



MEDICAL RECORD SYSTEM

Documentation Report

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System Overview:

The medical record management system is a sophisticated software solution designed to streamline the process of managing patient medical records. The system is divided into three main sections, each catering to a specific user group: administrators, doctors, and patients.

The first section of the system, the admin section, is accessible only to system administrators who have been granted appropriate privileges. Admins can perform a wide range of tasks, including advanced search functions. With this function, admins can quickly find all information related to patients, doctors, and appointments by filling in at least one data field. This feature is particularly useful for gathering information for reporting or for identifying trends in healthcare services. Additionally, admins can manage appointments, doctors, patients, payments, and clinics. This enables them to maintain an accurate and up-to-date database of all patient records.

The second section of the system is designed for doctors. Here, doctors can manage appointments, prescriptions, and patients. The appointment management feature enables doctors to view all appointments as well as the ability to search for appointments. The prescription management feature allows doctors to create, modify, and delete prescription records. And finally, the patient management feature allows doctors to update patient records and view their medical history, diagnoses, and treatments.

The third and final section of the system is designed for patients. Patients can manage their appointments and prescriptions, as well as search for doctors and clinics. Every patient has their own profile, which they can access and view their information and medical conditions. Patients can also add new medical conditions, ensuring that their records are always up to date.

The medical record management system is designed with a variety of non-functional requirements in mind. Security is paramount, with patient data stored securely and protected from unauthorized access. The system is also highly reliable, with minimal downtime or system failures. The system is designed to be scalable, so it can handle a growing amount of data and users as the system expands. The system is highly usable, with a user-friendly interface that is easy to navigate and use. And the system is designed to be accessible from multiple devices and platforms, including mobile devices, making it easy to access medical records on-the-go.

Overall, the medical record management system is a powerful and flexible solution that can help healthcare providers manage patient records more efficiently and accurately, ultimately improving patient outcomes and the quality of care.

User requirements:

1. The system should provide admins and doctors with reports for organization operations and allow them to manage these operations.
2. The system should provide patients with a user-friendly interface to access organization operations.

System requirements:

1. The system should allow administrators to perform advanced searches for patients, doctors, and appointments by filling in at least one data field.
2. The system should allow administrators to manage appointments, doctors, patients, payments, and clinics.
3. The system should allow doctors to manage appointments, prescriptions, and patients.
4. The system should allow patients to manage their appointments and prescriptions, and search for doctors and clinics.
5. The system should allow patients to view their information and medical conditions, and add new medical conditions as needed.
6. The system should be easy to use, with a user-friendly interface that is intuitive and easy to navigate.
7. The system should be accessible from multiple devices and platforms, including mobile devices.

Functional Requirements:

Admin Requirements:

1. Login: The system should allow system administrators to log in with an existing account.
2. Advanced Search: The system should provide an advanced search function to enable system administrators to find all information related to patients, doctors, and appointments by filling in at least one data field.
3. Appointment Management: The system should allow system administrators to manage appointments, including viewing all appointments, searching for appointments per criteria and deleting appointments.
4. Prescription Management: The system should allow system administrators to manage prescriptions, including viewing all prescriptions, searching for prescriptions by patients or by doctor and deleting prescription records.
5. Doctor Management: The system should allow system administrators to manage doctor records, including adding, updating, and deleting doctor information.
6. Patient Management: The system should enable system administrators to manage patient records, including viewing all patients, searching for patients, and deleting patients.
7. Payment Management: The system should allow system administrators to manage payments, including viewing all payments and searching payments by date.
8. Clinic Management: The system should enable system administrators to manage clinic records, including searching, adding, and deleting clinic information.

Doctor Requirements:

1. Login: The system should enable doctors log in with an existing account.
2. Appointment Management: The system should allow doctors to manage appointments, including viewing appointments, searching for appointments based on specific criteria and canceling appointments.
3. Prescription Management: The system should allow doctors to manage prescriptions, including viewing all prescriptions, searching for prescriptions by patients, adding and prescription records.

4. Patient Management: The system should enable doctors to manage patient records, including viewing all patients, searching patients, and viewing patients' conditions.

Patient Requirements:

1. Sign up/Login: The system should enable patients to create a new profile on the system or log in with an existing account.
2. Patient Profile Management: The system should enable patients to manage their profiles, including viewing their information and conditions, and adding new conditions.
3. Appointment Management: The system should allow patients to manage appointments, including scheduling, viewing appointments and canceling.
4. Prescription Management: The system should allow patients to manage prescriptions, including viewing prescriptions.
5. Doctor Search: The system should enable patients to search for doctors based on specific criteria.
6. Clinic Search: The system should enable patients to search for clinics based on specific criteria.

Non-Functional Requirements:

1. Security: The system should ensure that all patient data is securely stored and protected from unauthorized access.
2. Performance: The system should be fast and responsive, even when handling a large amount of data.
3. Reliability: The system should be reliable, with minimal downtime or system failures.
4. Scalability: The system should be able to handle an increasing amount of data and users as the system grows.

5. Usability: The system should have a user-friendly interface that is easy to navigate and use.
6. Accessibility: The system should be accessible from multiple devices and platforms.

Requirement changes:

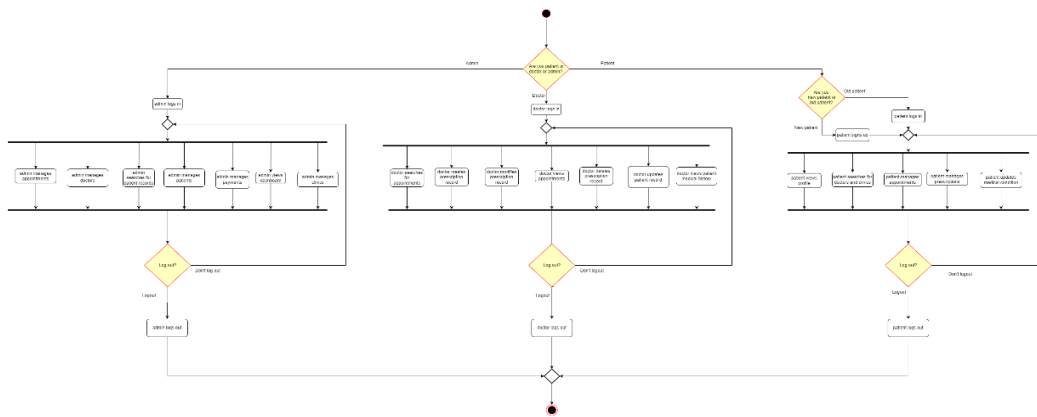
Initially this system was meant to be a software application for the use of admins and doctors only, then we decided to make it a website to promote ease of access. Additionally, a patient section was added to the website.

Assumptions:

1. Doctors are general practitioners without medical specialization.
2. Doctor can only have one appointment per day
3. Patients that are insured pay 150\$, uninsured patients pay \$1000
4. Prescriptions last 30 days by default

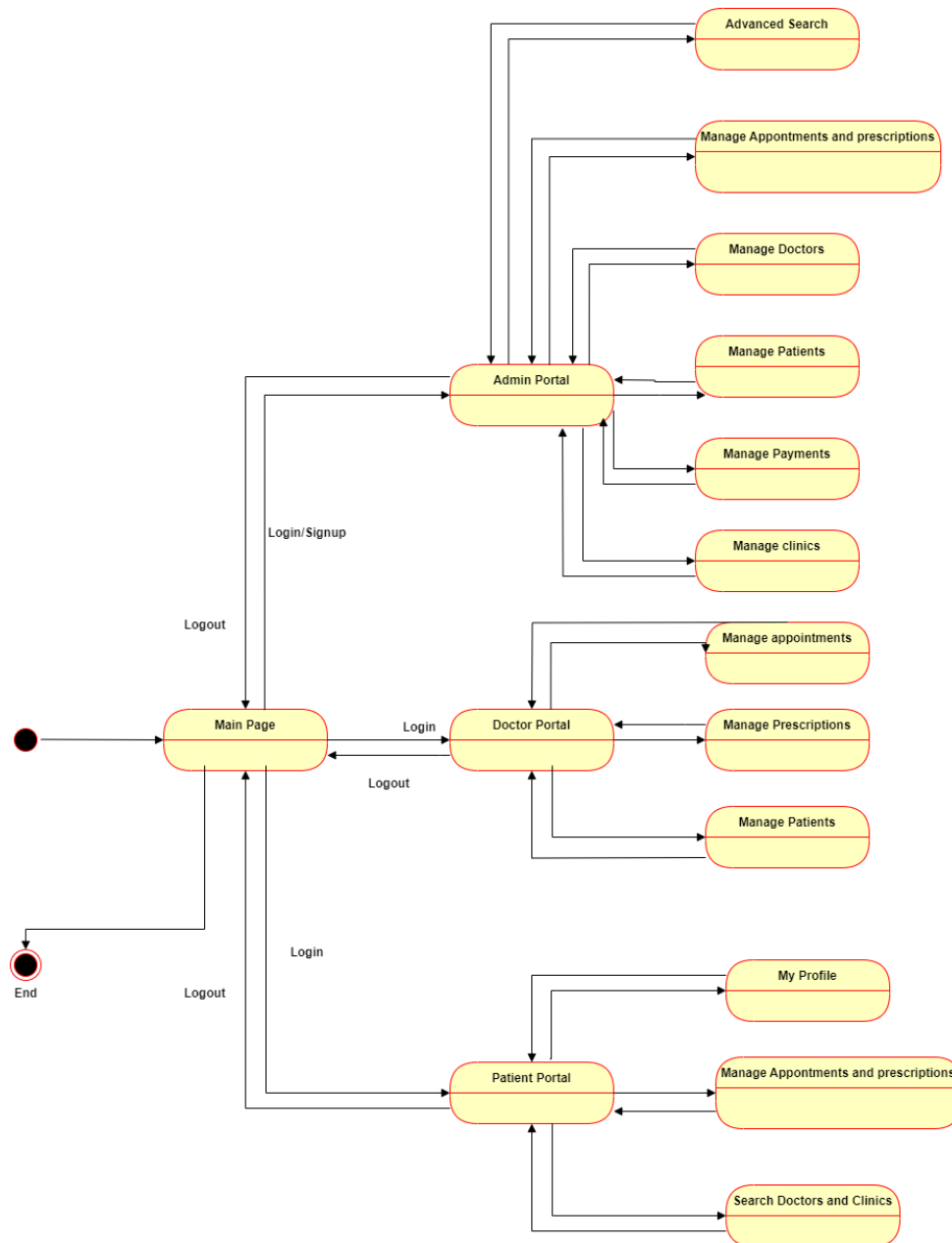
UML Diagrams:

Activity Diagram:



The activity diagram for the medical record management system depicts the flow of activities and actions that occur within the system to achieve specific goals and objectives. It shows the sequence of tasks performed by different users of the system, such as administrators, doctors, and patients, and how they interact with the system. The activity diagram includes various decision points and actions, such as creating new patient records, updating medical information, scheduling appointments, prescribing medications, and processing payments. The diagram also shows how the system responds to these activities and how it handles any errors or exceptions that may occur. Overall, the activity diagram provides a high-level view of the system's functionality, helping to identify potential bottlenecks, optimize processes, and ensure efficient use of system resources.

State Machine Diagram:

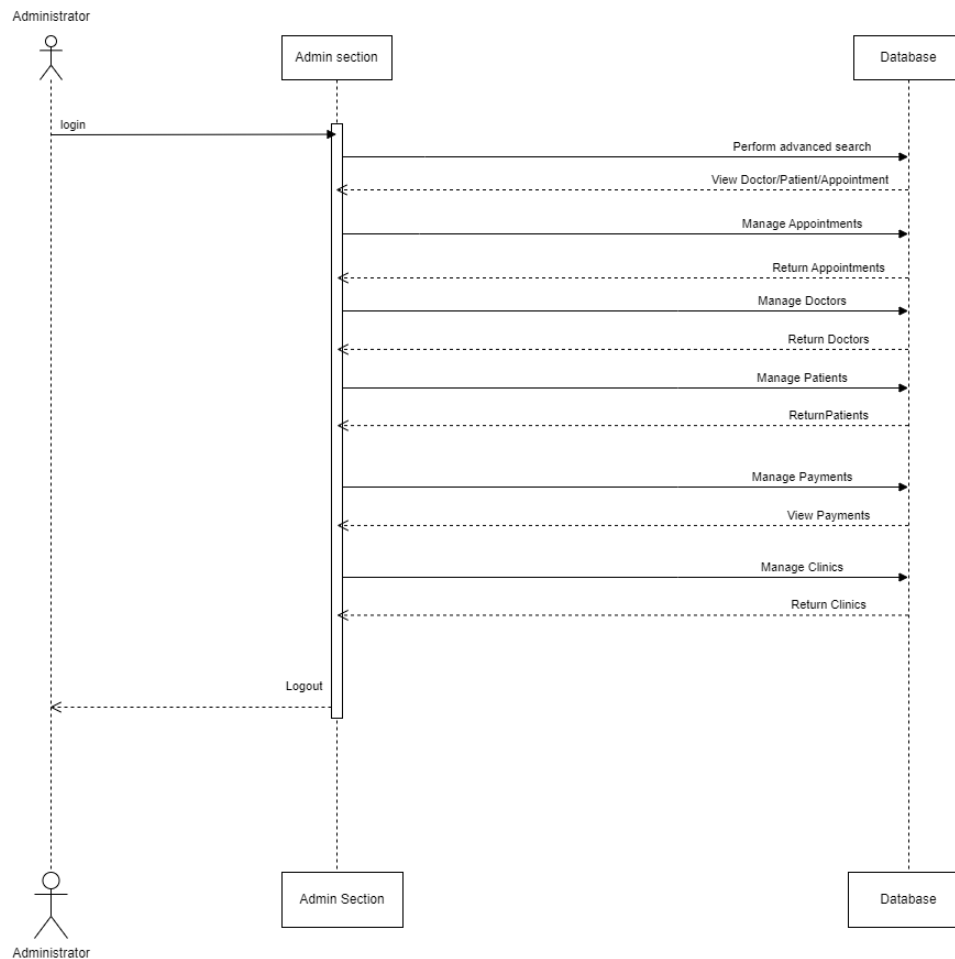


The state machine diagram shows the different states of the system and the transitions between them.

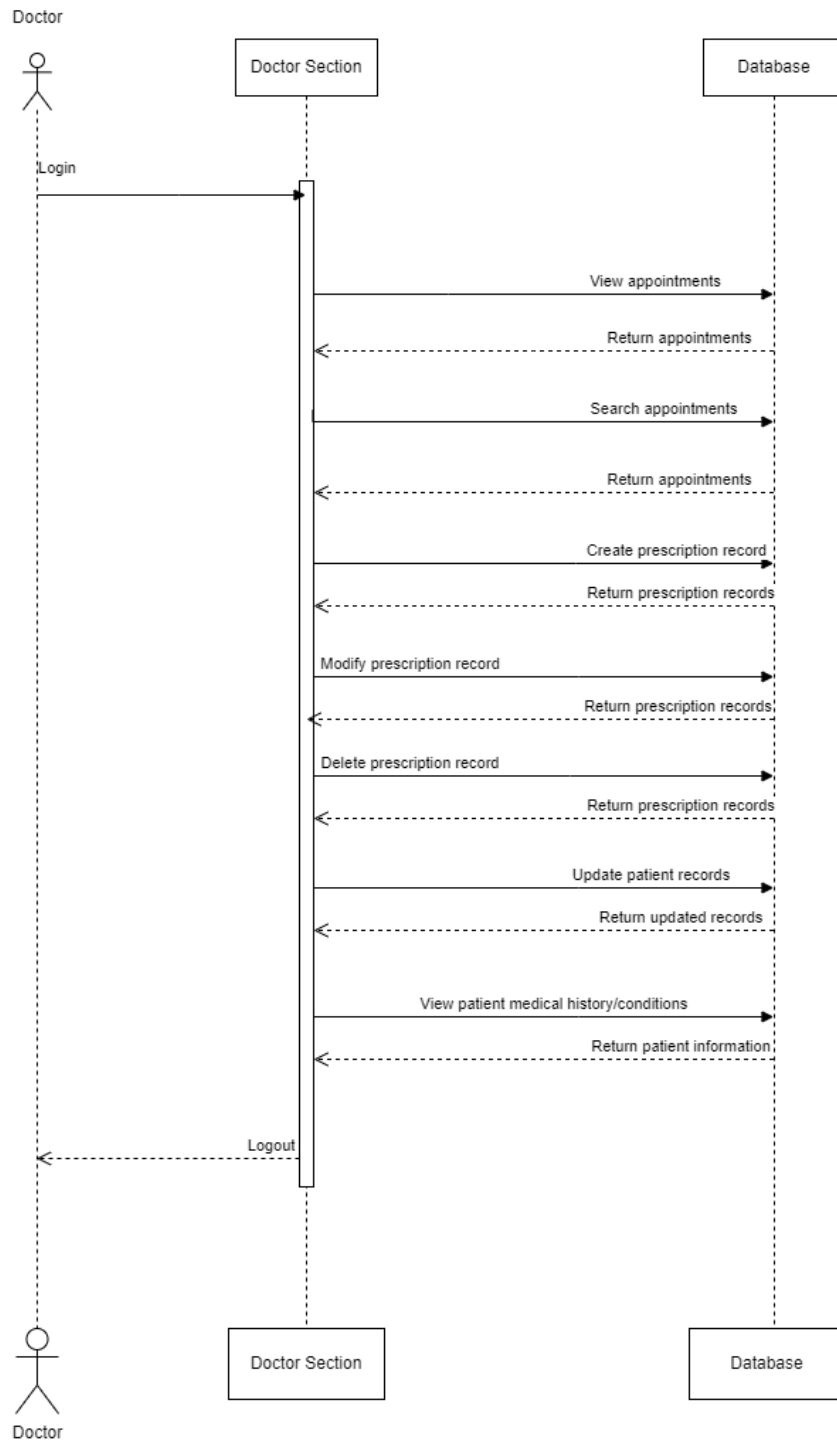
Sequence Diagram:

The sequence diagram for the medical record management system would depict the sequence interactions between actors and the system, such as administrators, doctors, and patients. It shows the sequence of messages or events exchanged between these objects or actors, and the order in which they occur. The sequence diagram provides a detailed view of how the system processes user requests and performs specific actions, such as creating new patient records, scheduling appointments, and updating medical information.

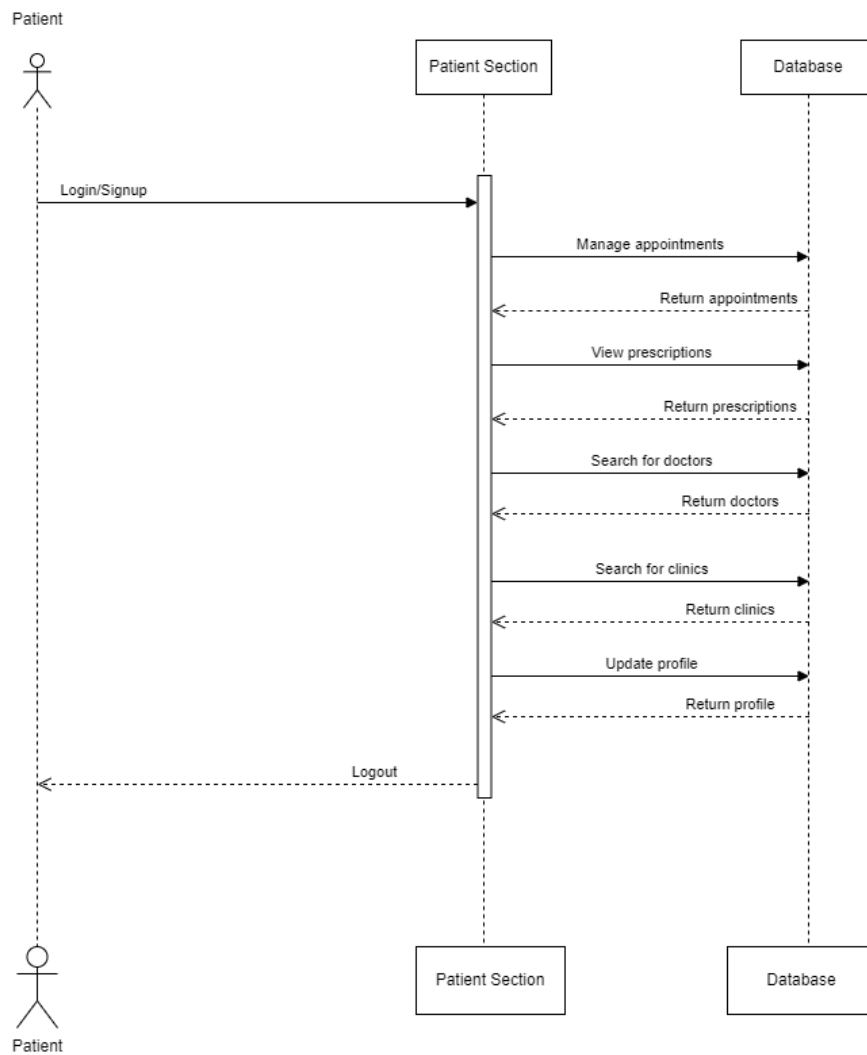
Admin:



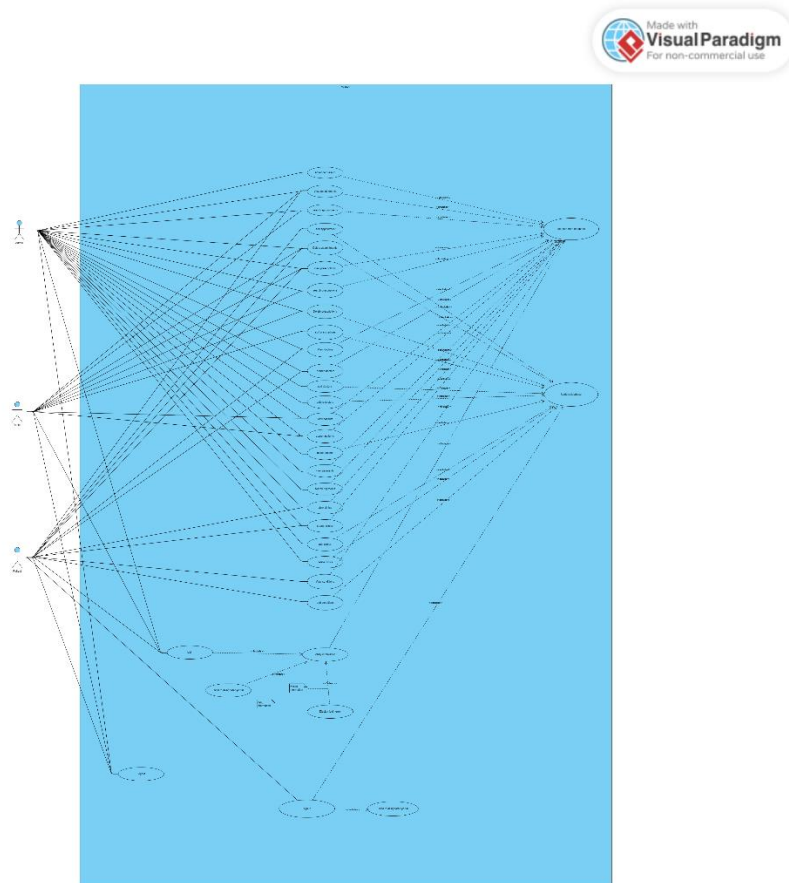
Doctor:



Patient:

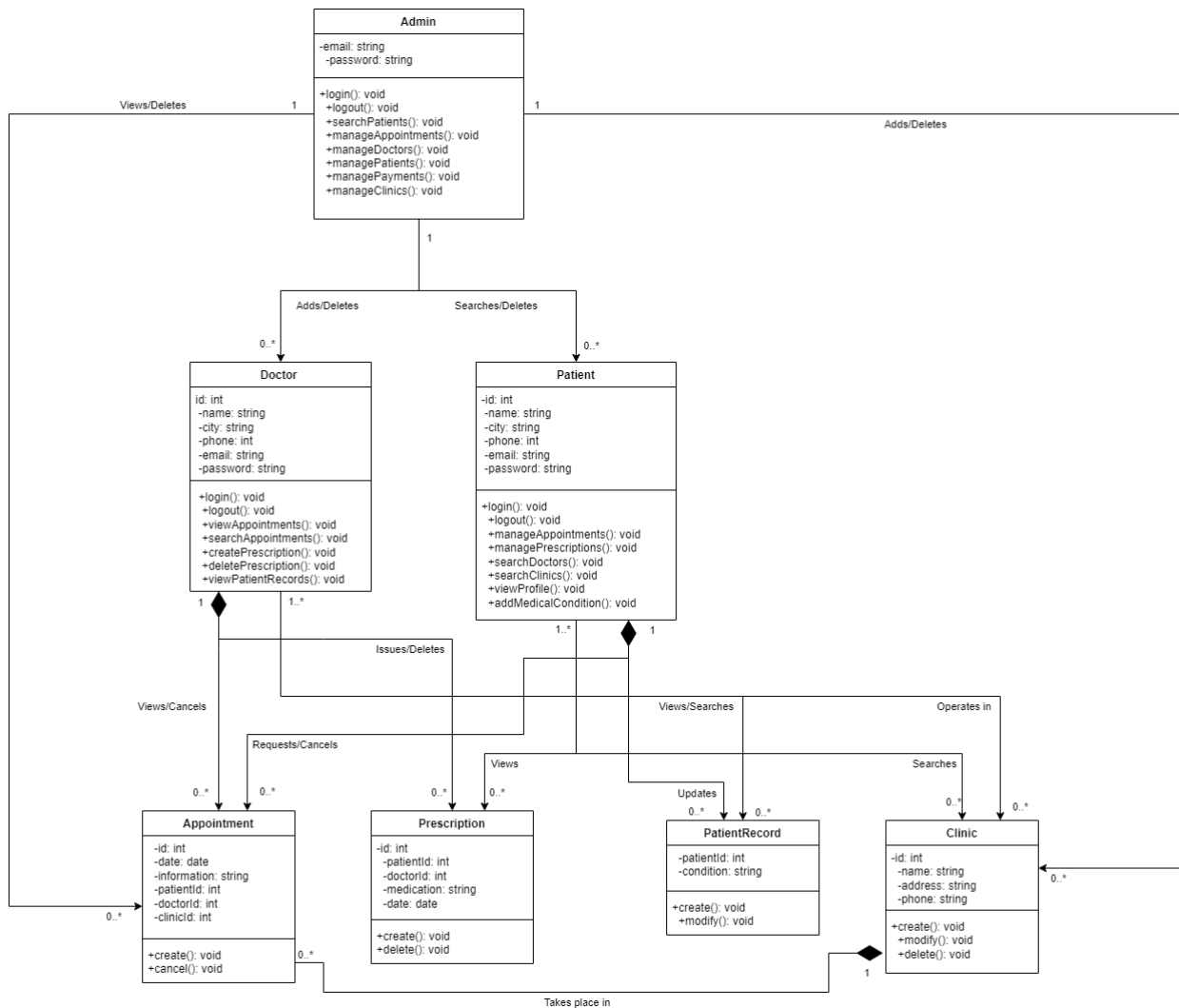


Use Case Diagram:



The use case diagram for the medical record management system provides a high-level view of the various actors and use cases. The main actors in the system are the administrator, doctor, and patient, each with their own set of use cases that they can perform within the system. For example, the administrator can manage appointments, doctors, patients, payments, and clinics, while the doctor can manage appointments, prescriptions, and patients, and the patient can manage their own appointments and prescriptions.

Class Diagram:

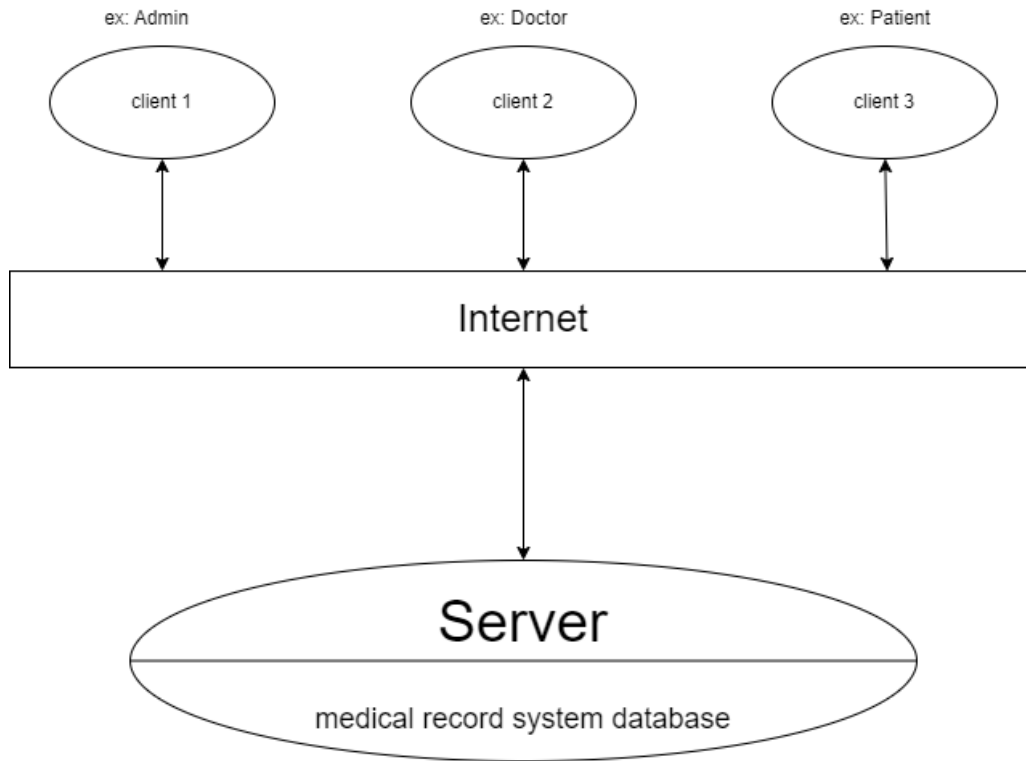


The class diagram for the medical record management system provides a detailed view of the various classes, attributes, methods, and relationships within the system. The main classes in the system are the Administrator, Doctor, Patient, Patient record, Appointment, Prescription, and Clinic. Each class has its own set of attributes and methods that are specific to its functionality within the system.

For example, the Doctor class has attributes such as name, email, and phone number, as well as methods for updating patient records and prescribing medication. The Patient class has similar attributes, as well as methods for managing appointments, prescriptions, and medical conditions. The relationships between the classes are also clearly depicted in the diagram.

System Architecture:

Client-Server Architecture:

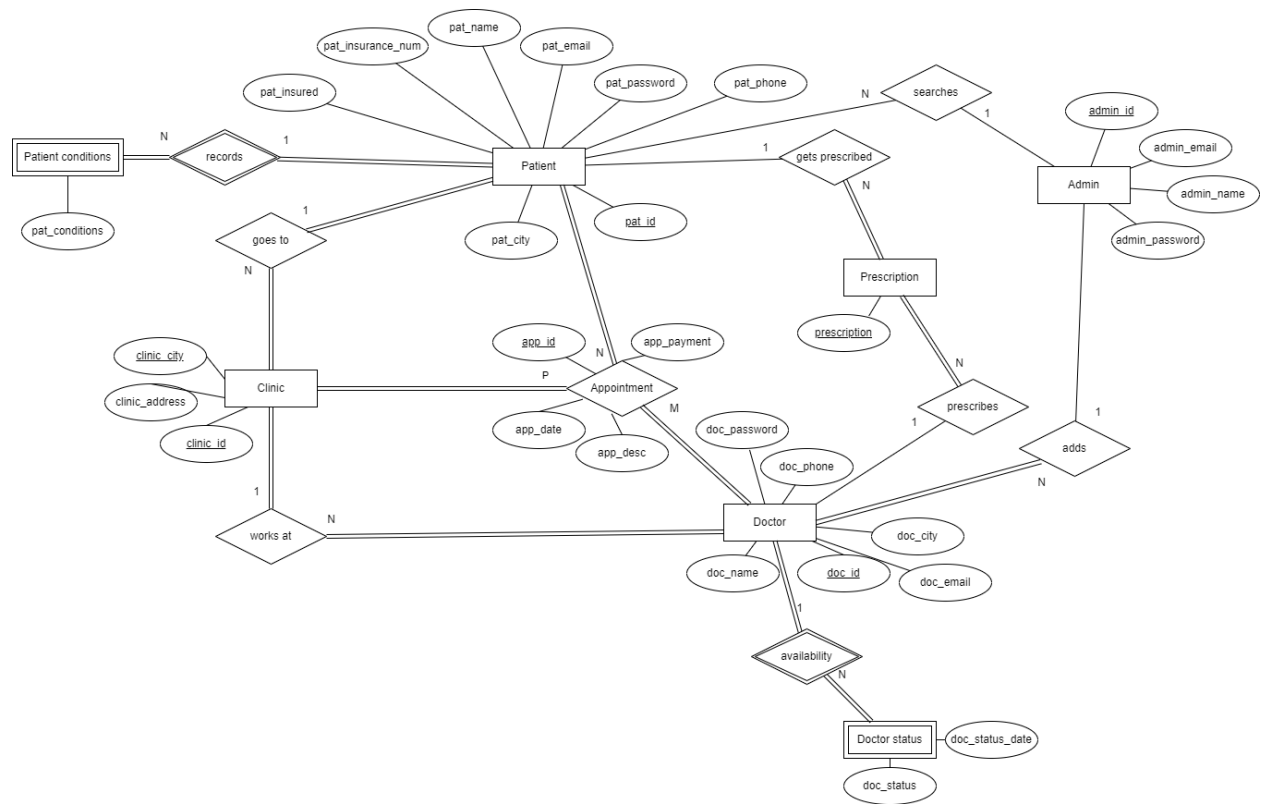


In a client-server architecture, the functionality of the system is organized into services, with each service delivered from a separate server. Clients are users of these services and access servers to make use of them. This architecture is used when data in a shared database has to be accessed from a range of locations. Because servers can be replicated, may also be used when the load on a system is variable.

The principal advantage of this model is that servers can be distributed across a network. General functionality can be availability to all clients and does not need to be implemented by all services.

The principal disadvantage is each service is a single point of failure so susceptible to denial-of-service attacks or server failure. Performance may be unpredictable because it depends on the network as well as the system. May be management problems if servers are owned by different organizations.

ER Diagram of Database:



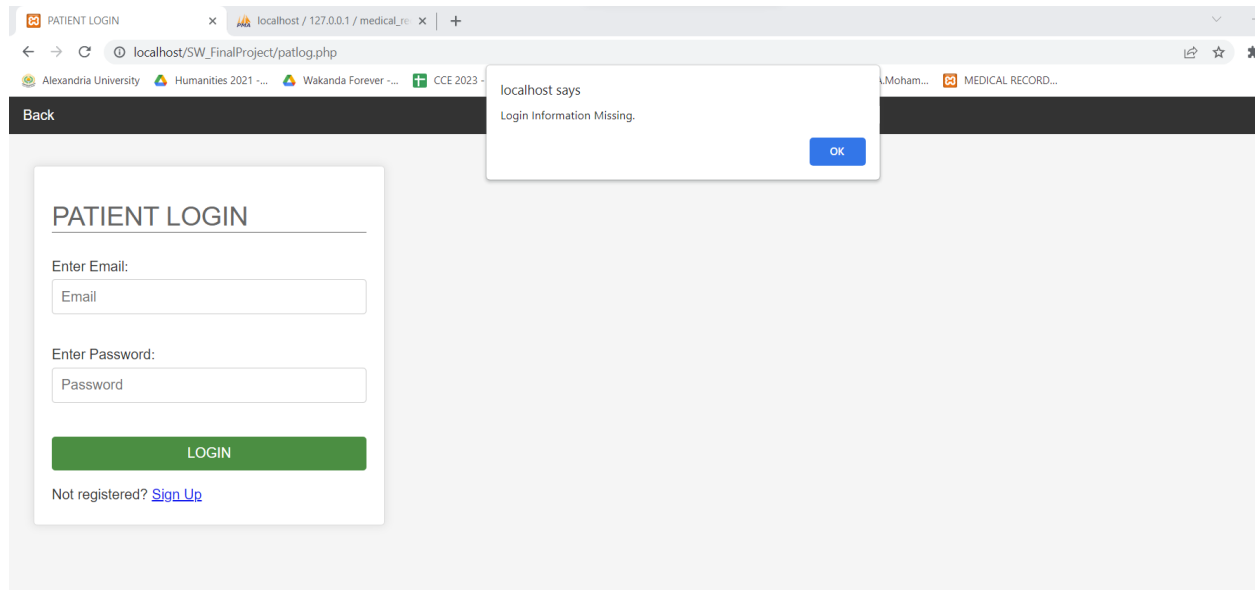
Requirement Backlog (ranked according to priority)

1. Sign up/Login: made index page and implemented login/signup to allow user to access the system.
2. Patient Profile Management: enabled patients to view their profiles, including viewing their information and conditions, and adding new conditions.
3. Admin Side Doctor Management: allowed system administrators to manage doctor records, including adding, updating, and deleting doctor information.
4. Admin Side Clinic Management: enabled system administrators to manage clinic records, including searching, adding, and deleting clinic information.
5. Doctor Side Patient Management: enabled doctors to manage patient records, including viewing all patients, searching patients, and viewing patients' conditions.
6. Patient Side Clinic Search: enabled patients to search for clinics based on specific criteria.
7. Patient Side Doctor Search: enabled patients to search for doctors based on specific criteria.
8. Patient Side Appointment Management: allowed patients to manage appointments, including scheduling, viewing appointments and canceling.
9. Doctor Side Appointment Management: allowed doctors to manage appointments, including viewing appointments, searching for appointments based on specific criteria and canceling appointments.
10. Admin Side Appointment Management: allowed system administrators to manage appointments, including viewing all appointments, searching for appointments per criteria and deleting appointments.
11. Doctor Side Prescription Management: allowed doctors to manage prescriptions, including viewing all prescriptions, searching for prescriptions by patients, adding and prescription records.

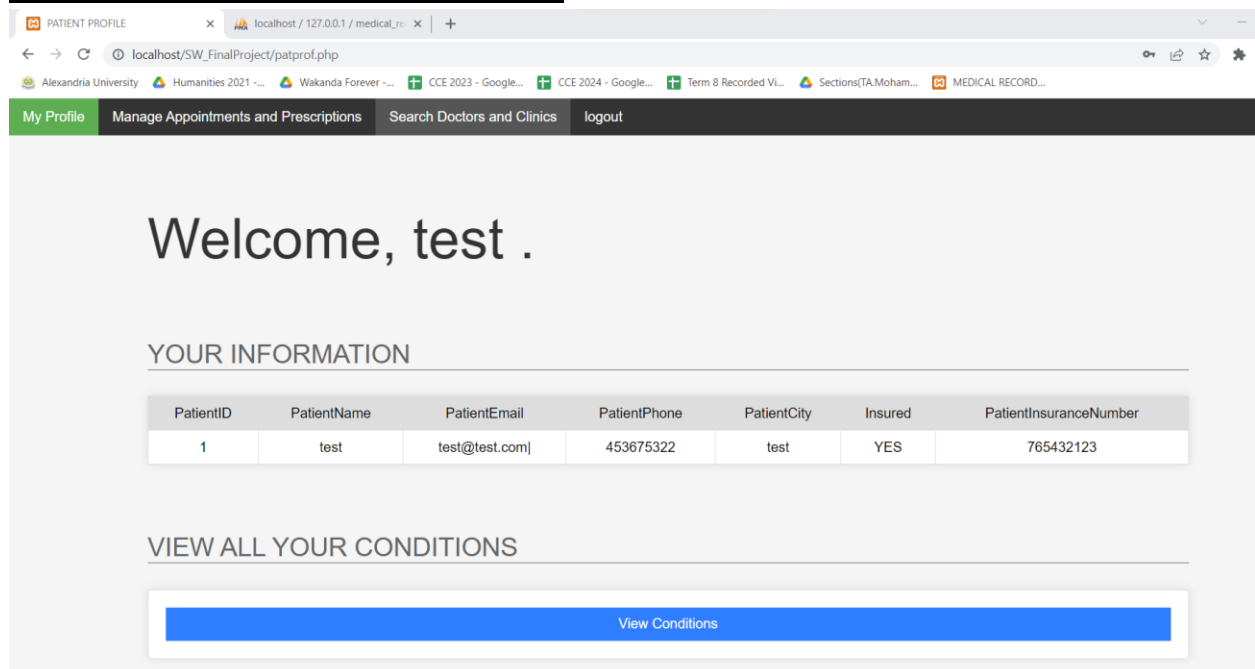
12. Patient Side Prescription Management: allowed patients to manage prescriptions, including viewing prescriptions.
13. Admin Side Prescription Management: allowed system administrators to manage prescriptions, including viewing all prescriptions, searching for prescriptions by patients or by doctor and deleting prescription records.
14. Admin Side Payment Management: allowed system administrators to manage payments, including viewing all payments and searching payments by date.

Test Cases

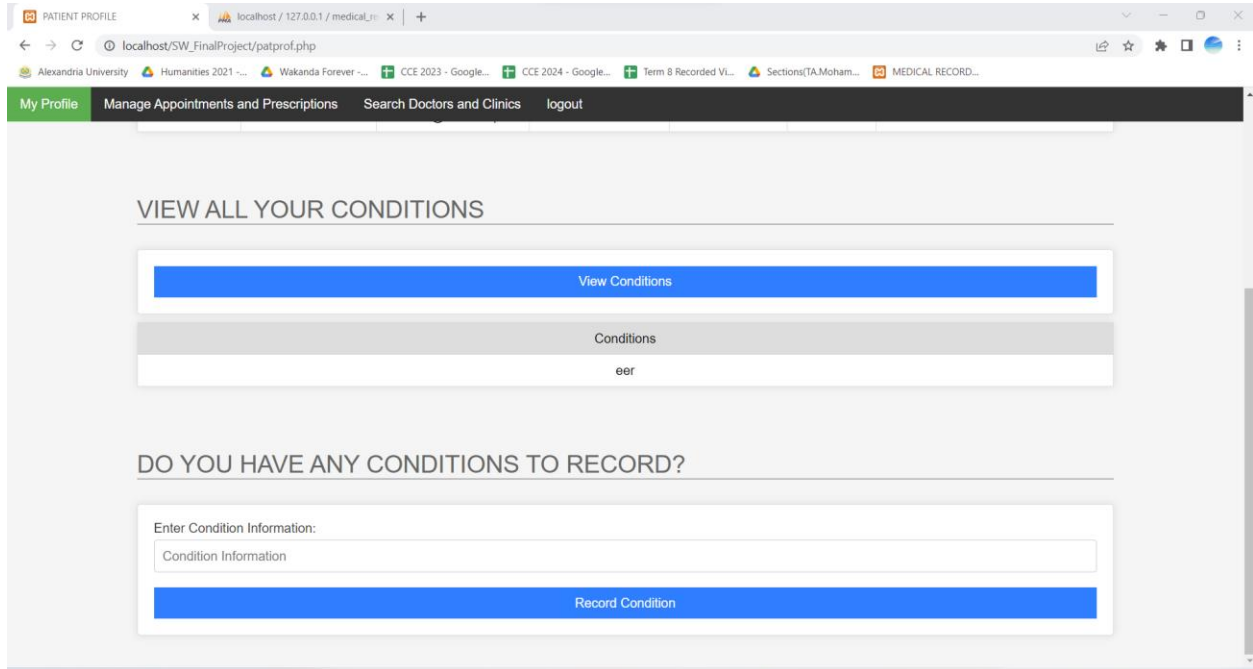
Login Validation:



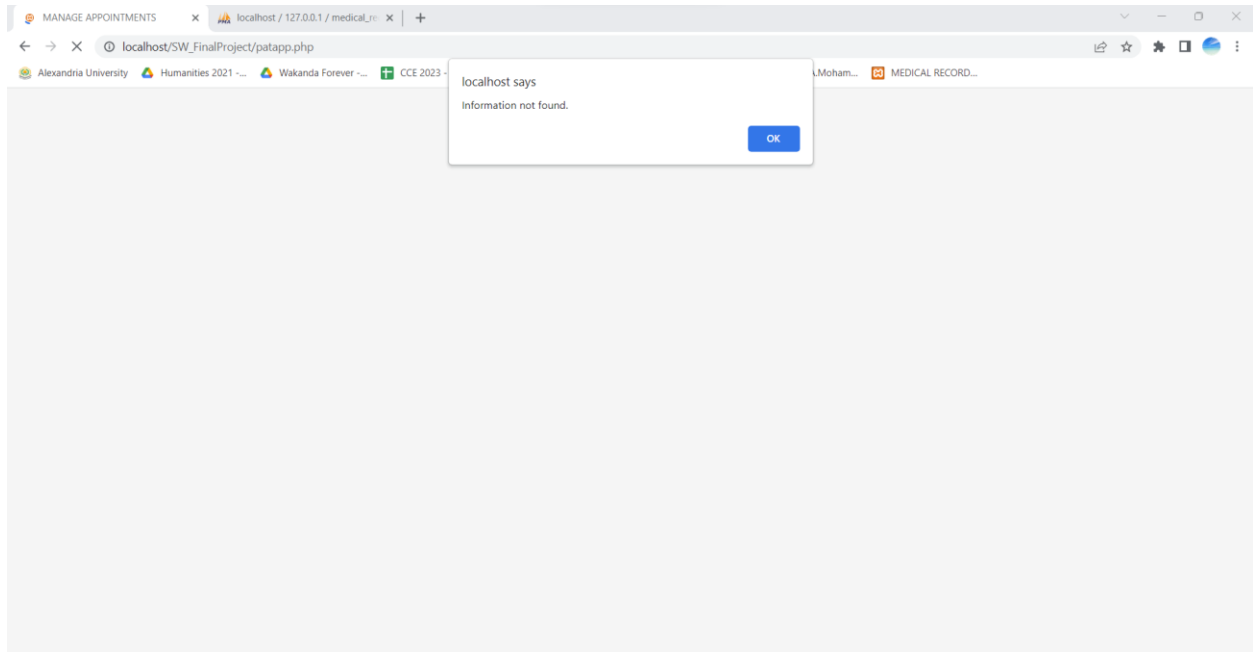
Display Patient information in profile



Add and view conditions



Viewing or searching non existing data



Patient requesting an appointment

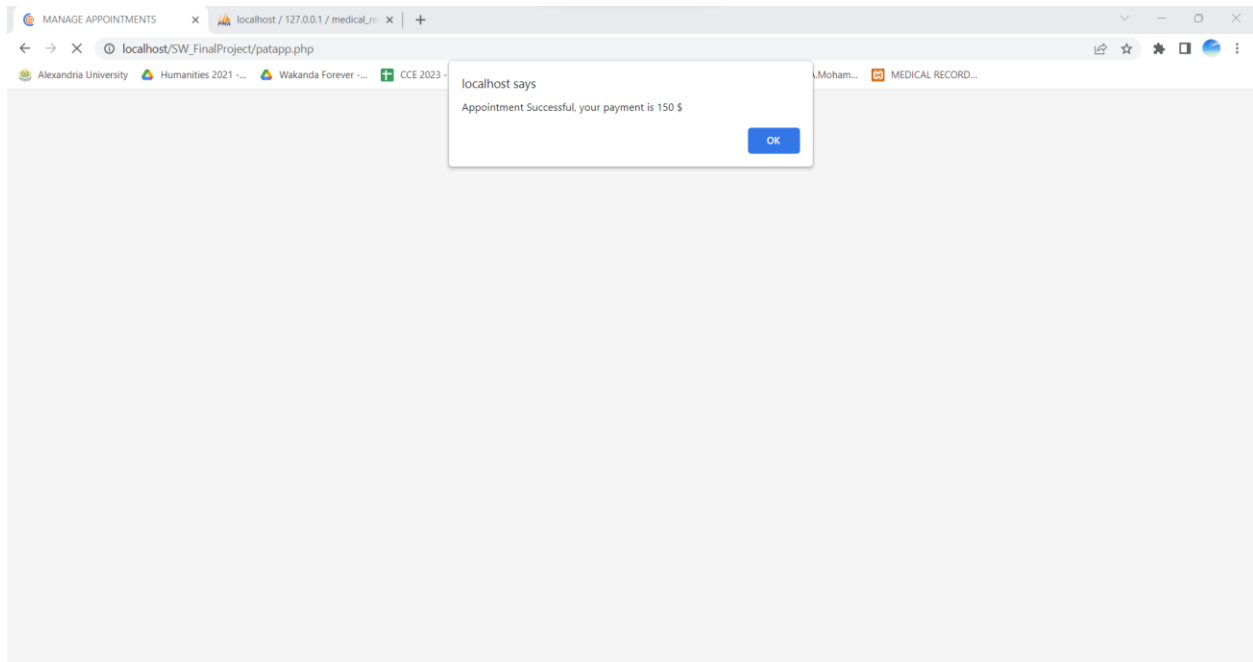
REQUEST AN APPOINTMENT

Enter Doctor ID:

Enter Appointment Date:

Enter Appointment Purpose:

Request Appointment



Viewing Appointments:

VIEW ALL APPOINTMENTS

View Appointments

AppointmentID	AppointmentDate	AppointmentInfo	Payment	PatientInsured	PatientInsuranceNumber	ClinicID	ClinicAddress	City	DoctorID	DoctorName	DoctorEmail	DoctorPhone
6	2023-12-12	Fever	150	YES	765432123	1	add1	test1	2	larry	doc@doc.com	0

Doctor issues and views prescription:

ISSUE A PRESCRIPTION

Enter Patient ID:
1

Enter Prescription:
2 pills 500mg Panadol Cold & Flu per Day

Issue Prescription

localhost / 127.0.0.1 / medical_re...
localhost/SW_FinalProject/docpre.php
localhost says
Prescription Issued.
OK

MANAGE PRESCRIPTIONS
localhost / 127.0.0.1 / medical_re...
localhost/SW_FinalProject/docpre.php
Manage Appointments
Manage Prescriptions
Manage Patients
logout

VIEW ALL PRESCRIPTIONS

View Prescriptions

Prescription	PrescriptionDate	PateintID	PatientInsured	PatientInsuranceNumber	PatientName	PatientEmail	PatientPhone
2 pills 500mg Panadol Cold & Flu per Day	2023-05-12	1	YES	765432123	test	test@test.com	453675322

SEARCH YOUR PRESCRIPTIONS BY PATIENT

Patient views prescriptions:

MANAGE APPOINTMENTS x localhost / 127.0.0.1 / medical_r... x

localhost/SW_FinalProject/patapp.php

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My Profile Manage Appointments and Prescriptions Search Doctors and Clinics logout

VIEW ALL PRESCRIPTIONS

View Prescriptions

Prescription	PrescriptionDate	DoctorID	DoctorName	DoctorEmail	DoctorPhone
2 pills 500mg Panadol Cold & Flu per Day	2023-05-12	2	larry	doc@doc.com	0

VIEW ALL APPOINTMENTS

View Appointments

Searching for Clinics and Viewing All Clinics:

VIEW ALL CLINICS

View Clinics

SEARCH CLINICS

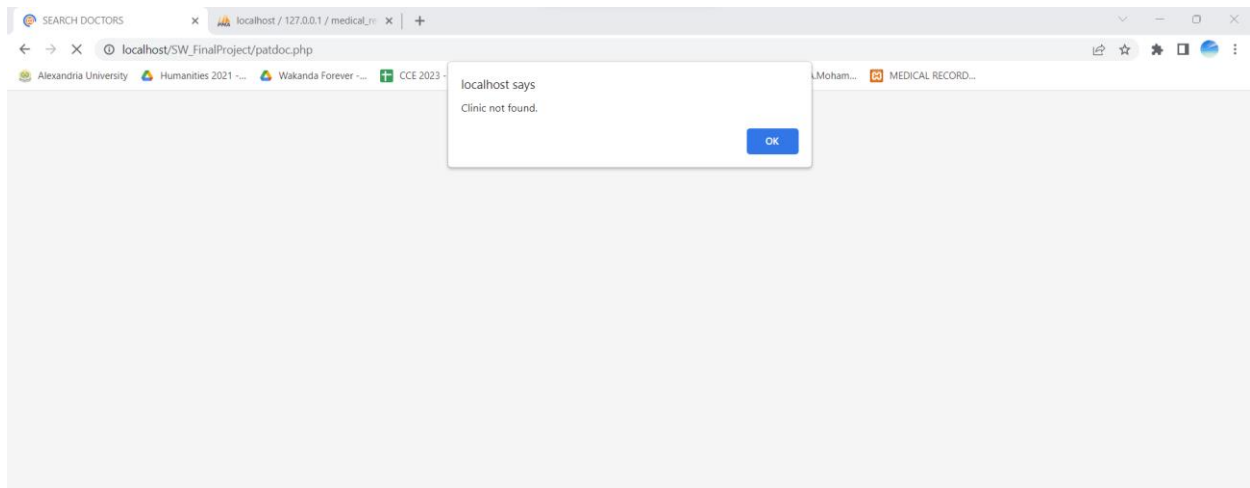
Enter Clinic ID:

2

Enter Clinic City:

toronto

Search Clinic



VIEW ALL CLINICS

View Clinics		
ClinicID	ClinicCity	ClinicAddress
1	test	add1

SEARCH CLINICS

Enter Clinic ID:

Enter Clinic City:

VIEW ALL CLINICS

View Clinics		
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SEARCH CLINICS

Enter Clinic ID:

Enter Clinic City:

ClinicID	ClinicCity	ClinicAddress
1	test	add1

Searching for doctors and Viewing all doctors:

View Doctors

DoctorID	DoctorName	DoctorEmail	DoctorPhone	DocorCity
2	larry	doc@doc.com	0	test
3	Yassin	y@y.com	123456	test
4	mohamed	m@m.com	123455	test

SEARCH DOCTORS

Enter Doctor ID:

Enter Doctor Name:

Enter Doctor Email:

SEARCH DOCTORS

Enter Doctor ID:

Enter Doctor Name:

Enter Doctor Email:

Enter Doctor Phone:

Enter Doctor City:

Search Doctor

DoctorID	Name	Email	Phone	City
2	larry	doc@doc.com	0	test

Payments Management:

Manage Appointments and Prescriptions

Manage Doctors

Manage Patients

Manage Payments

Manage Clinics

logout

VIEW ALL PAYMENTS

View Payments

PatientID	PatientInsured	PatientInsuranceNumber	AppointmentID	Payment	AppointmentDate
1	YES	765432123	6	150	2023-12-12
2	YES	4444	7	150	2023-12-12

SEARCH PAYMENTS BY DATE

Enter Starting Date:

mm/dd/yyyy

Enter Ending Date:

mm/dd/yyyy

Search Payment

Adding and deleting doctors:

Search

Manage Appointments and Prescriptions

Manage Doctors

Manage Patients

Manage Payments

Manage Clinics

Logout

VIEW ALL DOCTORS

View Doctors

DoctorID	Name	Email	Password	Phone	City
2	larry	doc@doc.com	9a09b4dfa82e3e665e31092d1c3ec8d	0	test
3	Yassin	y@y.com	202cb962ac59075b964b07152d234b70	123456	test
4	mohamed	m@m.com	202cb962ac59075b964b07152d234b70	123455	test

SEARCH DOCTORS

Enter Doctor ID:

ADD DOCTORS

Enter Doctor Name:

ziad

Enter Doctor Email:

z@z.com

Enter Doctor Password:

123

Enter Doctor Phone:

11111111

Enter Doctor City:

newyork

Add Doctor

MANAGE DOCTORS

localhost / 127.0.0.1 / medical_r...

localhost / SW_FinalProject/managedoc.php

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CCE 2023 ...

localhost says
Doctor Added Successfully.

OK

Moham...

MEDICAL RECORD...

VIEW ALL DOCTORS

View Doctors					
DoctorID	Name	Email	Password	Phone	City
2	larry	doc@doc.com	9a09b4dfda82e3e665e31092d1c3ec8d	0	test
3	Yassin	y@y.com	202cb962ac59075b964b07152d234b70	123456	test
4	mohamed	m@m.com	202cb962ac59075b964b07152d234b70	123455	test
5	ziad	z@z.com	202cb962ac59075b964b07152d234b70	11111111	newyork

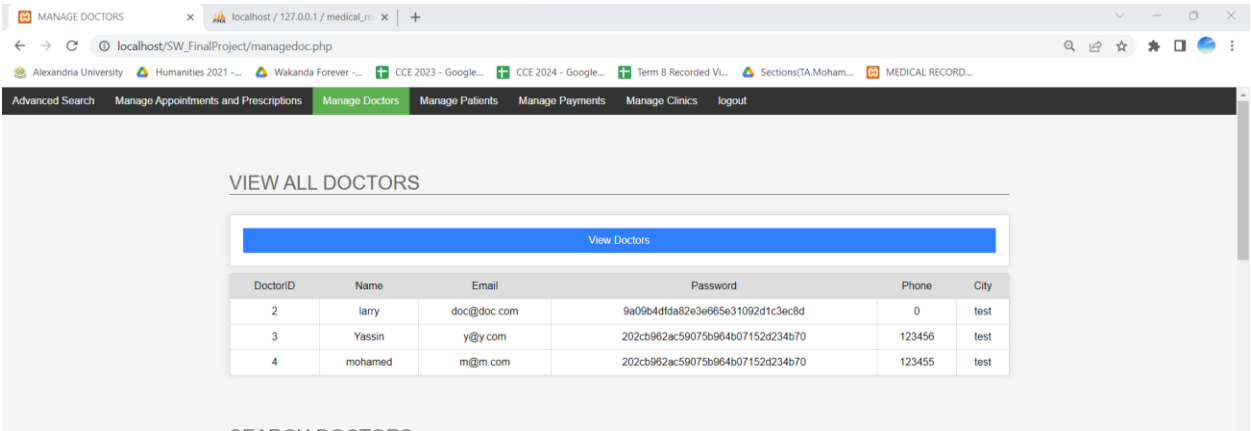
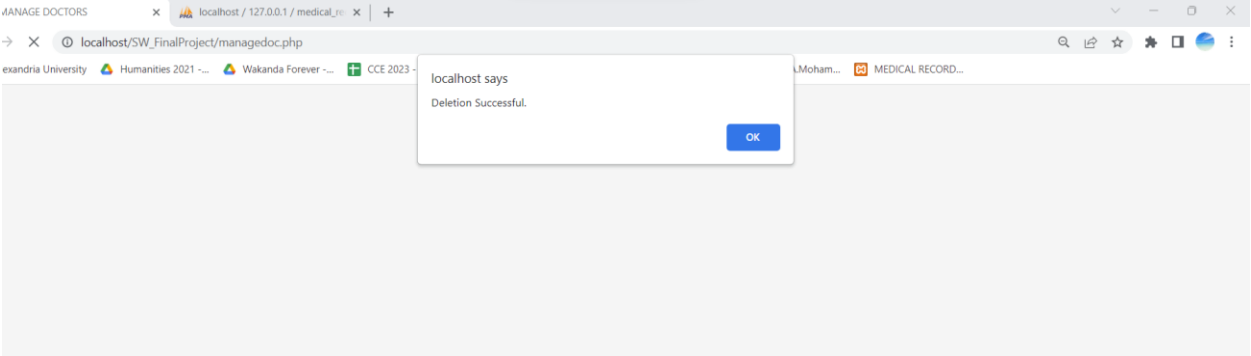
SEARCH DOCTORS

DELETE DOCTORS

Enter Doctor ID:

5

Delote Doctor



UPDATE DOCTOR STATUS

Enter Doctor ID:

Enter Doctor Status:

Enter Status Date:

Update Status

VIEW ALL DOCTOR STATUS UPDATES

View Status

DocotorID	Status	StatusDate
2	available	2023-12-12

Advanced Search:

Advanced Search

Manage Appointments and Prescriptions

Manage Doctors

Manage Patients

Manage Payments

Manage Clinics

logout

ADVANCED SEARCH

Patient Information

Enter Patient ID:

1

Enter Patient Name:

Patient Name

Enter Patient Email:

Patient Email

Enter Patient Phone:

Patient Phone

Enter Patient City:

Patient City

Enter Patient Insurance Number:

mm/dd/yyyy

Enter Appointment Description:

Appointment Description

Search

AppointmentID	AppointmentDate	Payment	ClinicID	InsuranceNumber	PatientID	PatientName	PatientEmail	PatientPhone	PatientCity	DoctorID	DoctorName	DoctorEmail	DoctorPhone	DoctorCity
6	2023-12-12	150	1	765432123	1	test	test@test.com	453675322	test	2	larry	doc@doc.com	0	test