

**Palestine Technical University-Kadoorie**

**Faculty of Engineering and Technology**

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**Software Engineering**

**Managing Patients’ Appointments System**



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# Abstract

Waiting for a long time In order to schedule an appointment in the current traditional system in hospital, and this system has always caused problems, whether on the part of customers (patients), or on the part of the hospital, among these problems : it wastes a lot of time and effort for both parties, and it’s Inconveniencing for the patients by coming to the hospital to get an appointment.

Our system will be like an online Medical Management service provider with easy-to-use customizable options, it allows the patient to see the available booking appointments and let him to choose the appropriate appointment for him and pay within a few clicks, and makes it easier for hospitals to deal with patients, and creating reports.

The system is accessible from anywhere, it will basically decrease the manual work and effort for both parties, and Providing human resources in hospitals by allowing reservations to be handled through the site instead of the employee, and improve the quality of maintaining records.

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# CHAPTER 1: INTRODUCTION

## Project Overview & Background

* For decades, hospitals have been struggling with managing and organizing patient appointments, due to the increased influx of patients to hospitals and the difficulty of organizing and scheduling patient appointments.
* Appointments were handled by the patient coming to the hospital to take the appointment, and this system has disadvantages, **including:**
* Inconveniencing the patient to come to the hospital to book an appointment, taking into account the distances he will travel to the hospital.
* It is necessary to have an employee to book appointments for patients.
* Wasting time and effort on the employee and patient.

**Hence**, there is a need for a site that manages patient appointments in hospitals and facilitates communication between hospitals and patients.

## Problem Domain

The challenges faced by the current traditional ordering system are a major problem Obstacles to achieving efficiency and customer satisfaction:

* Patients will have to stand in long lines to submit requests to book an appointment.
* Hospital staff will manually record appointment requests.
* After submitting an application, the patient must wait until he receives the application confirmation paper.
* Manual work reduces efficiency and increases the possibility of errors occurring during the application process.

## Project Objectives

Our project aims to develop an online appointment booking system for use in the appointment booking service for patients in hospitals, which will allow hospitals to quickly and easily manage the list of booking appointments available through the website. The customer can complete the operation he wants quickly, easily and without complications.

How We Propose to Address the Diagnosed Problems:

We aim to provide a solution to the problems facing hospitals in managing patient appointments by helping patients (customers) book an appointment that is appropriate for them and also appropriate for the hospital management.

This can be achieved by creating a database dedicated to hospitals to store the largest possible number of hospitals in Palestinian cities.

• Save time:

Through the service provided by the site, the customer can, within a few minutes, book an appointment, thus saving the customer time and effort, and thus increasing the customer’s satisfaction with the service provided to him through the site.

• Security of data:

The data is well protected for personal use by registering for an account through Personal email and password for each user.

• Minimized manual data entry:

Automation ensures data accuracy during the booking request submission process. in general We propose an online appointment booking system, the main advantage of our system is that it is highly Simplifies the booking process for both the customer and the hospital administration.

The project will improve the management of medical appointments and increase their efficiency and accuracy. because This system will reduce all manual work by replacing the traditional system System in a computer system. It will eliminate manual work such as the employee entering patient data and booking an appointment for him.

## Project Scope

The system will be a web-based platform that will be developed to allow customers (patients) to view everything, appointments booked and unbooked, doctors you can book with, and then place the order through the system. It is available for customers to book an appointment with a specific doctor, and they can also cancel this reservation, and they can also pay through the website.

The system will be able to allow the hospital administration to update appointments and make changes to them, and will also allow employees to create the reports they want to create, such as the monthly patient records report.

# CHAPTER 2: REQUIREMENTS GATHERING APPROACH

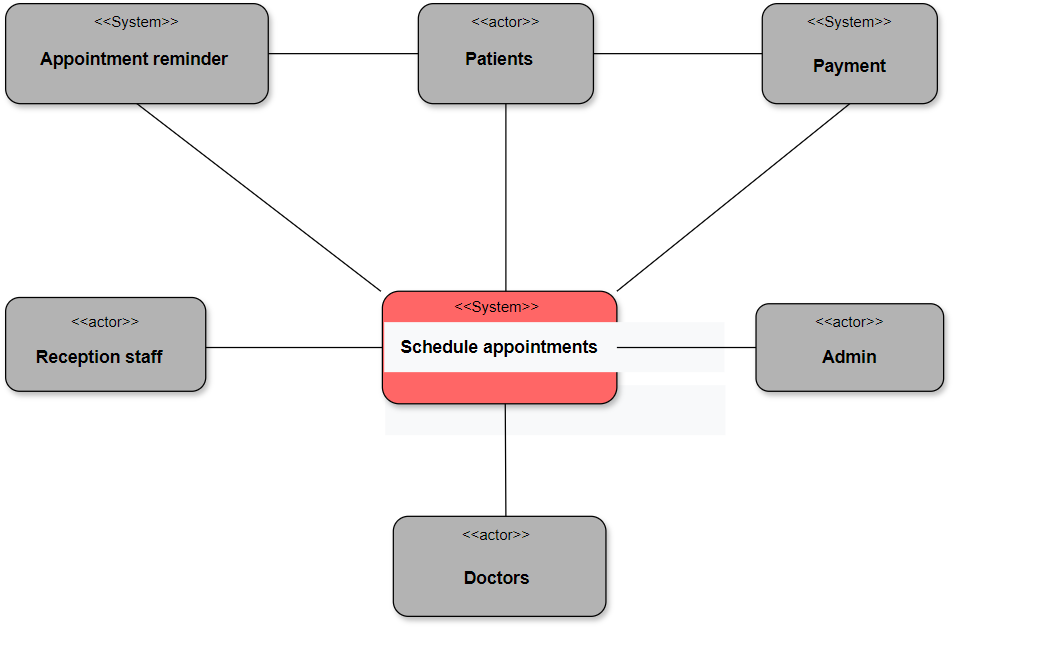
At first we didn't know what to do about how to manage patient appointments in hospitals, so we discussed among ourselves and also visited some websites that support the idea of ​​managing patient appointments in hospitals.

So we decided how to collect user requirements through web system.

We also consulted some experts with much more experience than us, who gave us guidance on how to collect user requirements.

# CHAPTER 4: SYSTEM ARCHITECTURE

This chapter will provide an overview of the system's structure and architecture, showing the distribution of tasks across the different system modules, and how they relate to each other.



**Figure 1**: General Overview of our System’s Architecture

## What is Outside the System’s Borders:

System boundaries are created to define what is inside the system and what is outside it.

Such as dealing with payment methods:

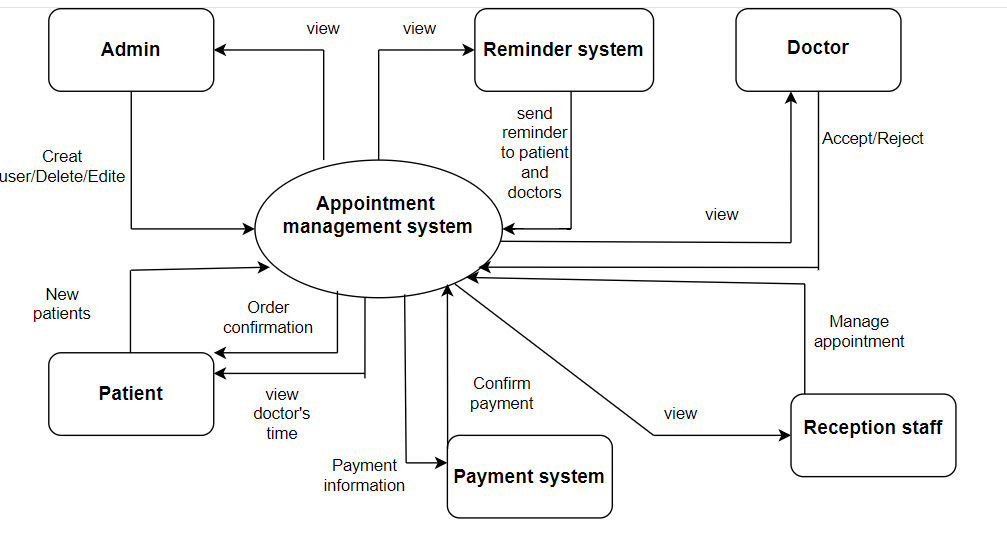
We try to keep our system simple, so as not to interfere with the payment system

Details, as it requires integrating our system with an external system for which we are responsible

Handling payments and payment methods (such as Visa card(

## Context Diagram:

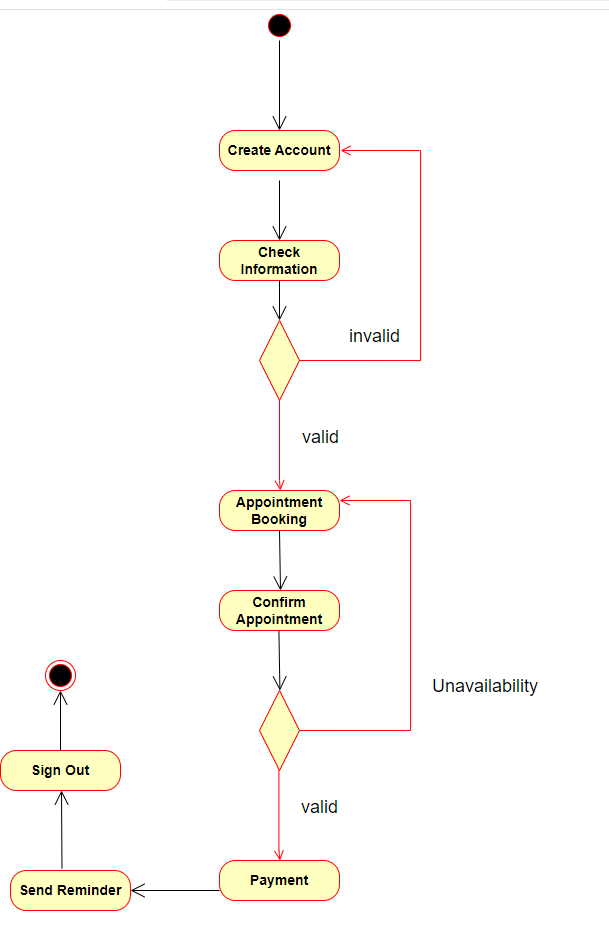
This is a brief structure that explains the environment in which the system exists and helps understand how the system communicates with what lies outside the system's boundaries and how they relate to each other.



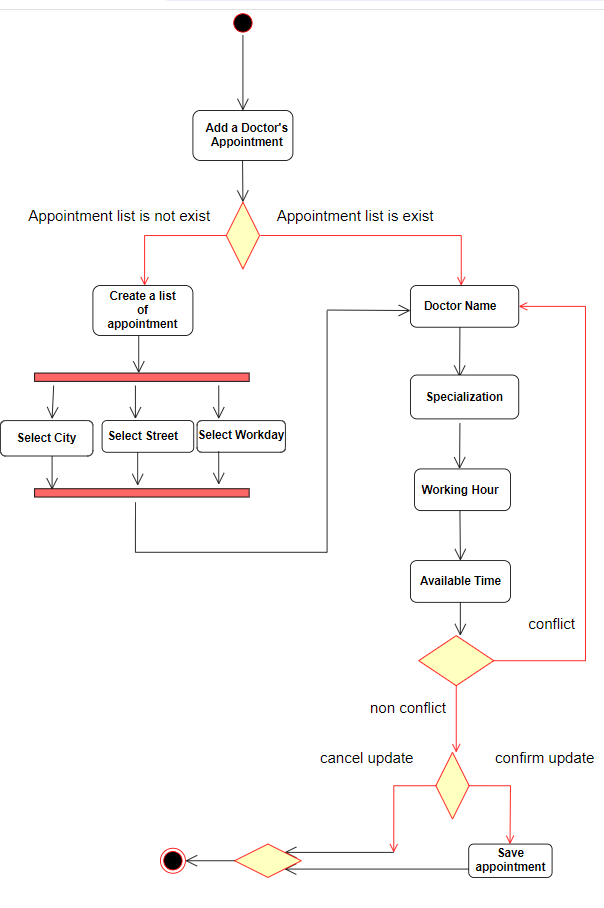
**Figure 2**: Context Diagram of our System’s Architecture

**6 CHAPTER 6: SYSTEM MODELS**

**6.3 Activity Diagrams:**



**Figure 9**: General Activity Diagram of a Patient to book an appointment for the first time



**Figure 11**: Activity Diagram shows the Flow of Events that a System’s Admin should Follow to create a list of appointments.

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**Product Features:**

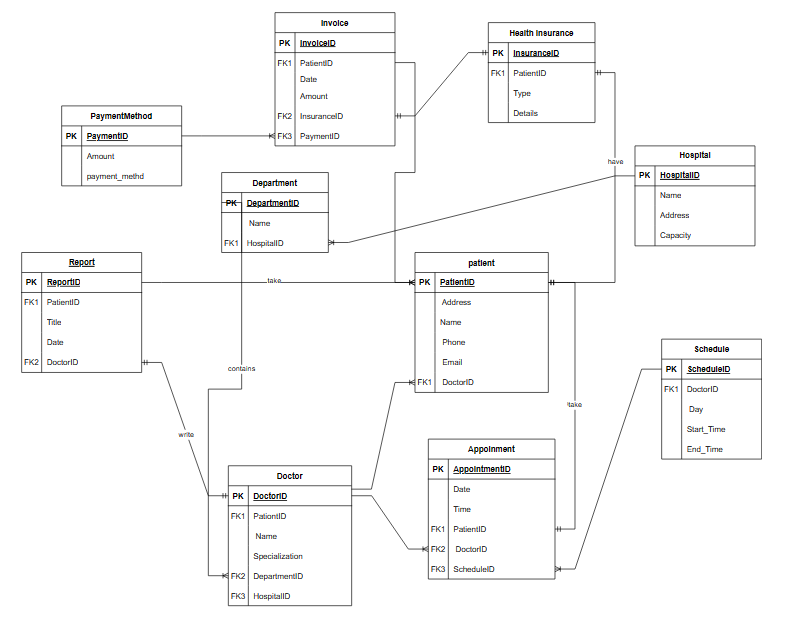
****The major features of the patient appointments database system as shown in below [**entity–relationship model**](https://en.wikipedia.org/wiki/Entity%E2%80%93relationship_model) (**ER model**)

Figure1.1 ER (Entity-Relationship) Diagram