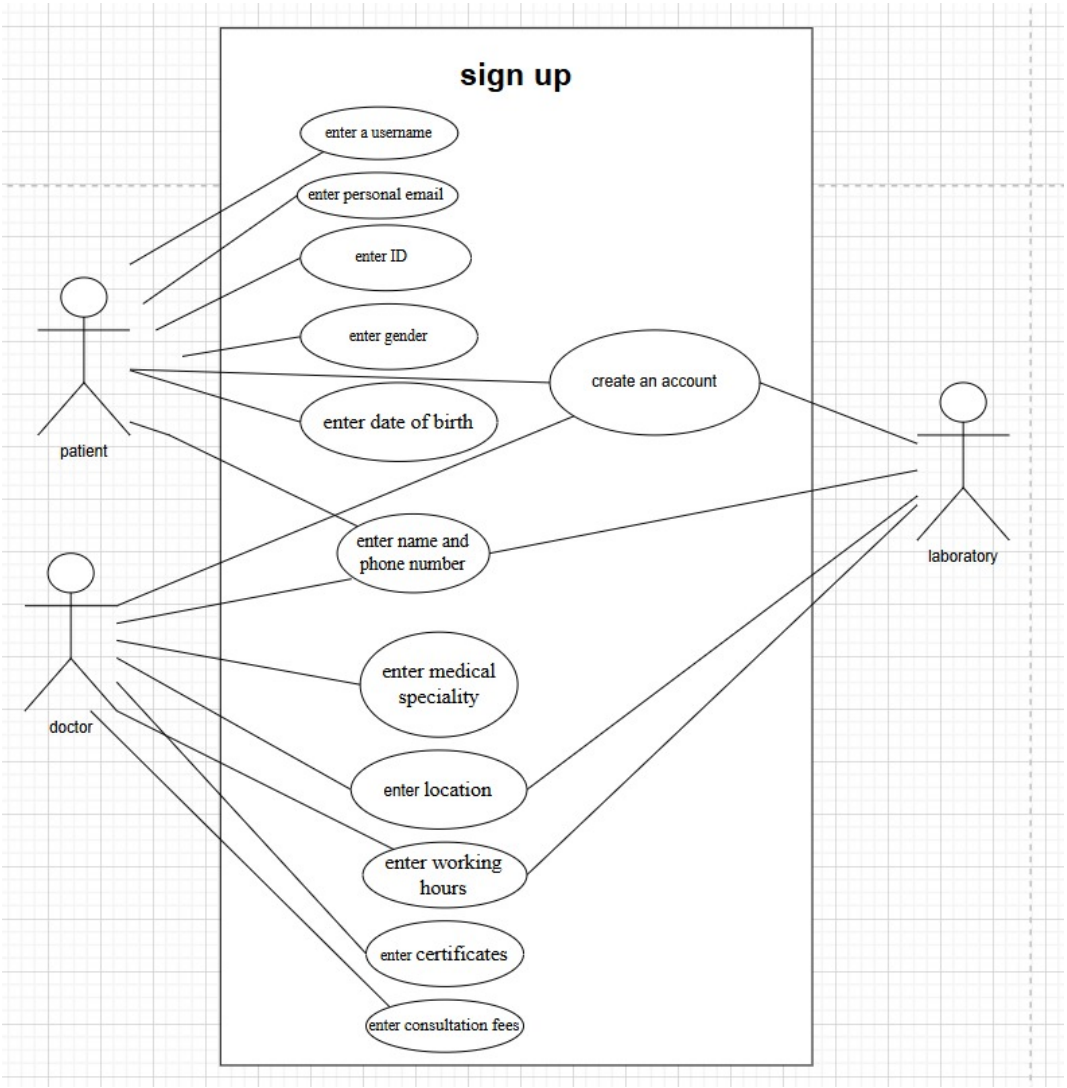

Figure 1: signup

The sign-up process allows three types of users (patients, doctors, and laboratories) to register on the platform with their specific required information.

2.2.2 Login

Users can securely log in using their email and password, with a "forgot password" recovery option available.

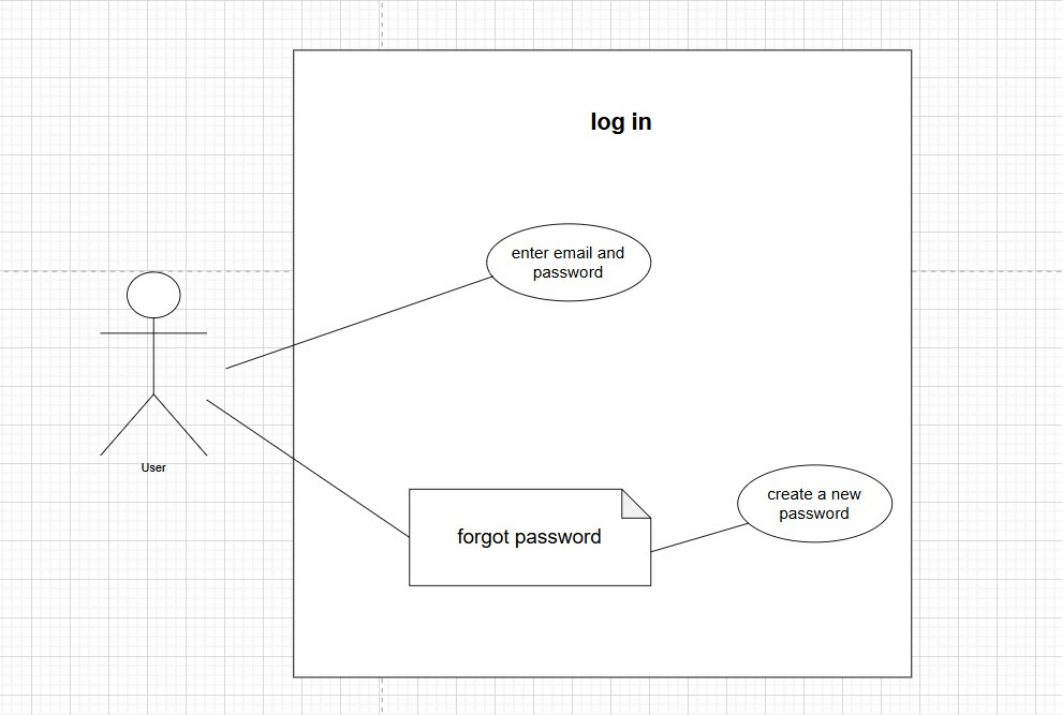

Figure 2: login

2.2.3 account management

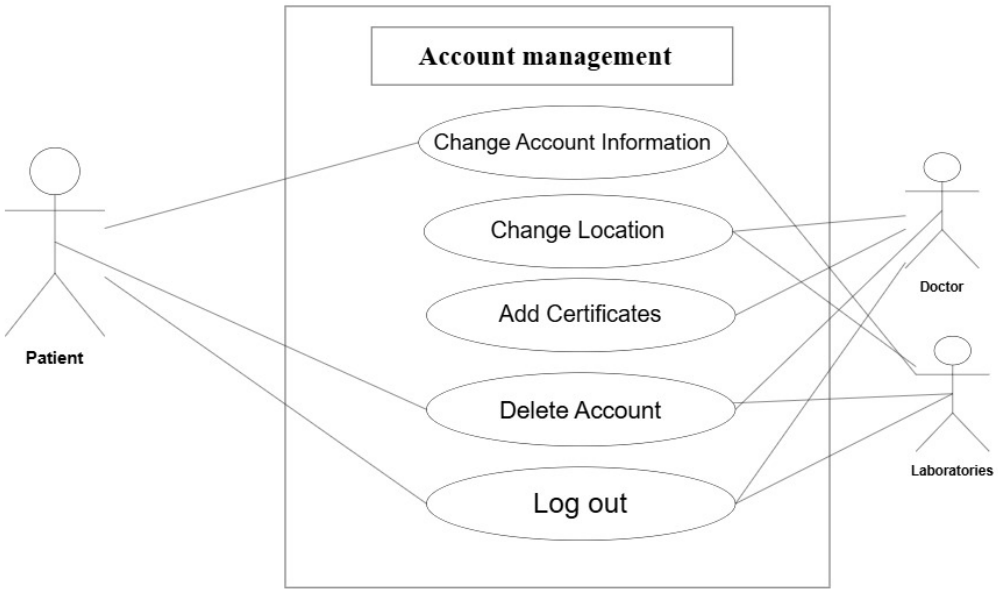

Figure 3: account management

All user types can manage their account information, including changing passwords, updating locations, and deleting accounts.

2.2.4 Browse and Search

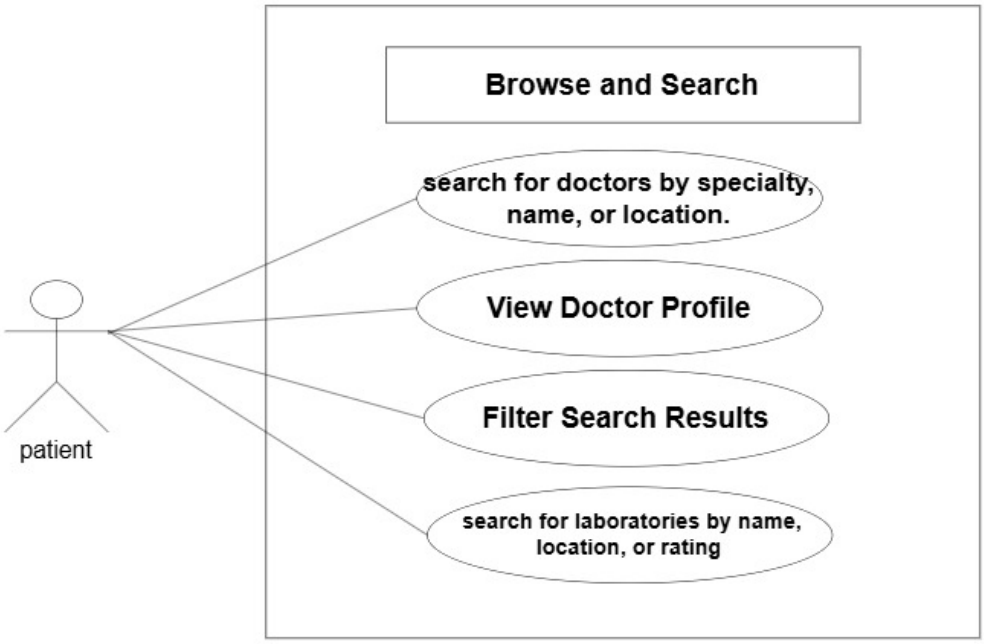

Figure 4: browse and search

Patients can search for doctors by specialty, name, or location, view detailed profiles, and filter search results. They can also search for laboratories.

2.2.5 Appointment management

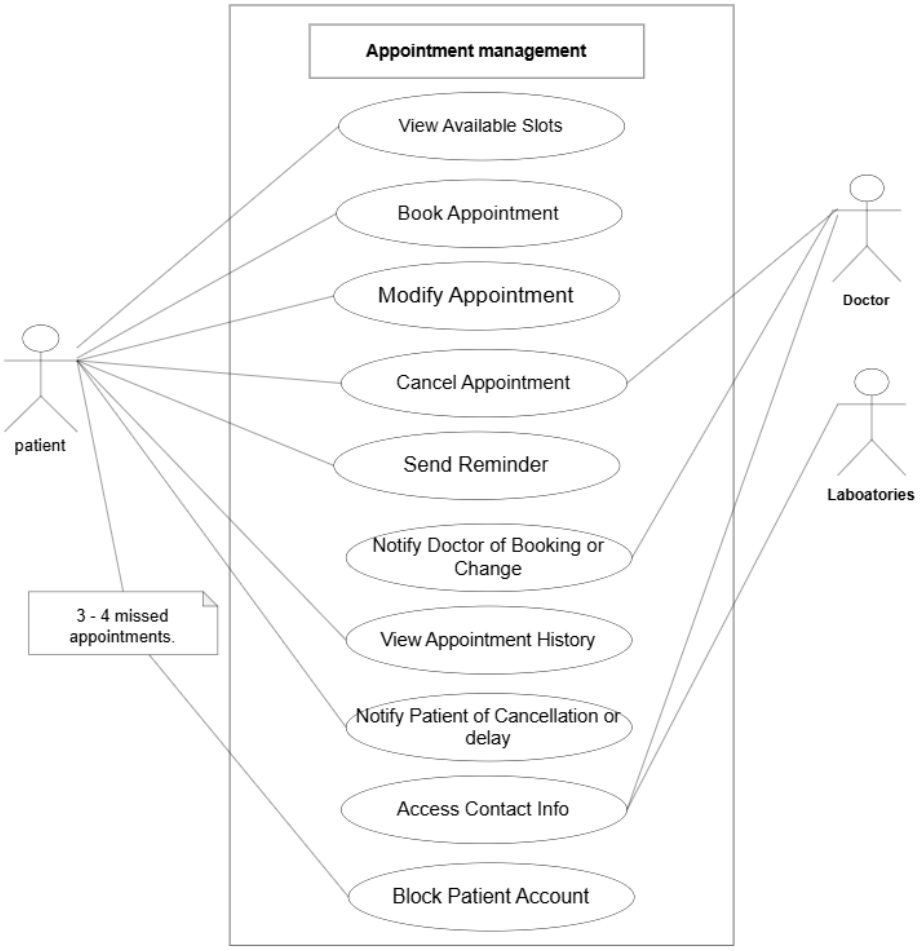

Figure 5: appointment management

Comprehensive appointment management features include booking, modifying, canceling appointments, viewing history, and automated notifications for all parties involved.

2.2.6 reviews

Patients can leave feedback and rate doctors and laboratories after their appointments using a 5-star rating system.

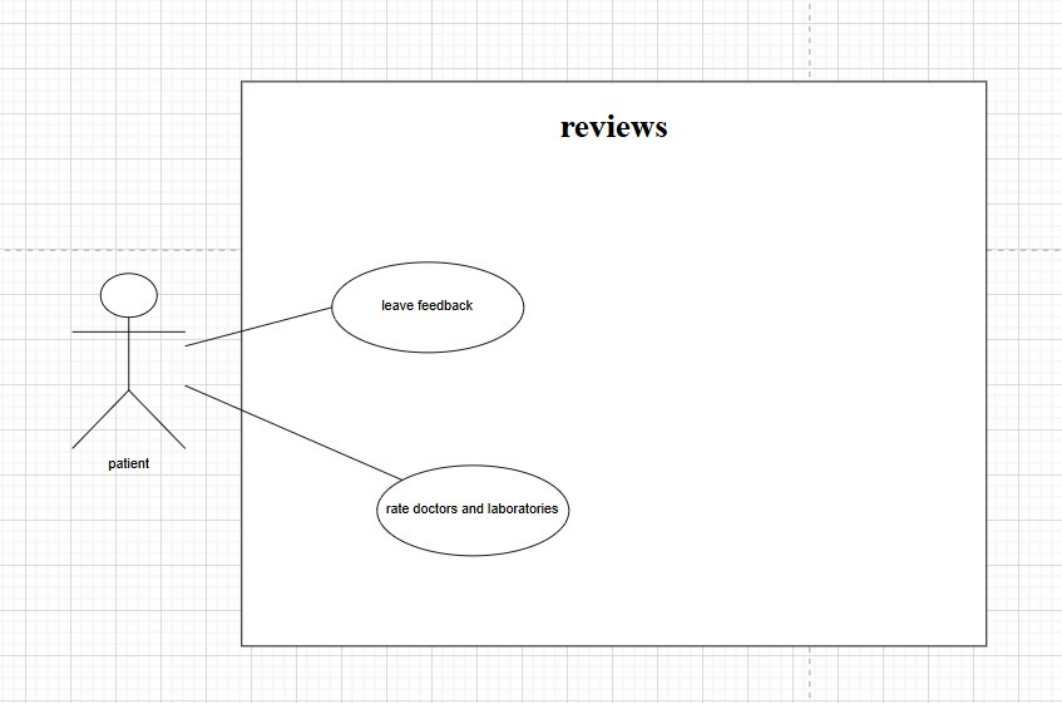

Figure 6: reviews

2.3 User Characteristics

Patients:

Patients usually have only basic smartphone knowledge. They can install applications, create accounts, book appointments, and receive notifications.

Doctors:

Doctors possess moderate to advanced technical skills. They are familiar with managing digital records, using scheduling tools, and handling medical data. Their capabilities include updating consultation notes, prescribing digitally, and managing patient history efficiently. They require reliable dashboards and secure storage of sensitive data.

Laboratories:

Laboratory staff are accustomed to working with medical information systems and data entry tools. Their main technical capability lies in uploading and sharing test results or medical reports securely.

System Administrators:

System administrators have technical expertise in databases, security, and system performance. They are capable of maintaining servers, ensuring data integrity, handling user accounts, and monitoring the system's compliance with data protection laws.

2.4 Constraints

- ***Regulatory:*** *Must comply with Moroccan Data Protection Law (09-08) and GDPR for secure handling of patient data.*
- ***Target Platform:*** *Android devices only, no iOS or smartwatch support.*
- ***Database:*** *Relational database (PostgreSQL/MySQL) with optimized queries and reliable backup/recovery.*

- ***Network/Protocols:*** *HTTPS/TLS for secure communication; HTTP for standard requests; FTP for large file transfers; stable internet required, offline access limited.*
- ***Development Standards:*** *Python backend (Django/Flask) and Android best practices; modular, maintainable, secure, and documented code.*
- ***Performance:*** *Support 10,000+ concurrent users, fast page load (¡3s), optimized memory (¡200MB runtime, ¡500MB cache).*

2.5 Assumptions and Dependencies

Assumptions:

- *Users (patients, doctors, and laboratory staff) have basic digital literacy and access to internet-enabled devices*
- *Python backend (Django/Flask) and relational database (PostgreSQL/MySQL) will function correctly and remain accessible during working hours*
- *Email servers used for notifications and reminders will work reliably*
- *Laboratories and healthcare providers will provide timely and accurate data*
- *All components comply with Moroccan Data Protection Law and GDPR regulations*

Dependencies:

- *Working internet connection for appointments and data access*
- *Email services for sending notifications*
- *Python libraries and frameworks used in the backend*
- *Cooperation of doctors and labs to provide necessary information*

3 MyWelly Requirements

3.1 Sign Up

Req-SU-F-001: *MyWelly shall allow users to choose between three options: doctor, patient, and laboratory.*

Req-SU-F-002: *MyWelly shall ask patient to enter their full name, date of birth, gender, ID number, phone number, personal email and a username.*

Req-SU-F-003: *MyWelly shall ask doctors to enter their name, medical speciality, location, phone number, working hours, their certificates and their consultation fees.*

Req-SU-F-004: *MyWelly shall ask laboratories to enter their laboratory name, location, phone number and working hours.*

Req-SU-F-005: *MyWelly shall allow users to create an account using their email and a password, and a password confirmation.*

Req-SU-F-006: *MyWelly shall send a verification code to the user via email.*

3.2 Log In

Req-LI-F-001: *MyWelly shall ask the registered user for his email and password to log in.*

Req-LI-F-002: *MyWelly shall provide a 'forgot password' option in case the user forgets this password.*

Req-LI-F-003: *MyWelly shall send a verification code to the user's email if they select 'forgot password' option. After verification, it shall prompt the user to create a new password and confirm it.*

Req-LI-F-004: *MyWelly shall lock user accounts after 5 consecutive failed login attempts to prevent unauthorized access. Locked accounts shall require password reset to unlock.*

3.3 Account Management

Req-AM-F-001: *MyWelly shall allow the user to change their passwords, email and phone number.*

Req-AM-F-002: *MyWelly shall allow the doctors to change their location and to add certificates.*

Req-AM-F-003: *MyWelly shall allow the laboratories to change their location.*

Req-AM-F-004: *MyWelly shall allow the users to log out of their accounts.*

Req-AM-F-005: *MyWelly shall provide users the option to permanently delete their account, which will remove all personal data and cancel all future appointments with confirmation prompt.*

3.4 Browse & Search

Req-BS-F-001: *MyWelly shall allow patients to search for doctors by medical speciality, location and name.*

Req-BS-F-002: *MyWelly shall allow users to apply multiple filters simultaneously (specialty + location + rating) to refine their doctor search results.*

Req-BS-F-003: *MyWelly shall display detailed doctor profiles including: full name, medical specialty, clinic location, working hours, years of experience, and patient rating.*

Req-BS-F-004: *MyWelly shall allow patients to search for laboratories by name, location or rating.*

3.5 Appointment Management

Req-ApM-F-001: *MyWelly shall allow users to schedule appointments with doctors in real-time, showing only currently available time slots.*

Req-ApM-F-002: *MyWelly shall allow patients to book, modify, or cancel appointments directly via the app.*

Req-ApM-F-003: *MyWelly shall ask patients to confirm their choice if they cancel their appointments.*

Req-ApM-F-004: *MyWelly shall send a reminder email to patients of their appointments.*

Req-ApM-F-005: *MyWelly shall notify doctors in-app or by email for any booking or change.*

Req-ApM-F-006: *MyWelly shall automatically notify patients in case of cancellation or delay.*

Req-ApM-F-007: *MyWelly shall maintain a history of all user past and upcoming bookings that users can access from their personal account.*

Req-ApM-F-009: *MyWelly shall give to laboratories the access to the patient and doctor emails so they can send him the test results.*

Req-ApM-F-010: *MyWelly shall allow doctors to cancel appointments with mandatory cancellation reason, and shall notify the patient via email within 5 minutes.*

Req-ApM-F-011: *MyWelly shall display a warning message when users attempt to cancel appointments less than 24 hours before scheduled time, informing them about cancellation policy.*

Req-ApM-F-012: *MyWelly shall block patient's account if he did not show for more than 3 appointments.*

3.6 Patient Reviews

Req-PR-F-001: *MyWelly shall allow patients to leave feedback and comments on doctors and laboratories after their appointment visit.*

Req-PR-F-002: *MyWelly shall allow the user to rate doctors and laboratories using a 5 stars rating scale.*

Req-PR-F-003: *MyWelly shall automatically calculate and display the average rating for each doctor/laboratory based on all patient reviews received.*

3.7 Appointment Status Management

Req-ASM-F-001: *MyWelly shall track and display appointment status with the following states: Scheduled, Completed, Cancelled by Patient, Cancelled by Doctor, or No-Show.*

Req-ASM-F-002: *MyWelly shall mark the appointment as completed after two hours of the scheduled appointment time has passed.*

3.8 Non-Functional Requirements

Req-NFR-R-001: *MyWelly shall handle all personal and medical information securely following data protection best practices to maintain user privacy.*

Req-NFR-R-002: *MyWelly shall be available 99% of the time.*

Req-NFR-R-003: *MyWelly shall perform automatic daily backups of all user data, bookings, and reviews to prevent data loss.*

Req-NFR-R-004: *MyWelly shall send verification email within one minute and then offer a 'resend code' in case the user did not receive it within the one minute.*

End of Document

MyWelly - Transforming Healthcare in Morocco