Initial Structure (Will change when we start working on the document)

1. ***Overview of the Proposed Software System (Zahaby)***
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1. Overview of the Proposed Software System (Zahaby)

Introduction

Sehaty is an innovative health platform designed with the dream of revolutionizing patients' interaction with clinics. Through smart clinic discovery, live queueing, and personalized healthcare service, Sehaty eliminates the inefficiencies that are inherently found in traditional appointment bookings and walk-in systems. Furthermore, Sehaty ensures seamless connectivity between patients and healthcare providers by reducing wait times through the live queue system, optimizing clinic efficiency through a simple-to-use system, and overall enhancing both patient and clinic satisfaction. Therefore - with cross-platform accessibility through a mobile-first approach - Sehaty empowers users with the ability to manage their healthcare needs effortlessly.

The Challenge:

Patients usually struggle to find the right clinics for their health needs, often undergoing an exhausting search for available doctors, wait times, and insurance coverage. Once at a clinic, they face long, unpredictable wait times and inefficient scheduling resulting in much-deserved frustration for both patients and clinics. Moreover, by facing difficulty in managing past appointments and prescriptions due to a lack of centralized patient history, both patients and clinics are often left muddled. This causes clinics to struggle with overcrowding and inefficient scheduling - leading to no-shows and last-minute cancellations - ultimately causing major operational inefficiencies and significant revenue loss.

Main Users:

Sehaty is designed to serve two primary user groups:

- **Patients Seeking Healthcare Services**
    - Individuals searching for **accessible and reliable** medical care, whether for routine check-ups, specialized treatments, or emergency consultations.

    - People who **struggle to find the right clinic**, often facing difficulties in comparing options, checking wait times, or verifying insurance compatibility.
    - Those who want a **hassle-free experience** when booking appointments, managing prescriptions, and tracking their medical history.
- **Clinics & Healthcare Providers**
    - Clinics looking to **expand their reach** and attract more patients through a digital platform.
    - Healthcare professionals aiming for **better appointment management**, reducing no-shows, and optimizing their schedules.

The Solution: Sehaty

By analyzing the challenges mentioned and understanding the opportunity that lies ahead, Sehaty emerges to bridge the gap between healthcare providers and patients - providing a line of A1 features, some of which are:

- **Smart Clinic Find:** Users find a clinic using location, schedule availability, specialty, rating, and insurance.
- **Queue-Free Appointment & Walk-In Management:** Individuals see real-time wait times, schedule from afar, and get reminded when near their turn.
- **End-to-End Patient History Monitoring:** Single platform for seeing historic appointments, prescriptions, and follow-ups.
- **Emergency Consultation Platform:** Highly customized advice as a function of the user's medical history and previous clinic visitation.
- **Improved Clinic Operations:** Minimized waiting times, scheduling optimization, and enhanced patient management overall.

Sehaty is not just a scheduling app - it is a healthcare platform that has been designed to maximize the benefits that each patient experiences from their clinic visits. Through brilliant features and proper execution, Sehaty streamlines the healthcare journey of patients and

healthcare providers posing itself with the opportunity of massive growth in the Middle East - transforming the way healthcare services are accessed and managed. All in all, Sehaty makes healthcare simple, illuminates it, and enhances its accessibility - because nobody should ever have to wait an eternity for the treatment they are owed.

2. Product Backlog (Karim, Ali Hammad)

2.1 Functional Requirements

1. **User Management**
    a. Users will be able to sign up for an account
    b. Users will be able to log in to their account.
    c. Users will be able to upload their medical history.
2. **Clinic Discovery**
    a. Users can search for clinics by specialty and/or location.
    b. Users will be able to view clinic profiles, including ratings and reviews.
3. **Appointment Booking**
    a. Users will be able to book appointments at clinics.
    b. Users will be able to select preferred doctors and appointment times.
4. **Queue Management**
    a. Users will be able to track queue progress.
    b. Users will be able to receive notifications for appointment updates.
5. **Patient History**
    a. Users will be able to access their medical records and past prescriptions.
6. **Medication Management**
    a. Users will be able to view and manage their medication schedules.
    b. Users will be able to receive reminders regarding medication times.
7. **Feedback and Support**
    a. Users will be able to add their reviews and ratings to clinic profiles.
    b. Users will be able to report concerns to the admin (customer support).

2.2 Non-Functional Requirements

1. **Security**
    a. The system should ensure the encryption of all sensitive information.
    b. Users must be able to activate 2-factor authentication.
    c. Users must be able to use biometric authentication to access medical history.
2. **Performance**
    a. The system should load pages within 2 seconds.
    b. The system should support 10,000 concurrent users.
3. **Usability**
    a. The system must have a user-friendly interface.
4. **Scalability**
    a. The system should support scale to support user-base increases without performance degradation.
5. **Compatibility**
    a. The system should support iOS devices and Android devices.

2.3 Prioritization of Features Based On Importance

Feature	***Value***	***Cost***	***Dependencies***	***Priority***
Appointment Booking	*High*	*Medium*	*Clinic Data*	*High*
Clinic Discovery	*High*	*High*	*-*	*High*
Live Queue Management	*Medium*	*High*	*Real-time Updates from Clinic*	*Medium*
Patient History Access	*High*	*Low*	*-*	*High*
Insurance Integration	*High*	*High*	*-*	*Low*

3.*Use Case Analysis*

Use Case Name	Upload medical history
Actor	Patient
Description	The patient should be able to upload his medical history along with lab tests and scans.
Pre-condition	Patient has successfully logged in to his account.
Basic Flow	• Patient will choose what he needs to upload (medical history/ scans/lab tests) • Then the patient would scan the required document. • In case of medical history he will have the option to type in. • After uploading all the required data, the patient will save the changes to his record.
Alternative Flow	
Post-condition	Patient record updated
Business rules	Patient should have a single record.
Assumption	Patients will be able to upload clear photos of scans/ lab tests.

Use Case Name	Search for clinic
Actor	Patient
Description	Patients should be able to check available clinics and filter them according to speciality, location, prices,

	and reviews. He can also choose to search by the doctor's name if he wants a specific one.
Pre-condition	Patient has launched the application
Basic Flow	• The patient will choose the required filters. • All available clinics would appear along with working hours and prices.
Alternative Flow	• The patient types the doctor's name in the search box. • All of his clinics appear along with working hours and prices.
Post-condition	The patient can check the clinic profile along with ratings and reviews.
Business rules	
Assumption	The patient already knows the type of doctor they need.

Use Case Name	Access patient history
Actor	Doctor
Description	The doctor should be able to check patient history through the system, including medical history, previous prescriptions, tests, and scans. He can search for the patient record using his name or ID. He can also access the record through the appointments schedule.
Pre-condition	The doctor has logged in to the system.
Basic Flow	• The doctor will go to the patient records page. • He will enter the patient ID or name in the search box. • All records with the corresponding name or ID would appear.

Alternative Flow	• The doctor will open the appointment schedules For a specific day. • Appointments of this day will appear. • If he clicks on any appointment the system will display the patient information along with his history.
Post-condition	The doctor can then proceed to upload new prescription if needed
Business rules	
Assumption	The patient already has a record.

Use Case Name	Book an appointment
Actor	Patient
Description	Patients should be able to check the working hours and the available appointments on the day he selects. He can then choose his slot and confirm his booking.
Pre-condition	Patient is logged in.
Basic Flow	• The patient will choose the clinic he wants. • He will choose his desired date. • All available slots will appear to choose from. • After choosing the slot, the patient would click on “Confirm booking”
Alternative Flow	
Post-condition	The patient will receive a confirmation email along with a link for the location.
Business rules	
Assumption	

Use Case Name	Modify working hours
Actor	Clinic
Description	The clinic should be able to modify their working hours.
Pre-condition	The secretary or admin is logged in.
Basic Flow	• The secretary/admin will open the clinic profile. • He will choose the day/days he needs to modify and apply changes. • He will choose whether this change is only for this week or permanent. • He will save changes.
Alternative Flow	
Post-condition	The changes will be reflected for patients.
Business rules	
Assumption	The cancelled/modified slots are not booked.

Use Case Name	Upload medical history
Actor	Patient
Description	The patient should be able to upload his medical history along with lab tests and scans.
Pre-condition	Patient has successfully logged in to his account.
Basic Flow	• Patient will choose what he needs to upload (medical history/ scans/lab tests) • Then the patient would scan the required document. • In case of medical history he will have the option to type in.

	• After uploading all the required data, the patient will save the changes to his record.
Alternative Flow	
Post-condition	Patient record updated
Business rules	Patient should have a single record.
Assumption	Patients will be able to upload clear photos of scans/ lab tests.

Use Case Name	Search for clinic
Actor	Patient
Description	Patients should be able to check available clinics and filter them according to speciality, location, prices, and reviews. He can also choose to search by the doctor's name if he wants a specific one.
Pre-condition	Patient has launched the application
Basic Flow	• The patient will choose the required filters. • All available clinics would appear along with working hours and prices.
Alternative Flow	• The patient types the doctor's name in the search box. • All of his clinics appear along with working hours and prices.
Post-condition	
Business rules	
Assumption	The patient already knows the type of doctor they need.

Use Case Name	Queue management
Actor	Patient
Description	Patients will be able to get real-time updates on how many appointments are before them, and the estimated wait time. They will also receive a notification when there is only one patient before the.
Pre-condition	Patient has already booked an appointment.
Basic Flow	• Patient opens his appointment details. • He clicks on queue management. • He will find how many patients are before him, and estimated wait-time. • A notification will be sent when there is only one patient left before him.
Alternative Flow	
Post-condition	Patients attend his appointment without waiting for many hours at the clinic.
Business rules	
Assumption	There is an estimated duration for an appointment given by the clinic.

Use Case Name	View and manage medication schedule
Actor	Patient
Description	The patient should be able to check all of his required medication along with their timings and receive reminders for them. He can also update the medication or their timings.

Use Case Name	View and manage medication schedule
Pre-condition	The patient already has a medication schedule.
Basic Flow	• The patient will open his profile and go to the medication schedule. • He will find all of his required medication along with the dosages and timings. • If he clicks on any medication he can update the dosage or timing, or delete it if no longer required. • Reminders will be sent for every dosage.
Alternative Flow	• The patient will open his profile and go to the medication schedule. • He will click on “add medication. • He will input the name, dosage and timing. • He will click on save medication.
Post-condition	Updates will be saved to the schedule.
Business rules	
Assumption	

Identified risks

- Resistance towards digitization:

  Many clinics are still operating using the traditional booking system and write prescriptions as hard copies, so they might think why change the system if they are operating successfully and have many patients. This may be the case especially for doctor’s who are in the field for a long time and despite the fact that they are operating in a very traditional way they have a strong reputation and you always find long waiting lists at their clinics to even book an

appointment. So despite the several benefits our system can offer they may be resistant towards the change as they have been operating successfully using traditional methods for a long time.

- Difficulties in using the application:

  Elderly patients may find it difficult to use the application, especially when trying to upload their test results on scans. They may not be able to upload clear pictures of the results for the doctor to interpret them, especially if they do not have someone to assist them.

- Data breach:

  Proper security measures must be put in place to ensure that patient's private data are confidential. If the proper measures are not implemented unauthorized individuals may gain access to the data.