



**Project Name: Doctor Hub**

**Track: Software and artificial intelligence**

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## **ABSTRACT**

Doctor Hub – the first unified health record for every Egyptian citizen. Egypt today has more than 100 million citizens, with over 200 million medical visits conducted annually. However, around 65% of patients undergo repeated tests and diagnostics due to fragmented or missing medical records. Medication errors account for nearly 10% of total recorded medical mistakes, while the cost of wasted resources caused by the lack of integration between healthcare providers exceeds 10 billion Egyptian pounds annually. The result is massive financial losses for both the state and individuals, declining healthcare quality, and the absence of a complete medical history for patients.

Our solution is Doctor Hub, a smart digital health platform that provides a comprehensive approach through a national unified health record for every citizen, enabling seamless integration between patients, doctors, pharmacists, laboratories, and the Ministry of Health within one secure and easy-to-use system. By leveraging advanced technologies, Doctor Hub reduces medical errors, eliminates unnecessary repetition of tests, and provides real-time access to patient history. Ultimately, it improves the quality of healthcare, reduces costs, and empowers decision-makers with accurate data to respond quickly and effectively to epidemics and public health crises.

## **-Problem Statement**

The Egyptian healthcare system is facing a number of critical challenges that reduce efficiency and impact the quality of patient care:

### **1- Lack of Unified Health Record**

There is no national electronic health record that consolidates patient data across all healthcare providers.

### **2-Limited Access to Complete Medical History**

Both patients and doctors struggle to access a comprehensive medical history, leading to repeated tests, unnecessary costs, and inaccurate diagnoses.

### **3- High Risk of Medical Errors**

The absence of integration among doctors, pharmacists, and hospitals increases the likelihood of prescription errors and treatment mistakes.

### **4- Weak Child Health Monitoring**

Current systems are insufficient for tracking vaccinations, subsidized milk programs, and child growth indicators.

### **5- Delayed Detection of Diseases and Epidemics**

Fragmented data prevents timely monitoring, slowing down the

government's ability to identify and respond to outbreaks and public health emergencies.

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## **– Solution Overview**

**Doctor Hub** is a national digital health platform designed to address these challenges through a comprehensive and integrated solution:

### **1- National Digital Health Record**

A secure, unified health record for every citizen, accessible by authorized stakeholders.

### **2-System-Wide Integration**

Seamless interoperability with hospitals, pharmacies, laboratories, and insurance companies to ensure real-time data sharing.

### **3- AI-Powered Assistant for Doctors**

Intelligent decision support tools to analyze medical data, assist in diagnosis, and reduce the risk of errors.

### **4-Smart Patient Assistant**

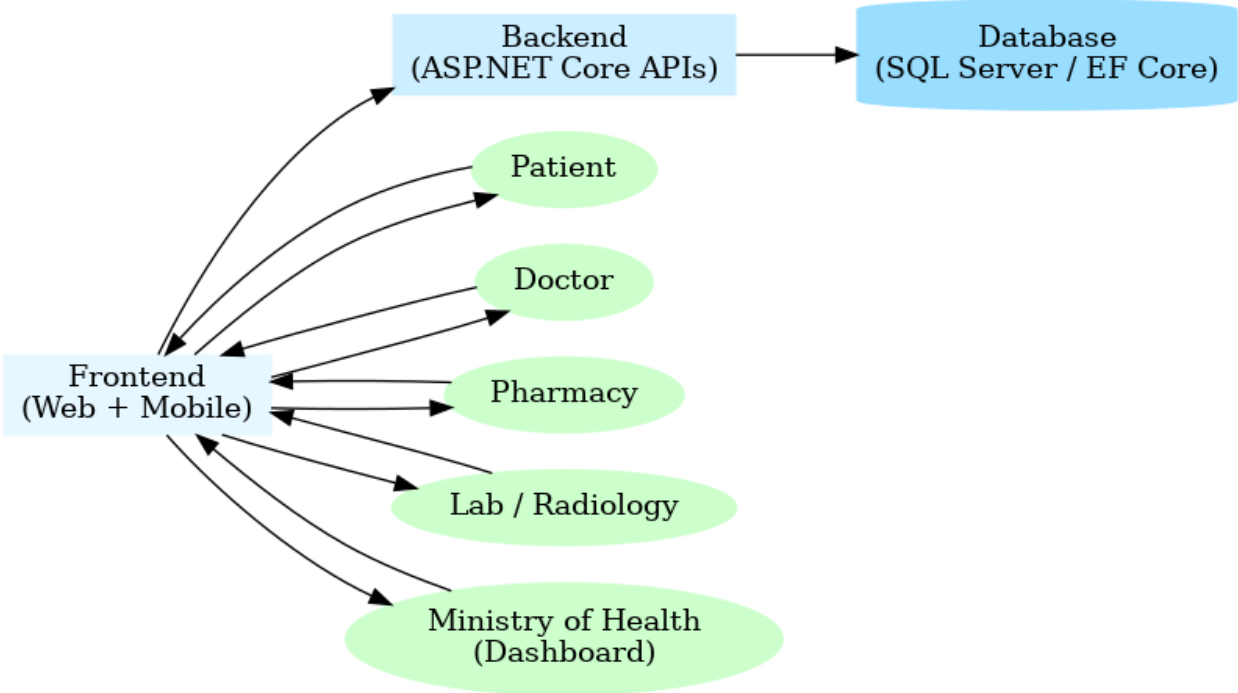
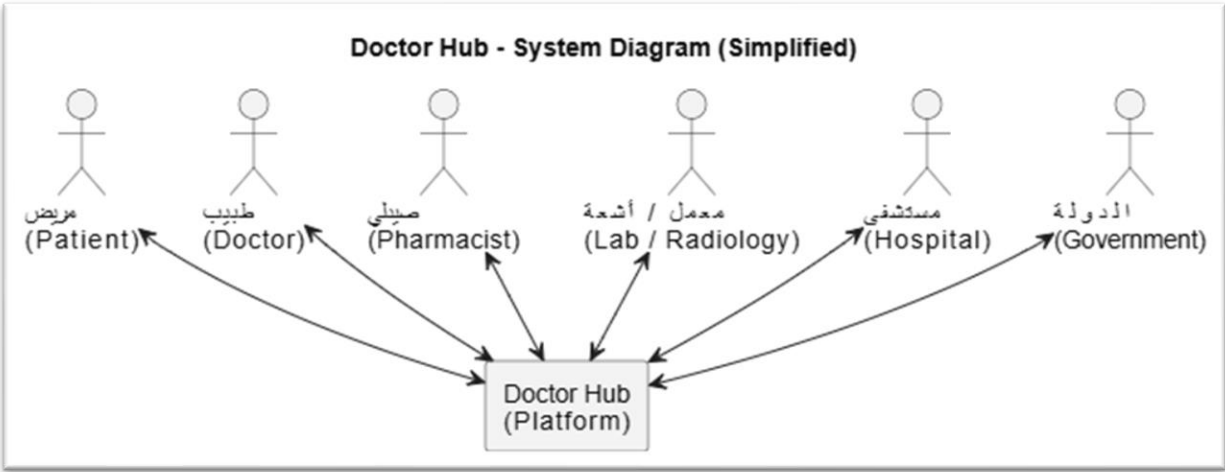
A virtual assistant that explains prescriptions, provides health alerts, analyzes test results, and answers common health questions.

### **5- Government Dashboards**

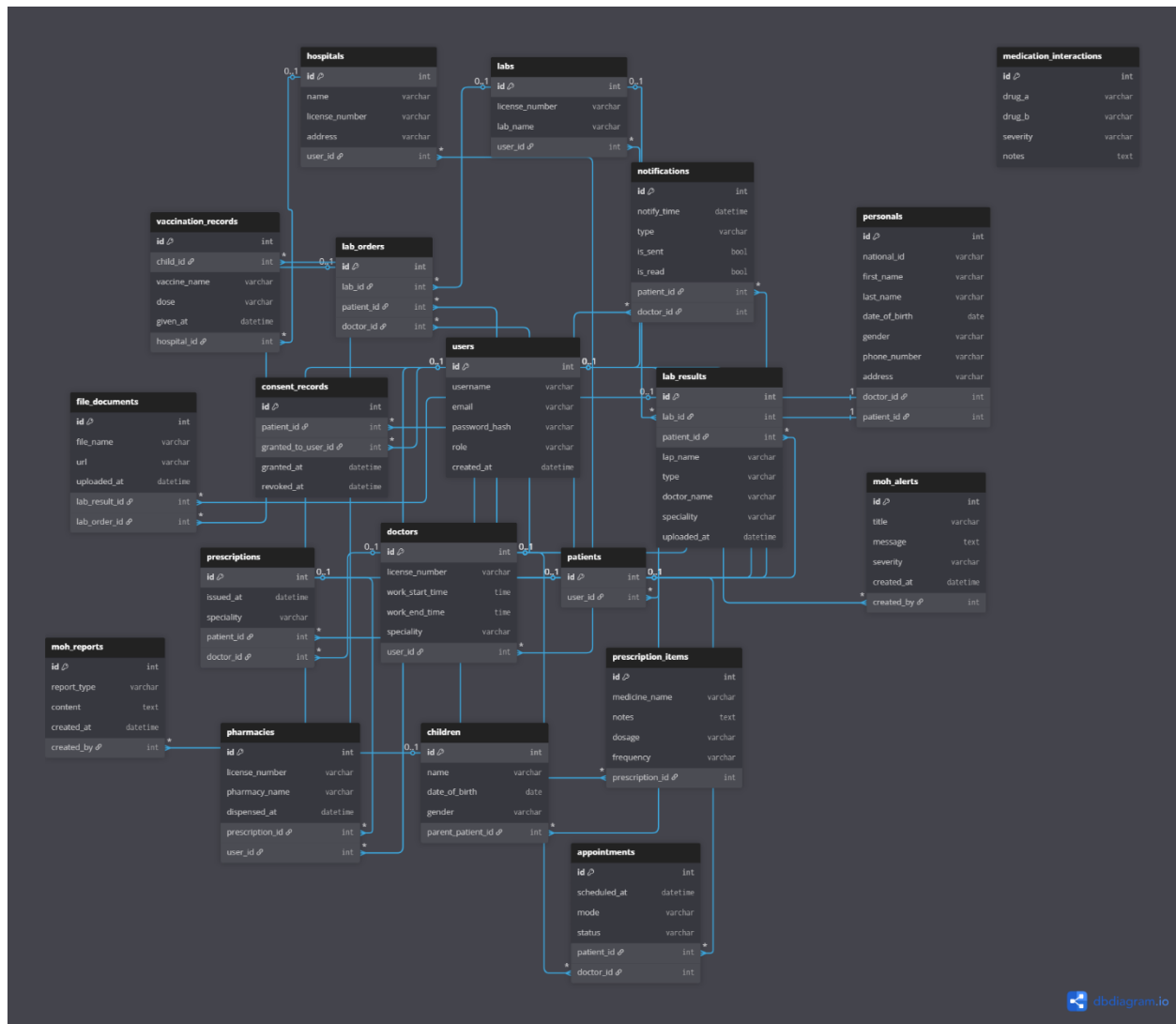
Advanced monitoring dashboards for the Ministry of Health to track disease trends, detect epidemics early, and manage national health emergencies effectively.

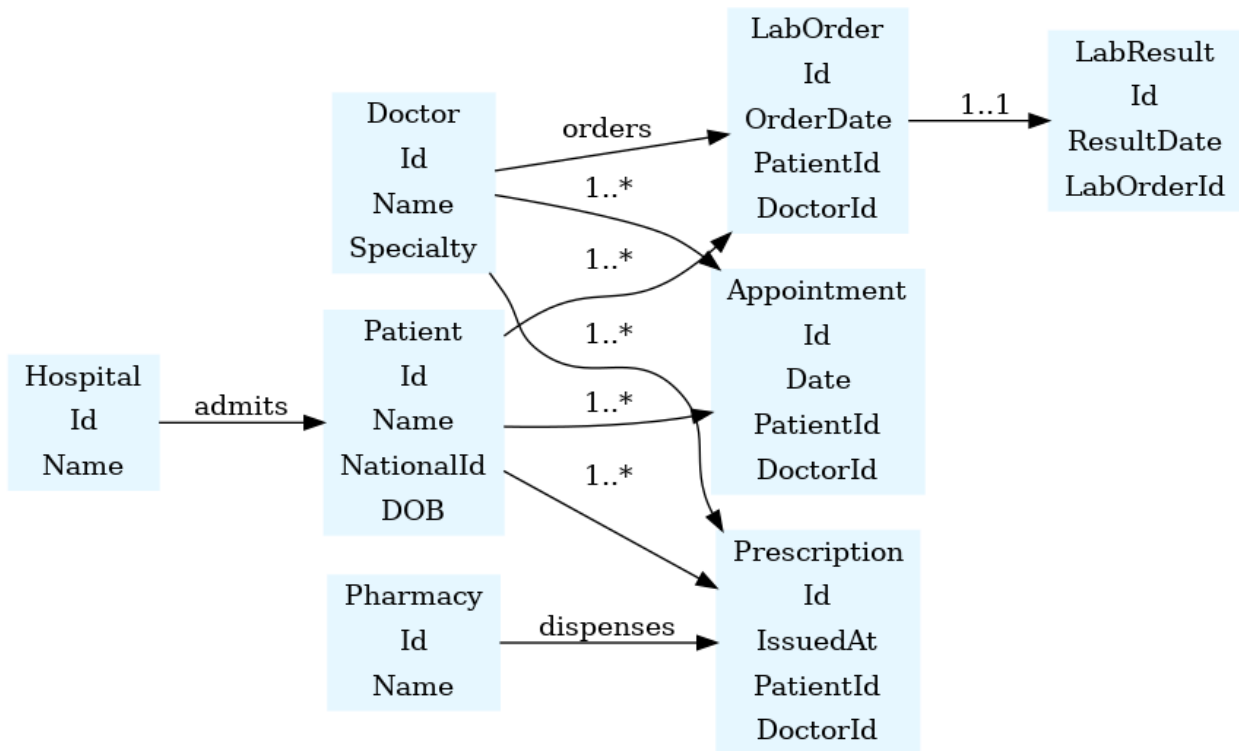
# SYSTEM ARCHITECTURE DIAGRAM

## ◆ System Diagram



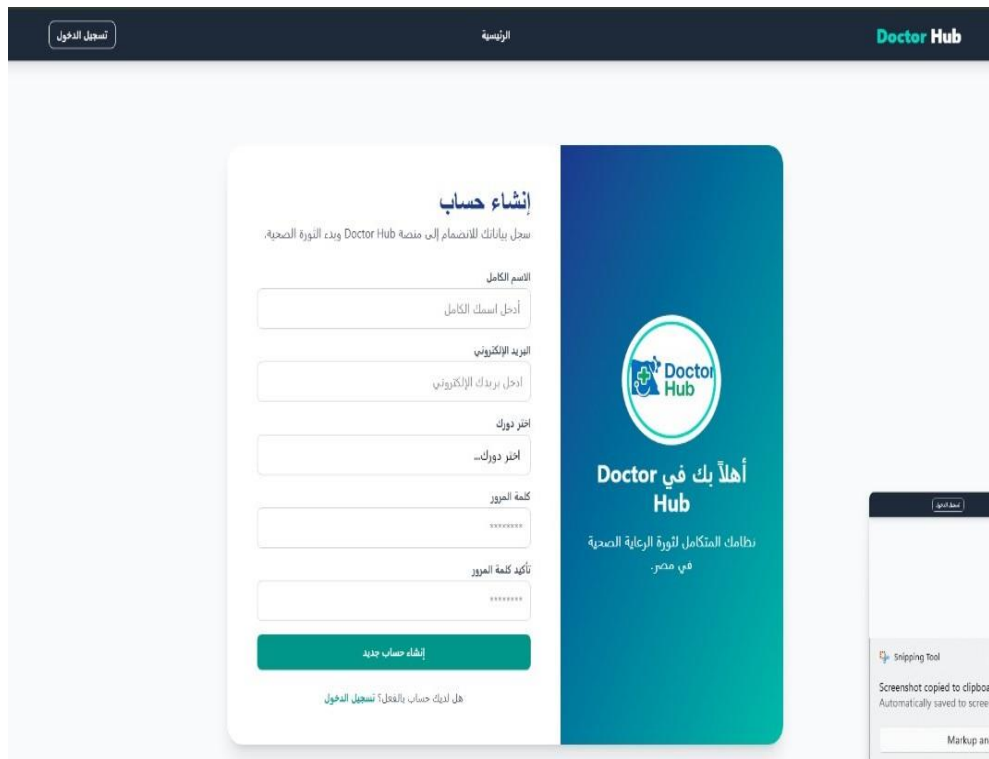
# DATABASE ERD

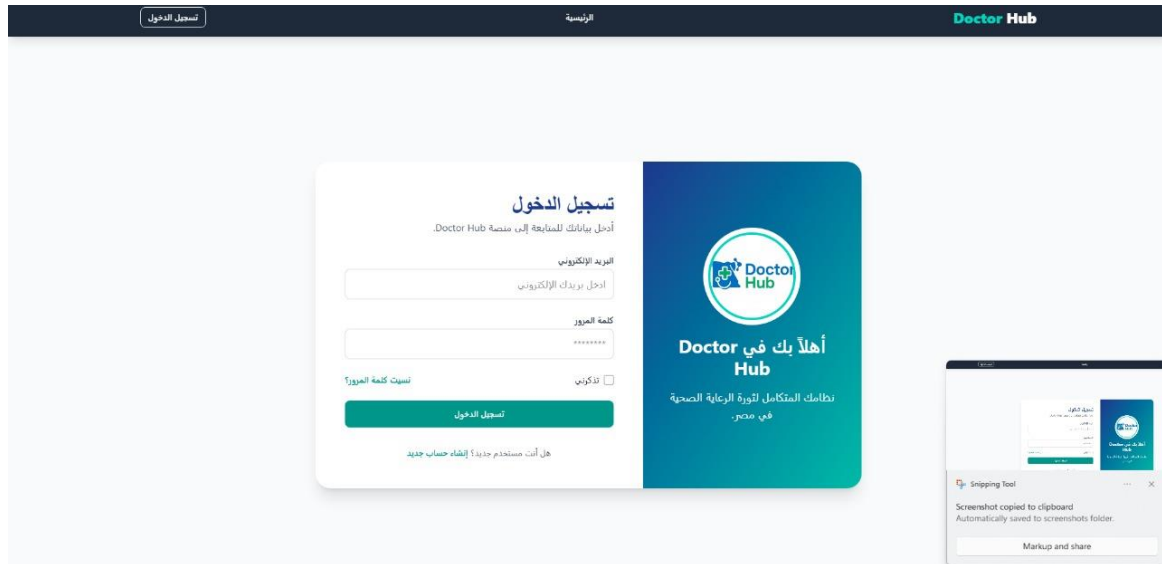




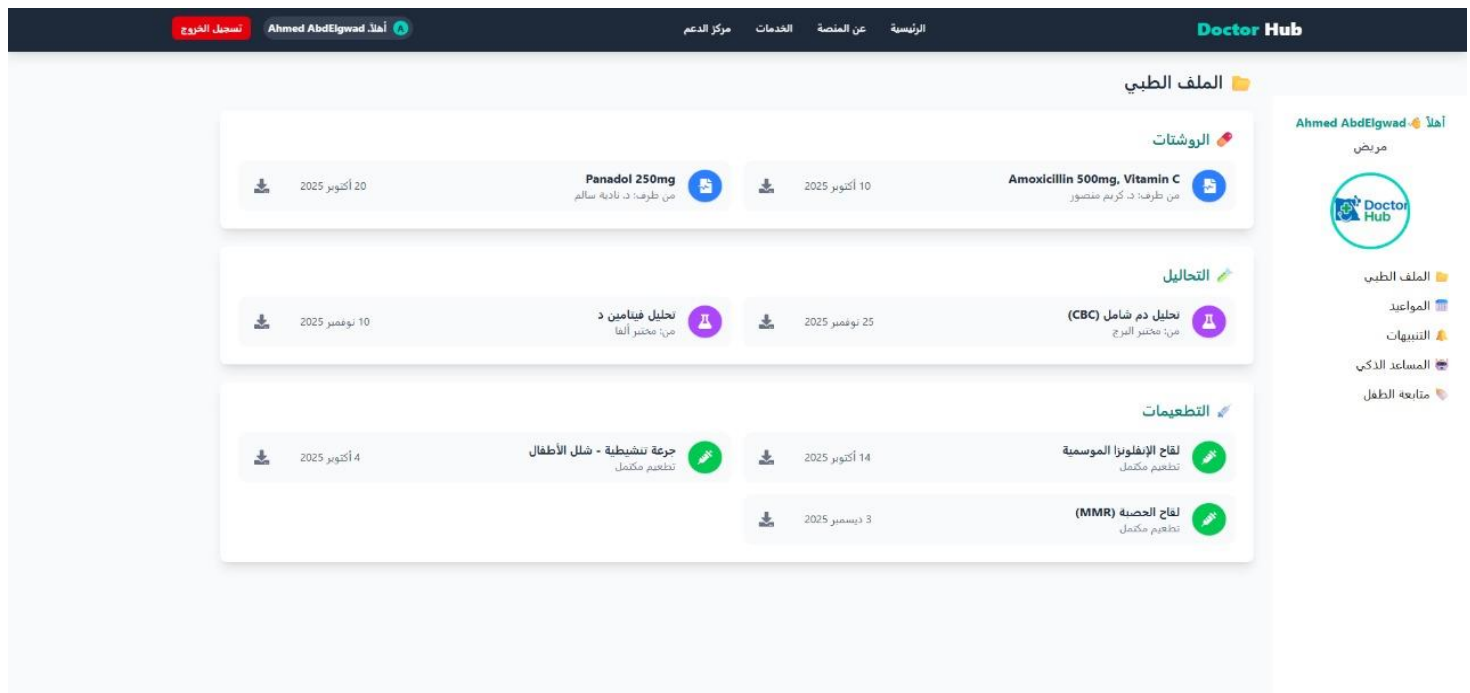


## UI SCREENSHOTS (WEB + MOBILE)

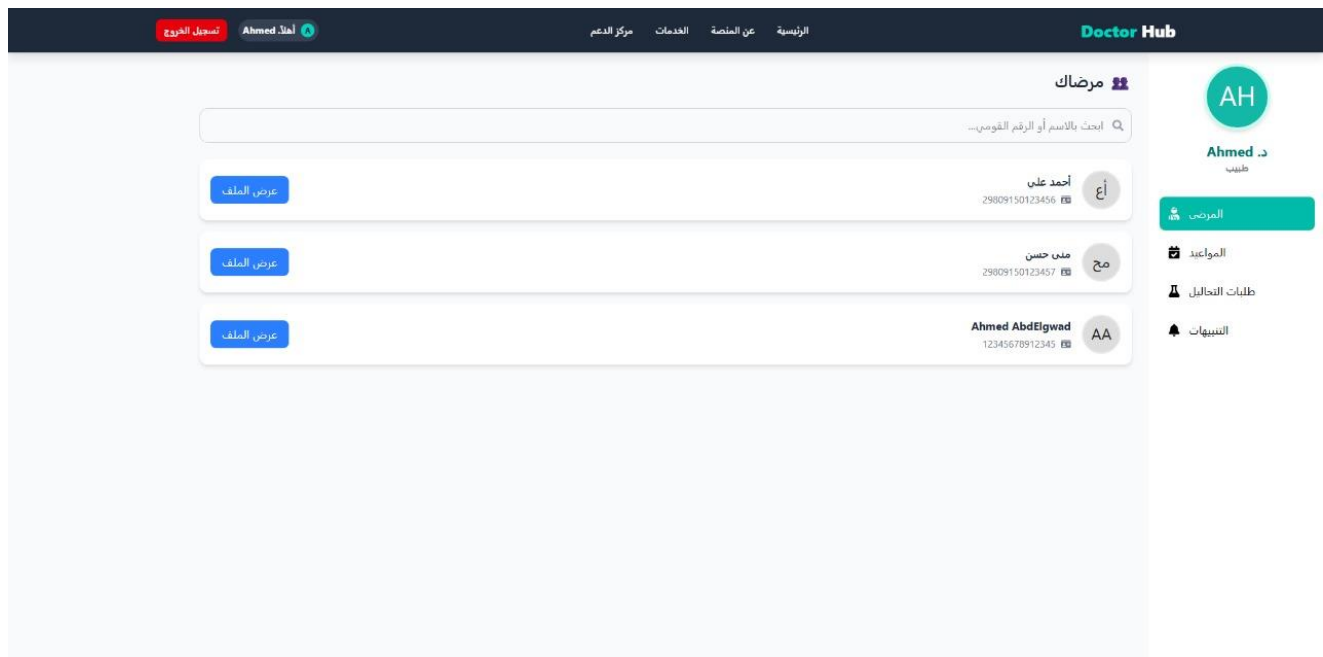




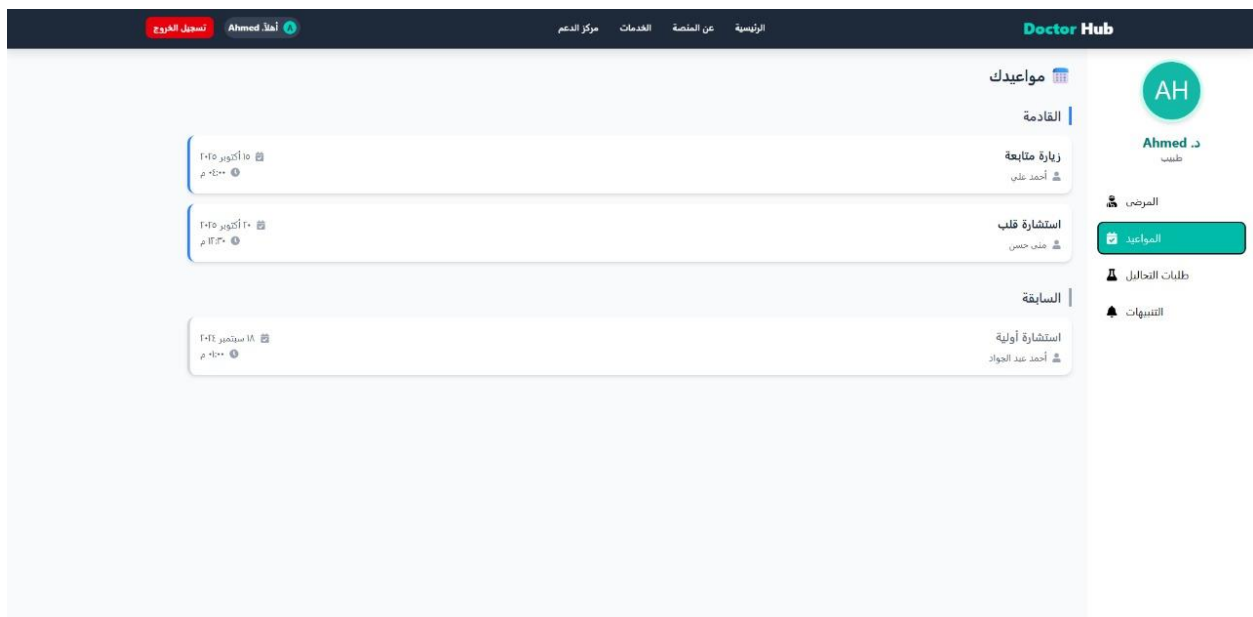
## Patient Dashboard



## Doctor Dashboard



## Book Appointment Page



## Prescription Page (Doctor)



## Child

13 | Page

## API ENDPOINTS

### Hub Doctor – MVP API Contract (Table Format)

#### Patient (المريض)

Action	Method	Endpoint	الصفحة
يشوف ملفه الطبي	GET	/patients/{id}	ملف المريض
يشوف المواعيد	GET	/appointments?patientId={id}	المواعيد
يحجز ميعاد	POST	/appointments	حجز ميعاد
يشوف الروشتات	GET	/prescriptions?patientId={id}	الروشتات
يشوف نتائج التحاليل	GET	/labResults?patientId={id}	التحاليل/الأشعة

#### Doctor (الطبيب)

Action	Method	Endpoint	الصفحة
يفتح ملف المريض	GET	/patients/{id}	ملف المريض
يكتب روشتة	POST	/prescriptions	كتابة روشتة
يعمل طلب	POST	/labOrders	طلب معمل/أشعة
يعدل الملاحظات	PUT	/labOrders/{id}	تعديل طلب معمل
يشوف مواعيد	GET	/appointments?doctorId={id}	مواعيد الدكتور

## Pharmacist (الصيدلي)

Action	Method	Endpoint	الصفحة
يشوف الروشتات المستتية صرف	GET	/prescriptions?status=pending	Dashboard
يشوف الروشتة	GET	/prescriptions/{id}	تفاصيل روشتة
يسجل انه صرف الدواء	PUT	/prescriptions/{id}/dispense	صرف الدواء

## Lab / Radiology (المعمل / الأشعة)

Action	Method	Endpoint	الصفحة
يشوف الطلبات	GET	/labOrders?status=pending	Dashboard
يرفع نتيجة تحليل/أشعة	POST	/labOrders/{id}/results	رفع النتيجة

## Hospital (المستشفى)

Action	Method	Endpoint	الصفحة
يفتح ملف الطوارئ	GET	/hospitals/emergency/{nationalId}	طوارئ
يشوف المرضى الداخليين	GET	/hospitals/{id}/patients	Dashboard

## MoH (وزارة الصحة)

Action	Method	Endpoint	الصفحة
يشوف إحصائيات عامة	GET	/moh/dashboard	Dashboard
تقارير وتحليلات الفترة	GET	/moh/reports?from=YYYY-MM-DD&to=YYYY-MM-DD	تقارير

# DoctorHub v1 OAS 3.0

[/swagger/v1/swagger.json](#)

API documentation for DoctorHub

Authorize

## Auth

POST	/api/auth/register	🔒
POST	/api/auth/login	🔒
POST	/api/auth/forgot-password-otp	🔒
POST	/api/auth/verify-otp	🔒
POST	/api/auth/reset-password	🔒
POST	/api/auth/change-password	🔒
POST	/api/auth/refresh-token	🔒
POST	/api/auth/google-login	🔒

## Doctor

GET	/api/v1/doctors/{doctorId}/dashboard	🔒
GET	/api/v1/doctors/{doctorId}/patients/{patientId}	🔒
POST	/api/v1/prescriptions	🔒
POST	/api/v1/lab-orders	🔒
PUT	/api/v1/lab-orders/{orderId}	🔒

## Lab

GET	/api/v1/lab-orders	🔒
POST	/api/v1/lab-orders/{orderId}/results	🔒

## Hospital

GET	/api/v1/hospitals/emergency/{nationalId}	🔒
GET	/api/v1/hospitals/{hospitalId}/patients	🔒

## MoH

GET	/api/v1/moh/dashboard	🔒
GET	/api/v1/moh/reports	🔒

## Patient

GET	/api/v1/patients/{nationalId}/dashboard	🔒
GET	/api/v1/patients/{nationalId}/appointments	🔒
POST	/api/v1/appointments	🔒
GET	/api/v1/patients/{nationalId}/records	🔒

## Pharmacy

GET	/api/v1/pharmacy/prescriptions	🔒
GET	/api/v1/prescriptions/{id}	🔒
PUT	/api/v1/prescriptions/{id}/dispense	🔒

Schemas



## **USER GUIDE:**

### User Journey Flow – Doctor Hub

#### **1. Patient**

- Logs in with national ID / account.
- Books an appointment with a doctor.



#### **2. Doctor**

- Receives the patient.
- Writes an **electronic prescription**.



#### **3. Pharmacist**

- Receives the electronic prescription through the system.
- Dispenses the medication to the patient.




#### **4. Laboratory**

- Uploads lab test results for the patient through the portal.

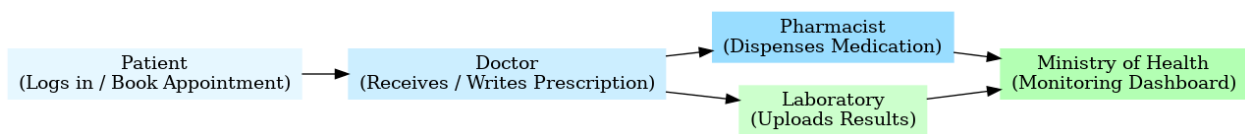
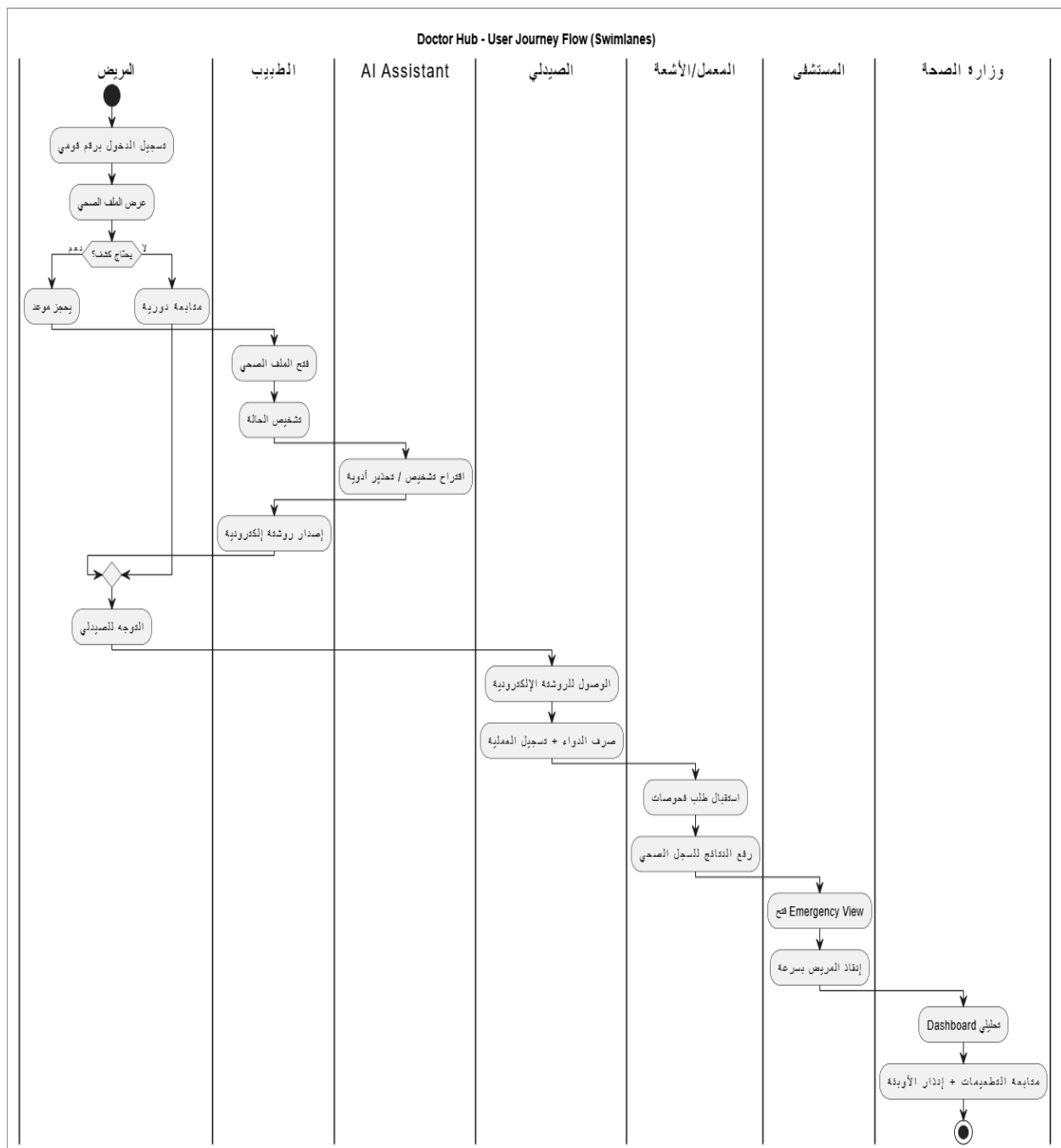


## 5. Government / Ministry Dashboard

- Monitors all activities (appointments, prescriptions, lab results) through a **central dashboard**.

 Visual Representation (if drawn as a flow diagram)

Patient → Doctor → Pharmacist → Laboratory → Government  
Dashboard



## BUSINESS MODEL CANVAS

### Business Plan – Doctor Hub

We know that the most important question you have is: What is the return on investment from Doctor Hub?

The answer is simple: the Egyptian healthcare market is massive, with more than 100 million citizens and billions of pounds spent annually on healthcare.

Doctor Hub transforms this challenge into a major opportunity through multiple revenue streams:

- Core Revenue Model (B2B SaaS):

Clinics, hospitals, and pharmacies will pay monthly or annual subscriptions to use the platform. This model has already proven globally successful with companies like Epic and Cerner, which are valued at billions of dollars.

- Government and Insurance Partnerships:

By integrating with the Ministry of Health and insurance providers, Doctor Hub can secure long-term contracts that guarantee stable and recurring financial flows.

- AI-Powered Paid Services (AI Assistant):

For patients: subscription-based services that explain prescriptions and lab results in a simple way.

For doctors: premium tools that suggest diagnoses and alert them to drug interactions.

These features are not only medically valuable but also create sustainable recurring revenue streams.

- Big Data and Analytics:

With securely anonymized data, Doctor Hub can provide insights and analytical reports for pharmaceutical companies, insurance firms, and government agencies — tapping into a huge and highly profitable market.

With an expansion plan to reach one million users within the first two years, and an average annual subscription of just 300 EGP per user, the platform can generate up to 300 million EGP in potential yearly revenue.

The result: Doctor Hub is not just solving a national healthcare problem; it is building a profitable, technology-driven health company with the capacity to become Egypt's first national digital healthcare platform.

## CANVAS

# DoctorHub

<b>VALUE PROPOSITION</b> <ul style="list-style-type: none"> <li>Centralized digital health platform</li> <li>Electronic prescriptions (reduce errors &amp; paper wast)</li> <li>Easy patient appointment booking &amp; follow-up</li> <li>Integrated pharmacy &amp; lab results in one place</li> <li>Government deshboard for monitoring &amp; decision-making</li> </ul>	<b>CUSTOMERS</b> <ul style="list-style-type: none"> <li>Patients</li> <li>Doctors</li> <li>Pharmacies</li> <li>Laboratories</li> <li>Government / Ministry of Health</li> </ul>	<b>CUSTOMERS</b> <ul style="list-style-type: none"> <li>Patients</li> <li>Doctors</li> <li>Pharmacies</li> <li>Laboratories</li> <li>Government / Ministry of Health</li> </ul>	<b>REVENUE</b> <ul style="list-style-type: none"> <li>Subscription plans for doctors &amp; clinics</li> <li>Transaction fees on appointments / prescriptions</li> <li>Licensing fees for pharmacies &amp; labs</li> <li>Government contracts for nationwide implementation</li> <li>Future: AI assistant &amp; telemedicine premium services</li> </ul>
	<b>KEY RESOURCES</b> <ul style="list-style-type: none"> <li>Software platform</li> <li>Infrastructure</li> <li>Partnerships</li> </ul>	<b>CHANNELS</b> <ul style="list-style-type: none"> <li>Web app</li> <li>Mobile app</li> <li>APIs</li> </ul>	
<b>COST STRUCTURE</b> <ul style="list-style-type: none"> <li>Platform development</li> <li>Infrastructure</li> <li>Marketing</li> <li>Hospets</li> <li>Clinics</li> <li>Pharmacies</li> </ul>		<b>CUSTOMER SEGMENTS</b> <ul style="list-style-type: none"> <li>Patients</li> <li>Doctors</li> <li>Pharmacies</li> <li>Major Iss</li> <li>Empeniment</li> </ul>	

## Future Work

Our vision for Doctor Hub goes far beyond being the first unified health record in Egypt. We aim to position it as the leading digital health platform in the Middle East and Africa through ambitious future developments:

- Next-Gen Artificial Intelligence (AI):
  - Develop a real-time medical assistant capable of analyzing X-rays, MRIs, and detecting chronic diseases with high accuracy.
  - Build an early-diagnosis AI system to predict epidemics and diseases before they spread widely.
- Real-Time Analytics:
  - Establish a national real-time monitoring system that connects data from hospitals, pharmacies, and laboratories.
  - Provide government dashboards with instant indicators of vaccination rates, disease outbreaks, and emergency cases.
- Integration with IoT and Medical Devices:
  - Connect with wearable devices such as smartwatches and health monitors to track vital signs 24/7.
  - Enable automatic alerts to doctors and hospitals in case of critical health events.
- Telemedicine & Remote Care:
  - Empower patients to consult doctors remotely via video and audio through the platform.
  - Integrate with digital payment systems to offer a complete cycle: consultation, prescription, and e-pharmacy services.

- Big Data & Scientific Research:
  - Create a national anonymized health data bank to support medical and pharmaceutical research.
  - Collaborate with universities and research centers to accelerate drug and vaccine trials using real-world data.
- Regional & Global Expansion:
  - Scale Doctor Hub into a regional solution serving millions across Africa and the Middle East.
  - Ensure compliance with international standards (HL7, FHIR, GDPR) for interoperability and global recognition.

In conclusion, Doctor Hub is not just a digital health platform, but the foundation for building a smart healthcare infrastructure that protects citizens, empowers decision-makers, and positions Egypt as a regional leader in digital health.