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وزارة التعليم العالي
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Online Clinic Reservation And Evaluation System

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Department of Computer Science and Information

Graduation Project

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Abstract

Patients can book the clinic they want with the mobile app, book clinics and evaluation, as well as they can get confirmation of reservation, then they can evaluate the clinic and

can see all the assessments for other clinics

The application provides the ability to add clinics as well as doctors and patients can view doctor information

The employee at the clinic can enter the application, view all reservations, and confirm them

Certificate by student

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Chapter 1: Introduction

1.1 Definition of the problem

The current problem is that passengers who want to use public transport stations find it difficult to have the following problems:

Difficulty in knowing the location of public transport stations

Difficulty knowing which stations and stops are near you

They cannot know what trips to a particular station are, what their destination is, as well as departure time and arrival time

1.1.1. Goals

Shows all clinic offers to collect most medical clinics in one place,

The site will provide the reservation with any doctor or know the location of the clinic, and it will also show the branches of clinics and offers, doctors and there will be a presentation to the doctor and his specialization and evaluation of it and the clinics in it and a file that the doctor tracks himself and cares about it and the possibility to follow up on the evaluation of patients to the doctor and the clinic.

1.1.2 Objectives

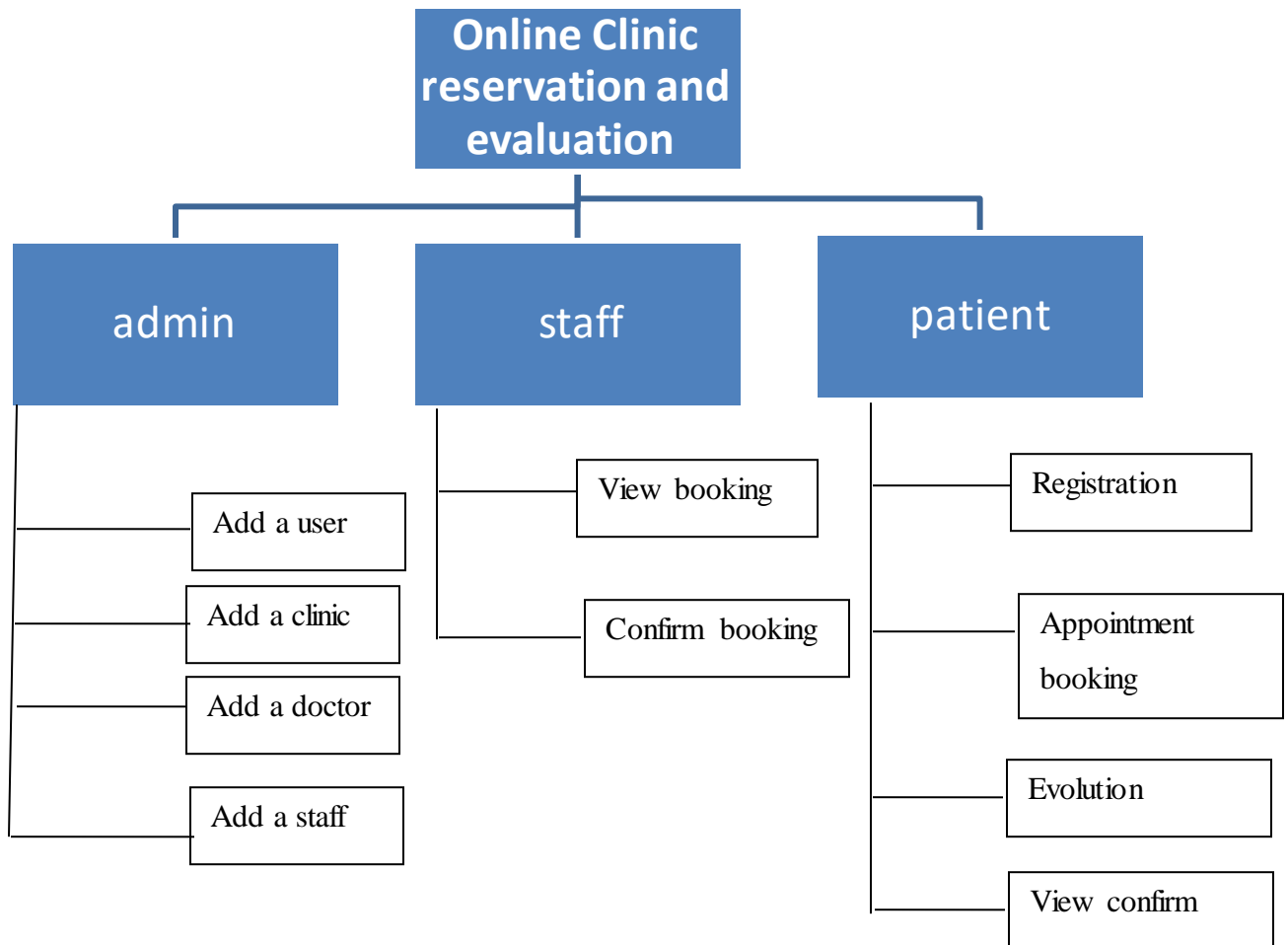
- To develop a system that allows users to have control over their appointment making service.
- To facilitate the patients with real time healthcare scheduling.
- To manage staff resources needed for managing appointments.
- To maximize operation hours.
- To make the use of online platform for less customer inconvenience and high productivity among staff.
- To optimize time savings and monetary savings as both staff time and services translate into expenses and revenue.

1.1.3 Critical Success Factors

An appointment can be made at the clinic by the patient

Clinic level can be evaluated

1.1.4 Organization chart and responsibilities



1.2 General rules

The system will be developed to work on smartphones, for this requires the team to have experience to work on the Java programming language as well as Android Studio

Computers should be available in high specifications

Chapter Two: System Analysis and Specification

2.1 Introduction

This chapter provides a detailed explanation of the UML diagrams used in the system where we will design the data flow diagram as well as the use case diagram. Also we will design the diagram of the objects and the relationship between them, Entity Relationship Diagram that displays the logical design of the database

2.2 Description of Data Flow Diagram

2.2.1 Context Diagram:

Context design determines how different users interact with the system. The system administrator manages all system functions such as bus and station management, station staff as well as temporary stopping points. It is also able to view reports and search in the system. The station employee logs in and then executes his own operation, which is adding flight information. Finally, a passenger can use the application where he selects his location and then reviews the stations near him, as well as temporary bus stops points. Also, all information about trips at a particular station can also be displayed. Know the location of the station

2.2.2 Overview diagram (level 0)

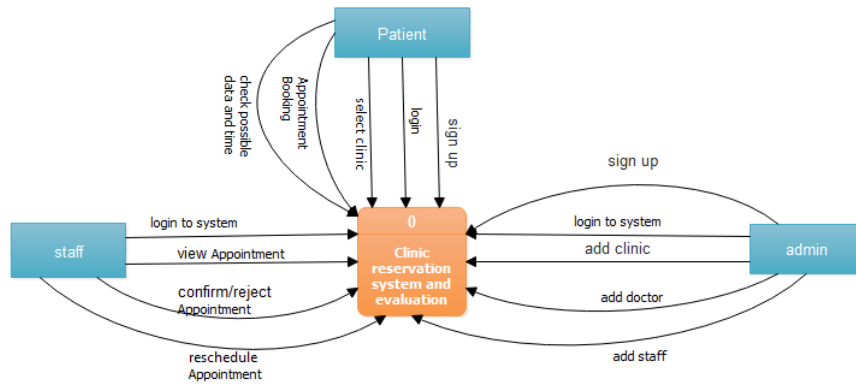


Figure 0.1 Context diagram

2.2.3 Detailed DFDs:

The data flow diagram describes the data flow within the system as it shows the various data stores, processing and outputs retrieved from the system

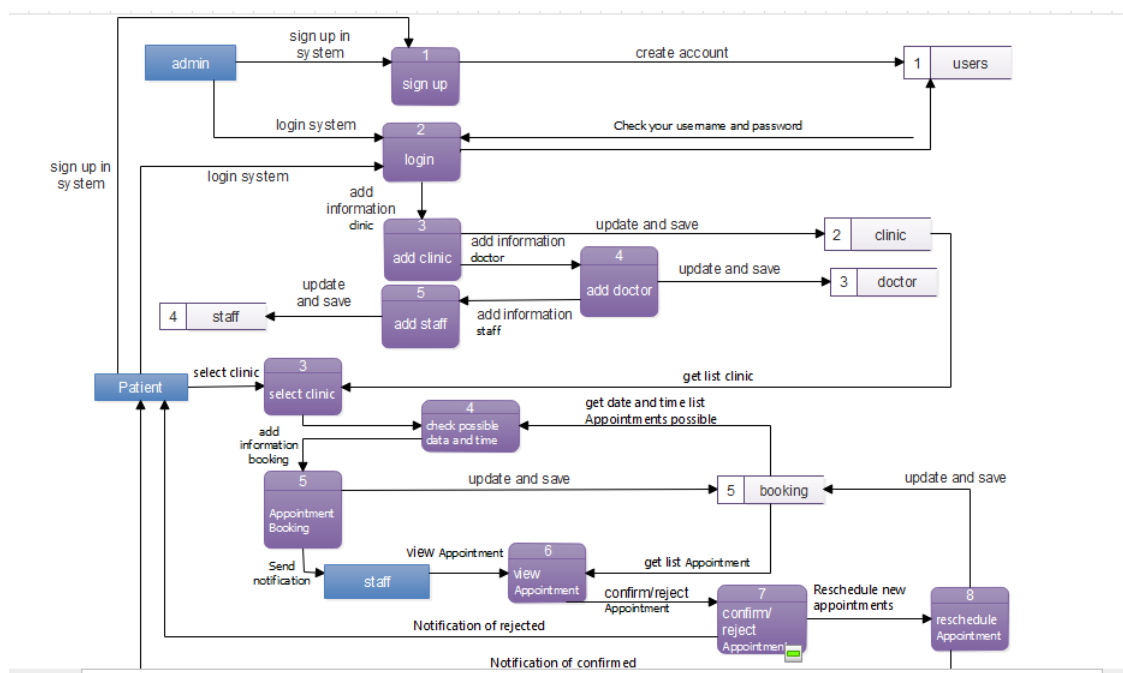


Figure 0.2 data flow diagram

2.3 Data Modeling:

- **Entity Relationship Diagram (ERD)**

The entity relationship diagram describes relationships between different entities in a system database. Relationships help in the joint search from different database tables

2.3.1 Description of Entities

- Patient: Patient data such as name, address, phone number etc. are saved.
- Doctor: The doctor's data such as name, address, phone number, as well as CV
- Moderator: Moderator data such as name and address are saved
- Manager: The manager account is kept
- Clinic: The clinic data saves the name, address and phone number
- Evaluation: The assessments are saved to the clinic
- Reservation of an appointment: An appointment is reserved by the patient as he enters information such as the clinic's name, reservation date and time

2.3.2 Description of relations:

The diagram shows the relationships between the different entities in the system database in the backend of the system

- Patient- Appointment Booking Relationship

This is a one-to-many relationship in which a Patient can create more Appointment Booking

- admin- clinic Relationship

This is a one-to-many relationship in which an admin can add more clinics

- clinic –doctor

This is a one-to-many relationship in which a clinic works there more doctors

- clinic- staff

A clinic has more staff in this one-to-many relationship

- admin- staff

An admin adds more staff in this one-to-many relationship

- staff- Appointment Booking

A staff manage more Appointment Booking in this one-to-many relationship

- Patient- Evaluation clinic

A Patient Evaluation one clinic in this one-to-0 or one relationship

- admin - doctor

A admin add more doctor in this one-to-many relationship

- clinic- AppointmentBooking

A clinic has more AppointmentBooking in this one-to-many relationship

- **Use case Diagram**

The following use case diagram describes the set of actions that the Clinic reservation system and evaluation can perform in collaboration with different type of users of the system

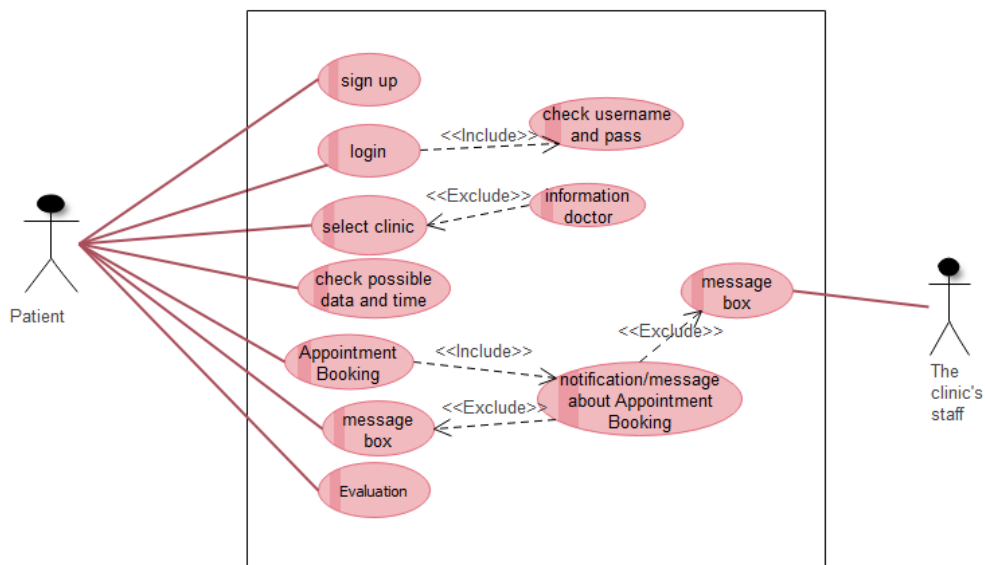


Figure 0.4 use case(patient)

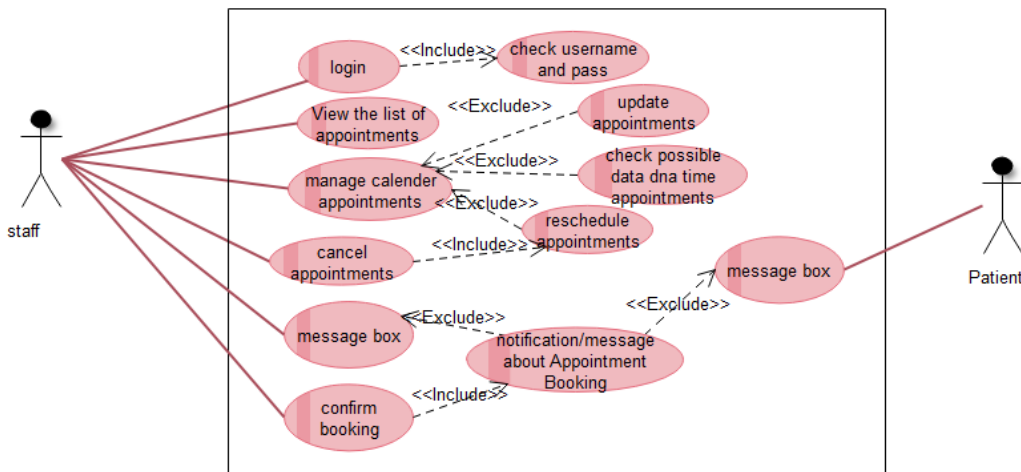


Figure 0.5 use case(staff)

- **Class Diagram:**

The following diagram shows the static view of bus traffic plan system which shows a collection of classes, interfaces, associations, collaborations and constraints used in this system.

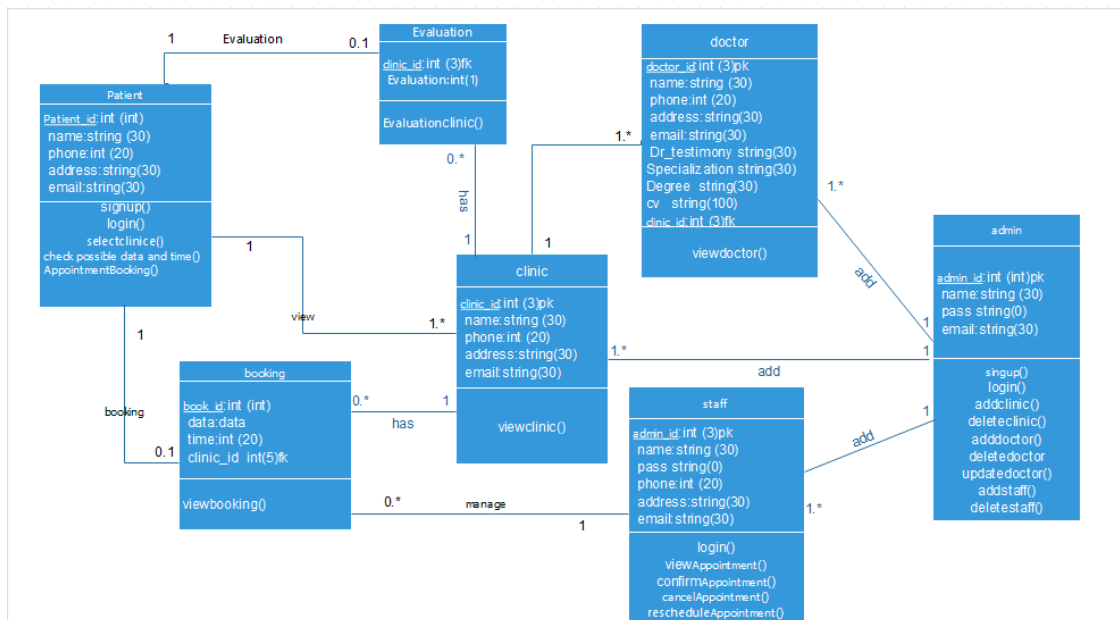


Figure 0.6class diagram

2.7 activity diagram

Activity Diagrams are used to model different aspects of a system. The following activity diagram .It displays the activity flow for a specific use case

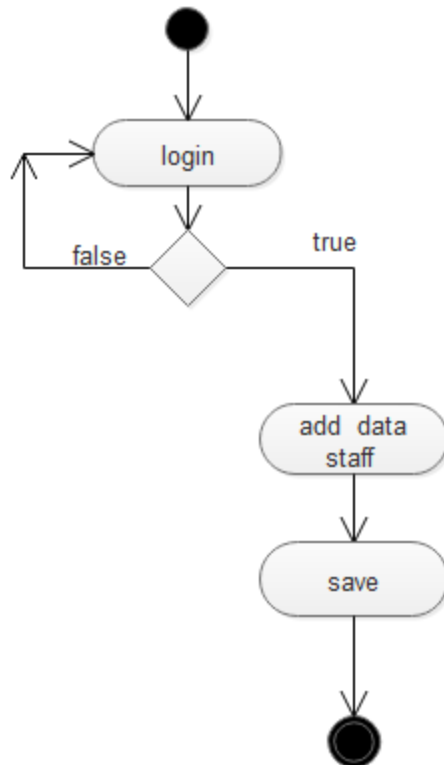


Figure 0.8 activity diagram admin

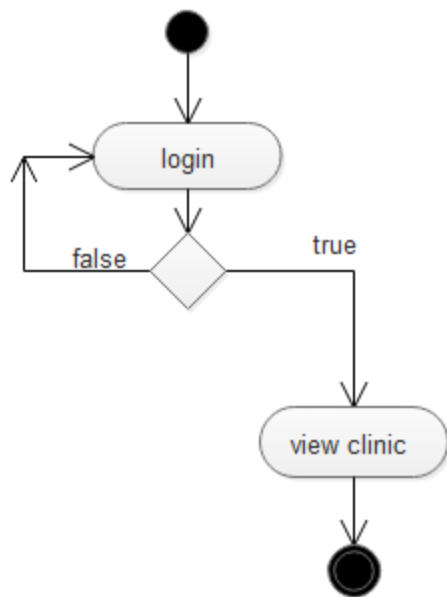


Figure 0.9 activity diagram patient

Conclusion

This chapter identifies Online Clinic reservation and evaluation system analysis. Aspects of analysis discussed are the design of system diagrams, by providing a DFD, ERD, and class diagram as well as a use case diagram the next chapter examines the design of a bus traffic plan system. The next chapter depends on the design specifications mentioned in this chapter.

Chapter 3: System Design

3.1 Description of procedures and functions:

3.1.1 Functional Requirements:

Patient:

- The user should be able to record and manage their appointments online at any time.
- The database should store all information efficiently without any information loss.
- The user must be able to access the system
- The user should be able to check the date and time possible to book an appointment
- The user should be able to evaluate the clinic
- The user should be able to receive messages and notifications from the clinic employee

Staff

- Staff The should be able to log into the system using his username and password
- The Staff can manage all appointments made with him on the system.
- The Staff must be able to show appointments to the employee
- The Staff must be able to manage appointments
- The Staff must be able to delete an appointment
- The Staff must be able to reschedule appointments
- The Staff must be able to confirm the appointments
- The Staff must be able to receive messages and notifications from the system

Admin:

- The admin must be able to register in the system
- The admin must be able to log into the system using his username and password
- The admin should be able to add a clinic in the system

- The admin should be able to add a doctor to the system
- The admin should be able to add an employee to the system
- The admin should be able to delete a clinic in the system
- The admin should be able to delete a doctor in the system
- The admin should be able to delete an employee in the system

3.1.2 Non-functional requirements

- Portability requirements:

The website must be compatible with various popular web browsers (Google Chrome, Mozilla Firefox, Opera, Safari, and Internet Explorer 8+)

- Reliability requirements:

The probability of failure is less than 0.01%

Duration of operation not less than 99%

Less than 30 minutes are required to recover from system failure.

- Usability requirements:

Interface elements (such as menus) should be easy to understand

The user should be able to learn to use the system in less than 30 minutes.

The registration time is less than 5 minutes.

Error messages should explain how to recover from the error

Irretrievable actions must require confirmation

Responsive design must be implemented

- Space requirements:

The user only needs enough disk space and RAM for the web browser

Performance requirements:

All processes implemented in the system must respond within 5 seconds

The system must support 100 concurrent users

- Implementation requirements:

All ingredients and ingredients must be free of charge.

All plugins must work properly and meet performance and reliability requirements.

- Standards requirements:

The system should be as close as possible to the quality standard

- Ethics requirements:

Users should be informed of their rights and obligations when visiting them.

Patients should be notified of all service risks

- Interworking requirements:

The system must correctly interact with the MySQL database.

- Safety requirements

The password must be at least 8 characters, 1 Upper case, 1 lower case and 1 number.

The website must use different technologies in order to have a secure data transfer to the database

- Privacy Requirements:

All user data cannot be sold or distributed to other entities without its prior approval.

- regulatory requirements

The company will have an improved business plan

The company must have all the employees necessary to perform its work.

There should be a meeting every week to analyze how the work is going. Everything has to be documented.

- Scalability Requirements:

In the event that more bandwidth or disk space is needed, the system should be prepared for these situations.

When increasing site resources, there can be no penalty for response time or more errors than usual.

3.2 Relation database schema:

3.2.1 Table:

- staff
- doctor
- clinic
- Patient
- Appointment Booking
- Evaluation clinic
- User
- Privilege

3.2.2 Attribute:

staff			
attribute	Type	Length	Notice
Staff id	Integer	10	Primary key
name	String	50	
Clinic id	Integer	10	Foreign key from table Clinic
address	String	50	
phone	Integer	1	
email	String	50	

Table3.1 staff

Patient			
attribute	Type	Length	Notice
Patient id	Integer	10	Primary key
name	String	50	
Password	Integer	10	
phone	Integer	50	
address	String	50	
email	String	50	

Table3.2 Patient

clinic			
attribute	Type	Length	Notice
Clinic id	Integer	10	Primary key
name	String	50	
phone	String	50	
address	String	50	
email	String	50	

Table3.3 clinic

doctor			
attribute	Type	Length	Notice
Doctor id	Integer	10	Primary key
name	String	50	
phone	String	50	
address	Integer	1	
email	Integer	10	
CV	File		File PDF
Clinic id	Integer	10	Foreign key from table Clinic

Table3.4 doctor

Appointment Booking			
attribute	Type	Length	Notice
Book id	Integer	10	Primary key
Clinic id	String	50	Foreign key from table Clinic
Patient id	Integer	10	Foreign key from table Patient
date	date		
time	string	10	

Table3.5 Appointment Booking

Evaluation clinic			
attribute	Type	Length	Notice
Clinic id	Integer	10	
evaluation	Integer	1	

Table3.6 Evaluation clinic

User			
attribute	Type	Length	Notice
User ID	Integer	3	Primary key
User name	String	50	
Password	Integer	10	
doctor id	Integer	10	Foreign key from table doctor
Staff id	Integer	10	Foreign key from table Staff

Table3.7User

Privilege			
attribute	Type	Length	Notice
Privilege ID	Integer	10	Primary key
User id	String	50	Foreign key from table user
Privilege add	Integer	1	
Privilege edit	Integer	1	
Privilege delete	Integer	1	
Privilege select	Integer	1	

Table3.8Privilege

3.2.3 Relations:

- Between table staff and clinic:
clinic ID in table staff is foreignkey from table Clinic

- Between table doctor and clinic:
clinic ID in table doctor is foreign key from table Clinic

- Between table Appointment Bookingand table clinic:
Clinicid intable Appointment Bookings foreign key from table Clinic

- Between table Appointment Booking and table patient:
Patient id in table Appointment Bookings foreign key from table patient

- Between table user and table doctor:
Doctorid in table useris foreign key from table doctor

- Between table user and table staff:
staffid in table useris foreign key from table staff

- Between table Privilegeand table user:
userid in table Privilegeis foreign key from table user

3.2 Hardware and software requirements

Application will be developed as client server application for android smartphone. In order to complete this application, we need the following tools and programming languages.

3.2.1 Hardware Requirements

The specifications of the laptop that is needed to complete this project.

CPU	Core I16
RAM	16GB
Monitor	+14"

Table 3.7 Hardware specifications

3.2.2 Software requirements

To complete this project, several programs are needed.

1. Windows 10: It is the operating system of the laptop that will be used to complete this project.



Figure 03.10 Windows 10

2. Microsoft Word: Microsoft Word is text editor from Microsoft Company. The Word is the most used text editor over the world. It has powerful features and tools. In this project, the Word will be used for writing the report.



Figure 3.11 Microsoft Word

3. EDRAW MAX: We used the edrawmax program to create diagrams like use Case, Class Diagram and Activity Diagram. Also create a prototype of the interfaces



Figure 3.12 EDRAW MAX

4. Android Studio: It is an application developing platform that makes it easy for developers to write source code for Android applications and allows developers to preview their application on various screens.



Figure 3.13Android studio

1. MySQL: It is a relational database management system that depends on the SQL address. This software is free and open source system. Usually, free software projects that require a database management system are used.



Figure 3.8 MySQL

Conclusion:

In this chapter complete the design phase, during this phase we define function requirements and non-function requirements, then we designed the database schema including the description of the tables and entities and relations. This chapter also we found the requirements tools that will be used in this system.

4. Chapter : Implementation and Testing

4.1. Introduction

At this chapter we will make procedures and reports that the system will display. After that, we will design the interfaces and interface reports

After that we will test the system where we will test the units and the positions and then fully test the system

4.2. Procedures

- A. The patient creates an account in the system
- B. The patient chooses a clinic
- C. The patient is reviewing the clinic information and if he wants to review the doctor's information he can
- D. The patient is booking an appointment
- E. The employee at the clinic is reviewing reservations
- F. The employee will confirm reservations
- G. The patient receives notification of confirmation of reservation

4.3. Reports

- Report booking

Patient name	date	time

Table 4.1 Report booking

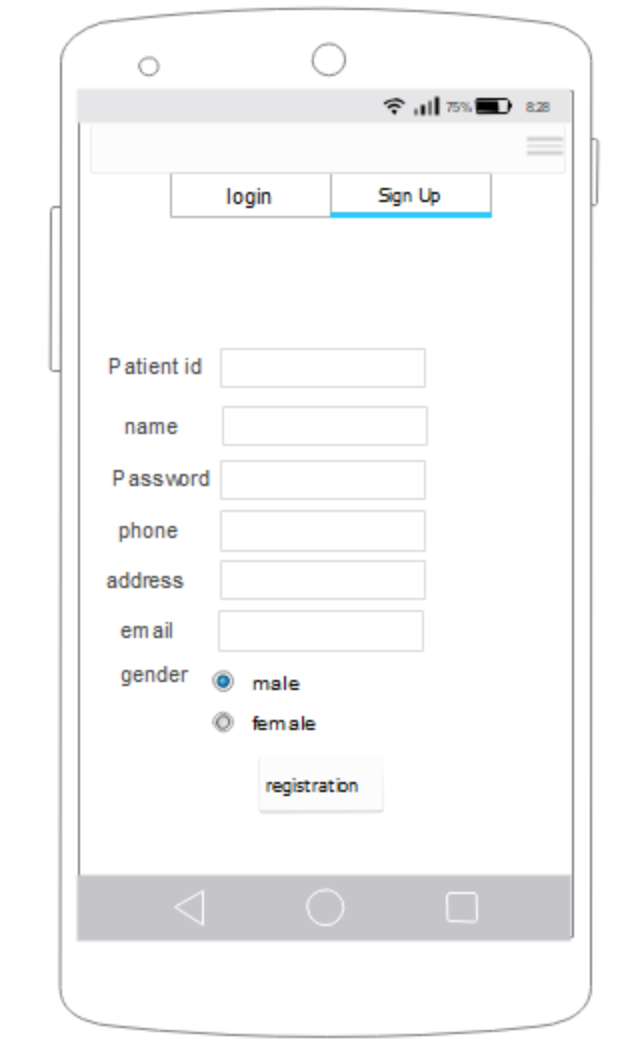
- Report for admin:

Report all clinics				
Clinic number	Clinic name	Phone	Email	Address

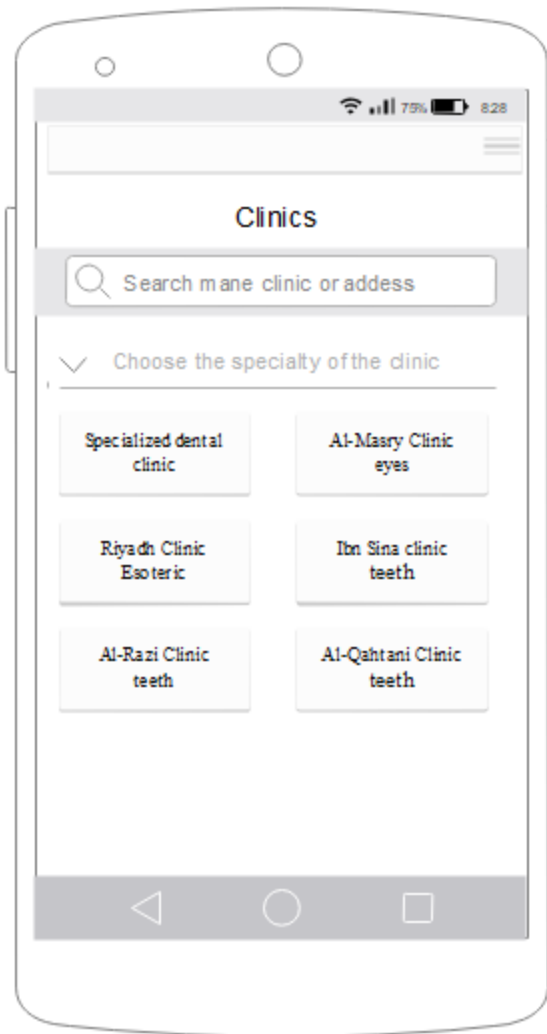
Table 4.2 Report all clinics

4.4. Layouts

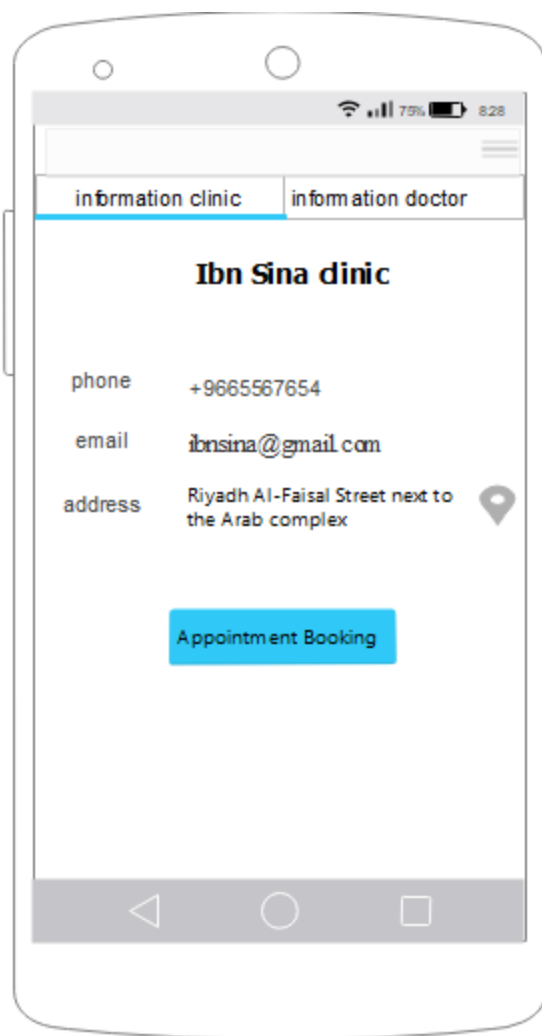
Sign up details display interface



Clinics interface



Information clinic and Information doctor interface



4.5. Reports layouts

Layout number	Layout name
1	Login
2	Create patient
3	Appointment Booking
4	Add staff
5	Add doctor
6	Add clinic
7	Create user and grant Privilege
8	View Booking
9	View reports
10	View clinic information
11	View doctor information

Conclusion:

In this chapter, I complete the implementation and testing phase. During this stage, we define procedures, and then we design the database including tables, features, and relationships. In this chapter we also designed system reports as well as Layouts and Reports layouts

Chapter 6: Conclusion and Future Work

Conclusion

Praise be to God Almighty, who helped us to finish this research, and what was presented is from God's grace, and this conclusion is the end of our journey and our effort after God's success. And God knows that we have exerted our utmost efforts to present to you this research as it is, which is appropriate for the topic and importance of the research, and we hope that the research has won your admiration, and that it will have an impact in enriching human thought. Despite this great effort, however, we cannot make it complete, for perfection is God Almighty alone. If the research is highly qualified and distinguished, then it is purely the grace of God, and the efforts of my teachers, and if not that, it is from myself, and I ask God that it be useful

Future Work

We will present the project to the software companies, or we will present the project to the clinics with the aim of contracting with them. If this step succeeds, we will download the application on Google Play and prepare the necessary infrastructure to operate the system, then we will officially manage and advertising marketing

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