SRS

Introduction

The document gives a general overview of the Dental Clinic System. It provides an overview, definitions, synonyms, abbreviations, and the purpose of the DCS. The document's aims to completely investigate and provide an in-depth analysis of the DCS defining problem statement. Additionally, it defines high-level product features while focusing on the needs and capabilities needed by stakeholders. This document contains the complete DCS requirements.

1.1 Purpose

The purpose of this document is to evaluate all of the different ideas that have been proposed to define the system and the user's requirements. Additionally, we should predict how the system will be used, in order to better understand the project, record concepts that may be implemented in the future, and document ideas that should be the focused on.
This document's main objective is to give a general overview of our system, including its features and objectives. The document highlight the target consumer audience for the project as well as the hardware and software requirements .It highlights the product and its features are viewed by the client, stakeholders, and target market. However, supporting software development lifecycle (SDLC) processes is helpful for designers and developers .

1.2 Project scope

Mainly, the project's scope relates to the features of the DCS .It focuses on the Clinic and its stakeholders that make booking appointments possible.
The SRS also seeks to determine the specifications for the software that has to be created. The standard can be directly used to develop software requirements specifications, or it can serve as a model for developing standards unique to a project or organization. It makes no mention of any particular terminology, process, or instrument for creating an SRS.

1.3 Definitions, Acronyms, and Abbreviations

DCS	Dental Clinic System
QA	Quality Attribute

1.4 Overview

The general description is given in the remaining sections of this document, together with details on the hardware of the product, the functional and data requirements of the product, and the characteristics of the project's users. This page discusses the project's general description. The document also includes constraints and assumptions that were made throughout the DCS design, as well as the functional requirements. It also provides the product's user perspective and provides the system's special requirements as well. gives an in-depth overview of the functional requirements and includes the needs for the external interface.

Overall Description

2.1 Product perspective

This document highlights the issue with the present system, which is the manual appointment scheduling methods.Our system is mainly intended for use by clients or patients who need help with software to schedule appointments and view reports.

2.2 Operating environment

we are going to use Windows Operating system for the clinic and we will develop our app using flutter framework which can support Cross-platform.

System features

3.1 Functional Requirements

3.1.1 Administration requirements

1. **Comprehensive Data Access:**
2. The administrator should have unrestricted access to all data within the system, Including patient profiles , patient appointments and patient record.
3. **User Management:** The administrator should have the ability to manage faculties and user accounts, including the creation of new accounts, the modification of faculties permissions, the reset of passwords, and the deactivation or deletion of faculties accounts as required.
4. **Data Management:** The administrator should be able to add, and remove data from the system. This includes the ability to add new users, modify patient profiles, and view patient profiles.
5. **Registration:** the system shall allow admin to register a new patient.
6. **Patient data store:**
   - the system should store details of each dental procedure including(date, treatment type, dentist information)
   - the system should Keep track of treatment progress and follow-up appointments.
7. **Patient search:** the system shall allow the admin to search for patient using their name or CPR

3.1.2 Dentist Requirements

1. **Treatment Plan:** the system shall allow the dentist to create and modify the treatment plan for patients including the necessary treatment and timelines.
2. **View Record:** the system shall allow the dentist to view the record of each patient including the past treatment
3. **Patient call and queue:** the system shall allow each dentist to list the names of their patients according to their scheduled time
4. **Patient Status:** the system shall allow the dentist change the status of the patient from 'in treatment' to 'Completed treatment'.

5. **X-rays picture:** the system shall allow a dentist who have access to x-rays files to add a picture of x-rays to the patient.

6. **Patient search:** the system shall allow the dentist to search for patient using their name or CPR

3.1.3 Receptionist Requirements

1. **View appointments:** the system shall allow the receptionist to view the scheduled of each dentist with date and time.

2. **registration:** the system shall allow the receptionist register a new patient.

3. **Appointment Creation:** the system shall allow the receptionist schedule appointments for patients that have been registered into the system, considering the dentist availability.

4. **Appointment Modification:** the system shall allow the receptionist to rescheduled or modify patient Appointment at anytime

5. **Patient search:** the system shall allow the receptionist to search for patient using their name or CPR

3.1.4 Patient Requirement

1. **registration:** the system shall allow the patient to register using the app.

2. **Appointment Creation:** the system shall allow the registered patient to scheduled appointment using the app considering the dentist availability.

3. **Appointment Modification:** the system shall allow the patient to rescheduled or modify patient Appointment at anytime using the app

4. **Appointment Reminders:** the system should send automated reminders to patients by notification and they can confirm or rescheduled from the app.

5. **patient communication:** the system shall allow user to communicate with the receptionist and dentist in the app.

3.2 Non-Functional Requirements (QA)

3.2.1 QA-1 Security

- The system should guarantee the transfer and storage of patient data in an encrypted state.
- the system should use encryption and other security measures to protect any unwanted access to patient data

3.2.2 QA-2 Usability

- The system should provide guidance and allow users to easily correct errors
- the system should reduce the amount of redundant scheduling and data entry to increase user productivity

3.2.3 QA-3 Scalability

the system should be scalable to handle the expansion of the dental practice, including the addition of new clinics, doctors, and patients.

3.2.4 QA-4 Availability

The system will have backup servers for continuous operation.

3.2.5 QA-5 Performance

The system should support a huge number of concurrent users and appointments. A good user experience should be ensured by having minimal response times for crucial processes like scheduling appointments and getting data.

3.3 Scenarios

3.3.1 Scenario:Patient Appointment Booking

1. User:patient
2. Pre-condition:the patient logged into the system
3. main scenario:
    * The patient navigates to the "Appointment" menu item.
    * The system displays a list of the dentists that are available along with their schedules.
    * The patient chooses a dentist.
    * The system shows the times that the dentist is available.
    * The patient chooses their own selected time and date.
    * The system verifies the appointment and notifies the patient.
4. Alternative scenarios:
    - Alternative scenario 1: no appointments available
        * The patient is notified by the system and given alternate dentists or dates to choose if the selected dentist has no open appointment times.
    - Alternative scenario 2: Rescheduling
        * The patient chooses the choice and proceeds in the same way as in the main scenario if they wish to reschedule an existing appointment.
    - Alternative scenario 3: incorrect input
        * The system displays an error and asks for correct input if the patient enters incorrect or missing information.
5. Post-condition: The patient's appointment with the chosen dentist has been scheduled successfully .

3.4 Use Case

Use Case	Description
UC-1 Sign-up	The user will create an account to register in the system by offering required information: first name, last name, CPR, phone number password, date of birth and Location.
UC-2 Log-in	The user will be able to access their previously created account by entering username, password.
UC-3 Appointment Booking	The user shall be able to book an appointment at a specific time and will be able to select a dentist from the clinic.
UC-4 Modify or cancel booking	The user shall have the option to change or cancel an appointment they have scheduled before at any time.

3.5 Constrains

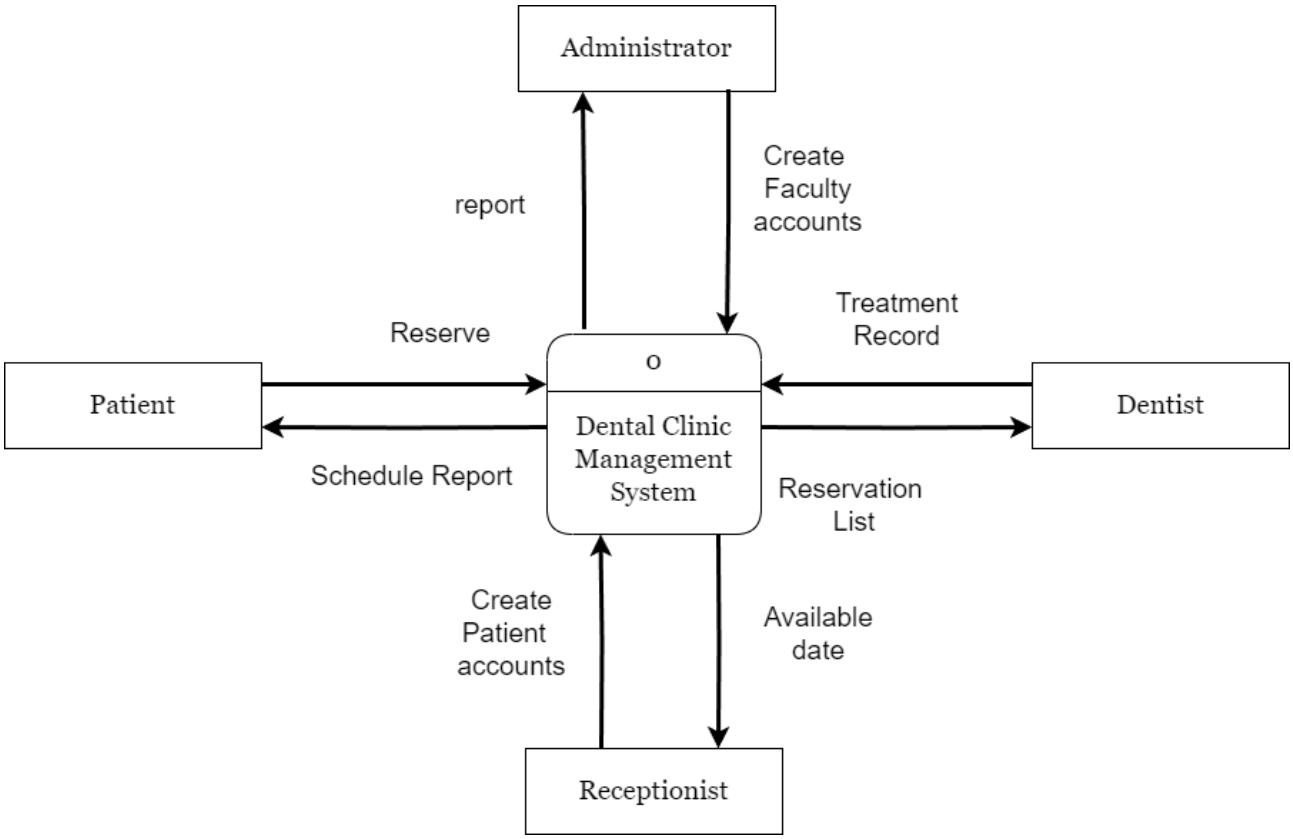
ID	Constrains
CON-1	The system only offers services to clients in Bahrain
CON-2	The system must work with all devices.
CON-3	The system will be developed in Dart
CON-4	The system must be completed within a year.
CON-5	Access to the system requires an internet connection.

3.6 Concerns

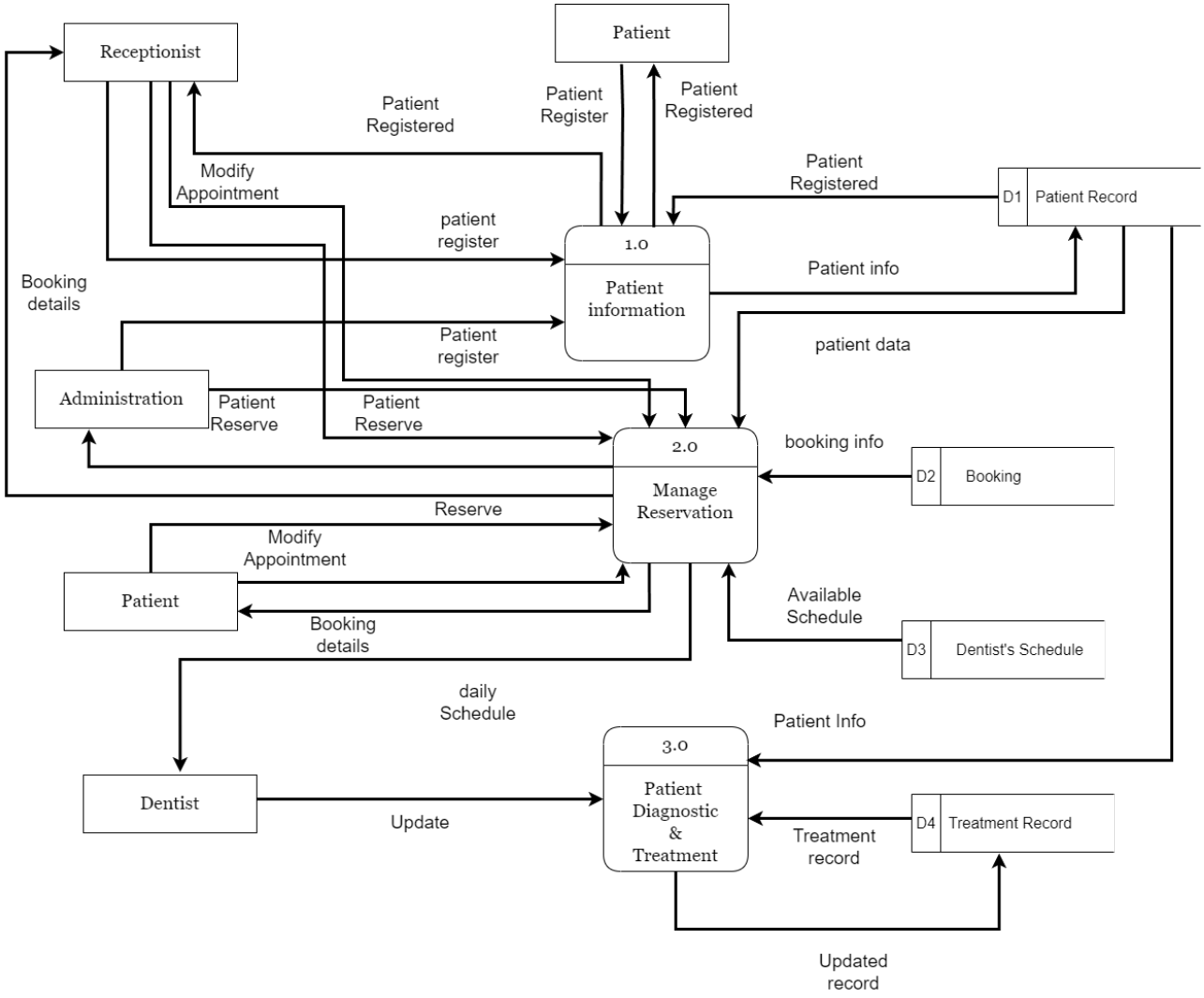
ID	Concerns
CRN-1	Creating the base for the whole system
CRN-2	Distributing work among the team's developers individually
CRN-3	Both Dart language and its technology are known to the team members
CRN-4	Arabic and English language are used in the system

Design

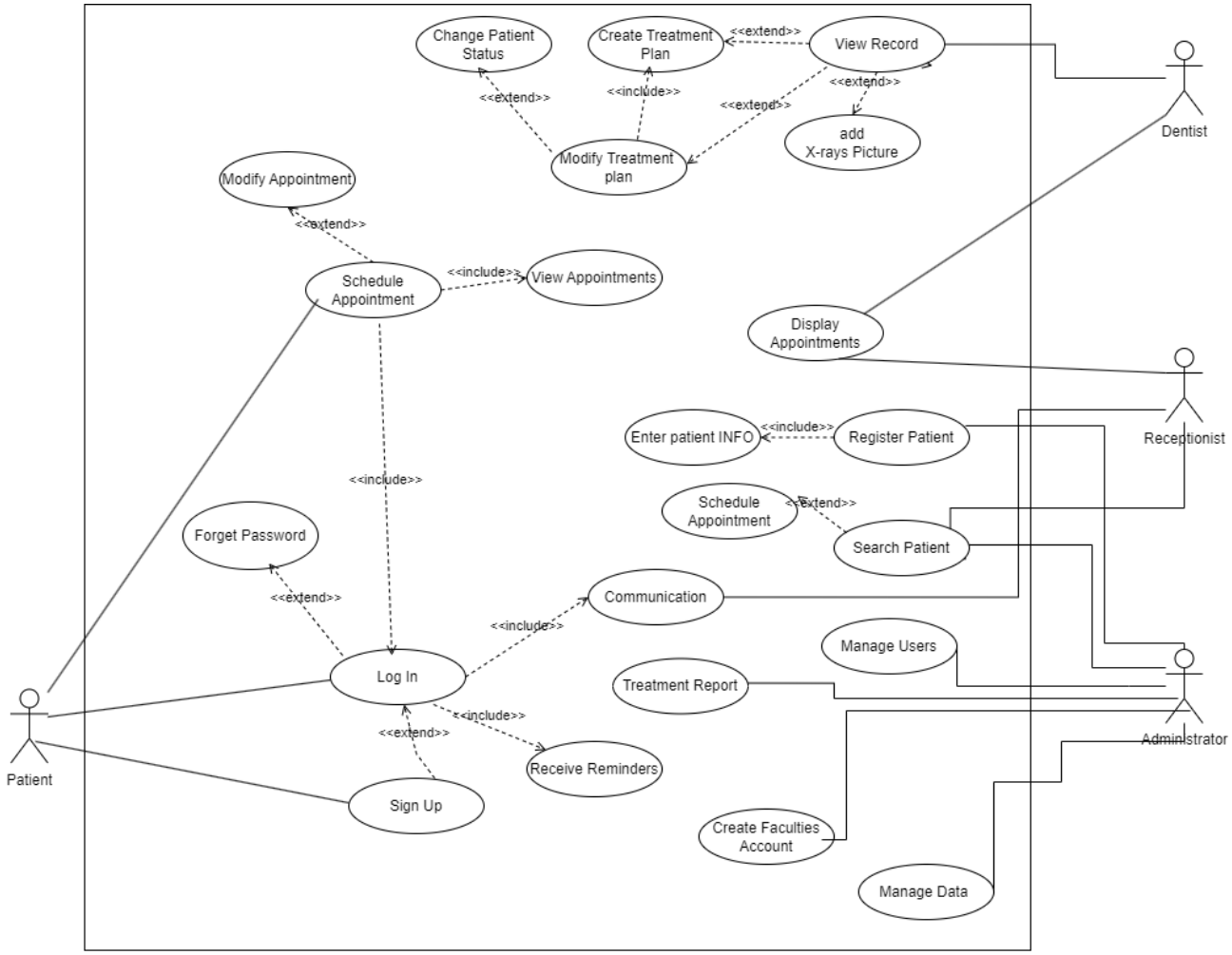
4.1 Context Diagram



4.2 DFD


Receptionist
Patient
Patient Registered
Patient Register
Patient Registered
Modify Appointment
Patient Registered
D1 Patient Record
patient register
1.0
Patient information
Booking details
Patient info
Patient register
patient data
Administration
Patient Reserve
Patient Reserve
2.0
Manage Reservation
booking info
D2 Booking
Reserve
Modify Appointment
Patient
Booking details
Available Schedule
D3 Dentist's Schedule
daily Schedule
Patient Info
3.0
Patient Diagnostic & Treatment
Dentist
Update
D4 Treatment Record
Treatment record
Updated record

4.3 Use Case


Change Patient Status
Create Treatment Plan
View Record
Dentist
Modify Treatment plan
add X-rays Picture
Modify Appointment
Schedule Appointment
View Appointments
Display Appointments
Receptionist
Enter patient INFO
Register Patient
Schedule Appointment
Search Patient
Forget Password
Communication
Log In
Manage Users
Treatment Report
Administrator
Receive Reminders
Sign Up
Create Faculties Account
Manage Data
Patient
<<extend>>
<<include>>

4.4 Class Diagram