Information System Analysis and Design

CSE347 (2)

Short Project

"BABER | A Doctor Appointment System for Child"

Prepared for

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Introduction

Baber is a web-based application where a user can make appointment for their child especially under 18. User can find here a famous child specialist. At our Medical Center, we combine excellent medicine with compassionate care from Dr. Arif Morshed. On the other hand, here is an admin panel as well as scheduler who generally control the scheduling appointment with the doctor and patient. Every members of the admin have to register and login for entering the work page. This feature is available for user also. Nevertheless, it is not mandatory to login or register for making appointment.

Non-Functional Requirements

1. **Product Requirements:**
   - Usability: This system has to be user friendly and less complicated to use.
   - Efficiency: The performance of the software should be good enough algorithmically and the memory management should be intelligent. Because our system cannot afford too much time in data processing. Also, it needs need huge amount of space to store data
   - Dependability: The system should be built in a way where user can depend undoubtedly in term of security and authenticity.
   - Security: There should be no security imperfections or vulnerability within the system, as our doctor appointment management system comprises of confidential information. In expansion, the doctor can only check his own and other patient's profile. Each change made by the doctor to someone's profile will be logged and profile owner will be able to see that.
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2. **Organizational Requirements:**

   - Environmental: The system should be built in such a way that it maximizes the usages of the CPU and servers to perform its operation, which affects the environment less physically and saves energy.

3. **External Requirements:**

- Regulatory: The system should abide by the laws of the Bangladesh and follow the ICT acts in order to ensure transparency.
- Ethical: The system needs to be built in a way that there is no backdoor for gaining access and acquiring raw data to use them for personal benefits.

Functional requirements

The functional requirements of this system is easy to implement but a tough job to ensure proper security and maintain privacy as well as authenticity. All the functional requirements are listed in brief below.

1.	Appointment Request Page for the doctor.
2.	Sign Up page for patients/users
3.	Log in page for user and admin
5.	To register as a user, one must upload his/her email, phone number, name and password.
6.	Team panel under the doctor.
7.	Patient can view a brief about the doctor's profile
8.	One patient cannot view another patient's profile
9.	Patient cannot make changes to their profile
10.	Only admins can change a patient's appointment and data
11.	Logging out method to come out of the profile.

Working Method description

- **Appointment Stage**

    - To make an appointment the user have to provide his/her first name, last name, contact No, Email Address and then in request part one have to give his/her date of birth, age, gender and time schedule.

- **Sign Up Stage**

    - To use this system a user or patient will have to make an appointment to Dr. Arif Morshed through our system.
    - To sign up as a patient or user, one must upload his/her email, phone number, name and password.
    - After verifying valid information, a user will be able to make an appointment.
    - The admin panel will have the authority to approve or reject the appointment requests.

- **Login stage**

    - To log in to the system a user will have to provide his/her user email address and password. Then the information will go under a validity check. If the system verifies the data, the user will have an access to his account panel.

- **Control Panel**

    - When a user logs into the system there are two different kind of viewing panel one for users and another for admins.
    - Admin panel can reply by emailing to users to make sure their appointment.
    - Users can only view their appointment records. They can also see a brief about the doctor's profile.

- **Sign out stage**

    - There is method for the users to sign out from the system.
    - When a user signs out from the system, all changes are committed to the database and the changelog is also saved.

<u>Technologies:</u>

- **Programming Language**

  For this project, we have used python as the backend programming language. Here we used Django as the web framework, which enables rapid development with security.
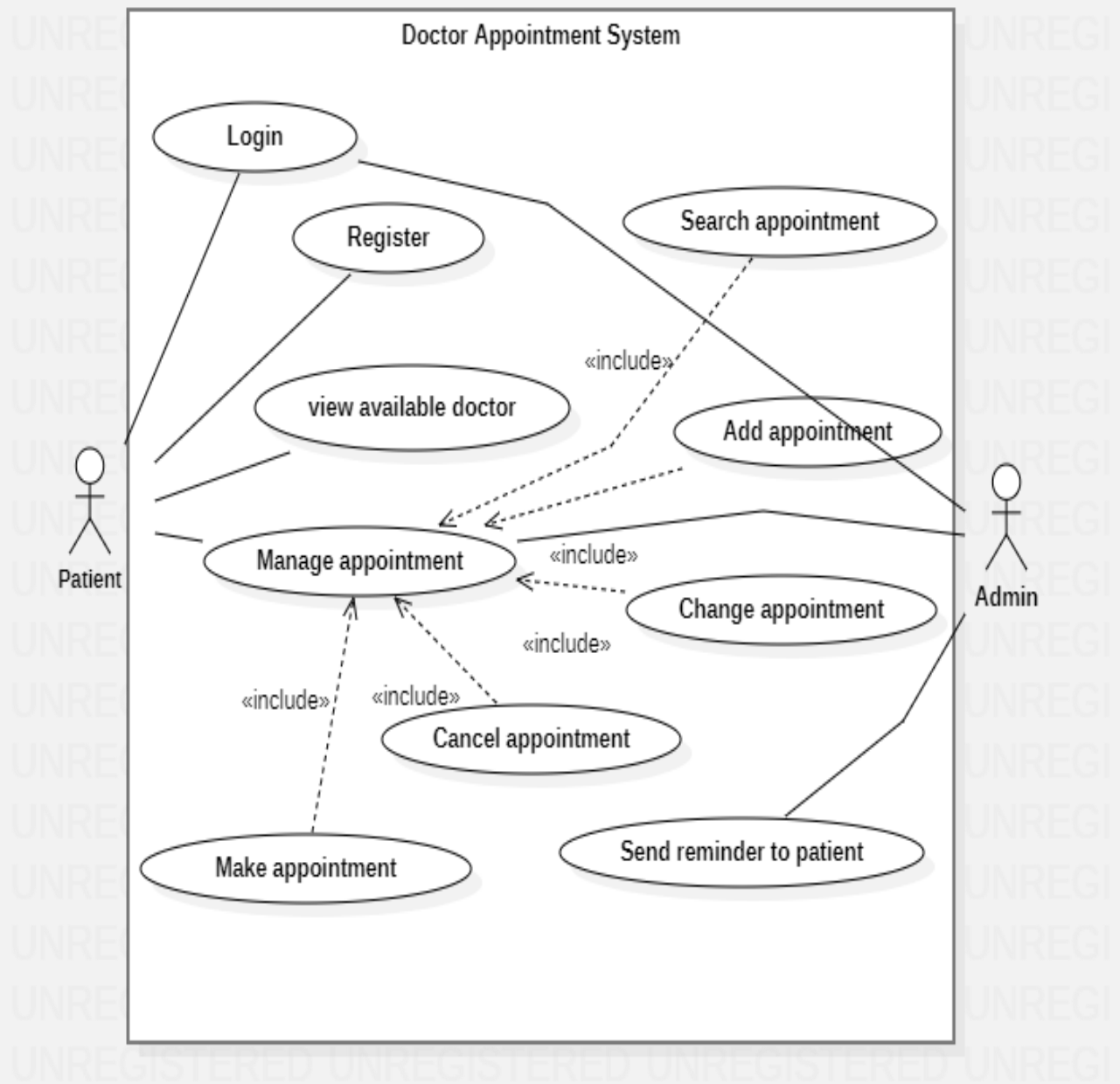
- **Database**

  The structure of our application is hierarchical. There are various kinds of users and operators. For this reason, we chose relational database management system and MySQL as the platform. Because it has wide range of community support and assistance, also it comes with great ease to implement in big projects.
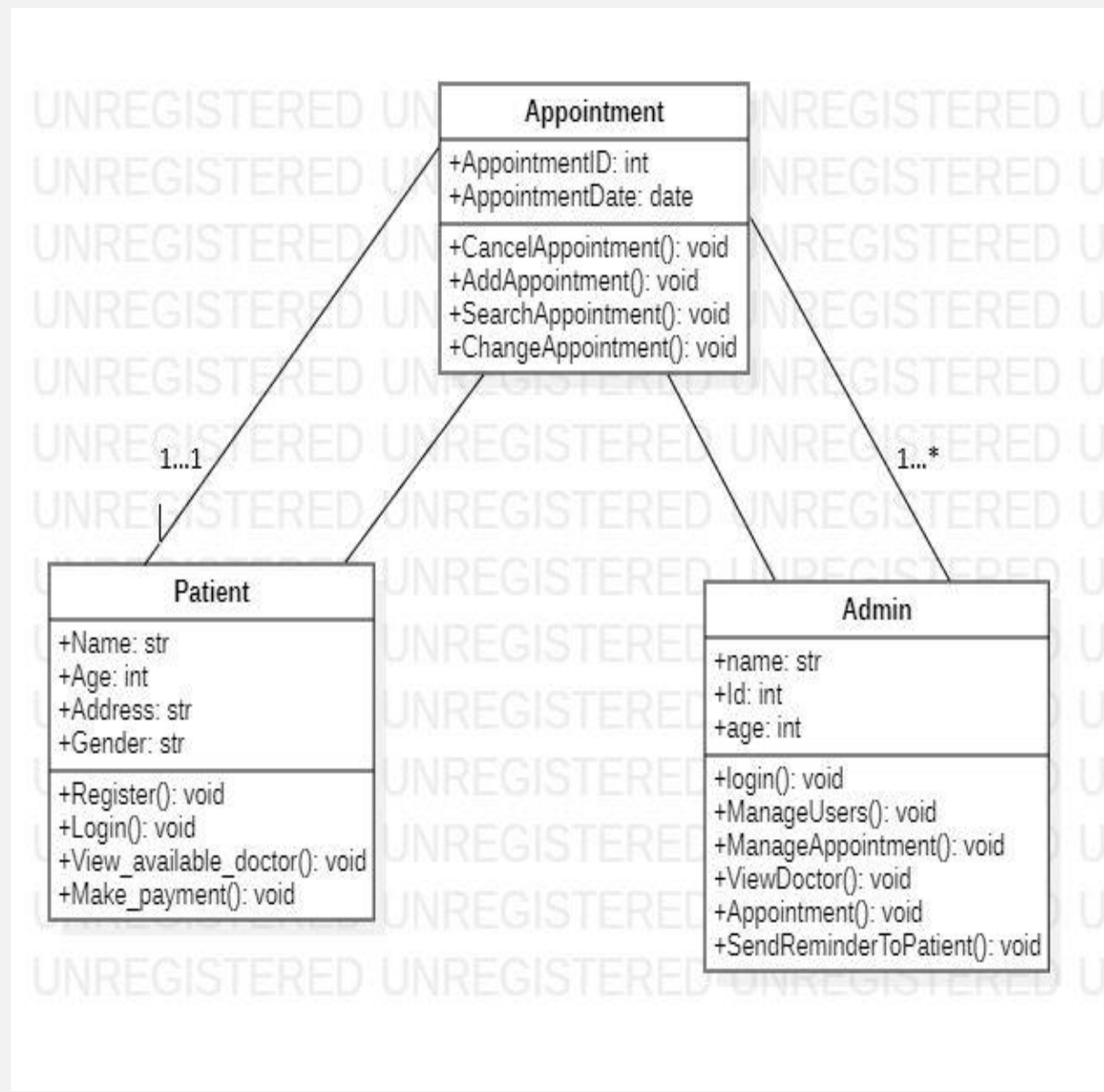
- **Others**

  For the frontend segment, we have used HTML modified by other technologies like CSS. CSS has been used to control presentation, formatting, and displaying the layout.
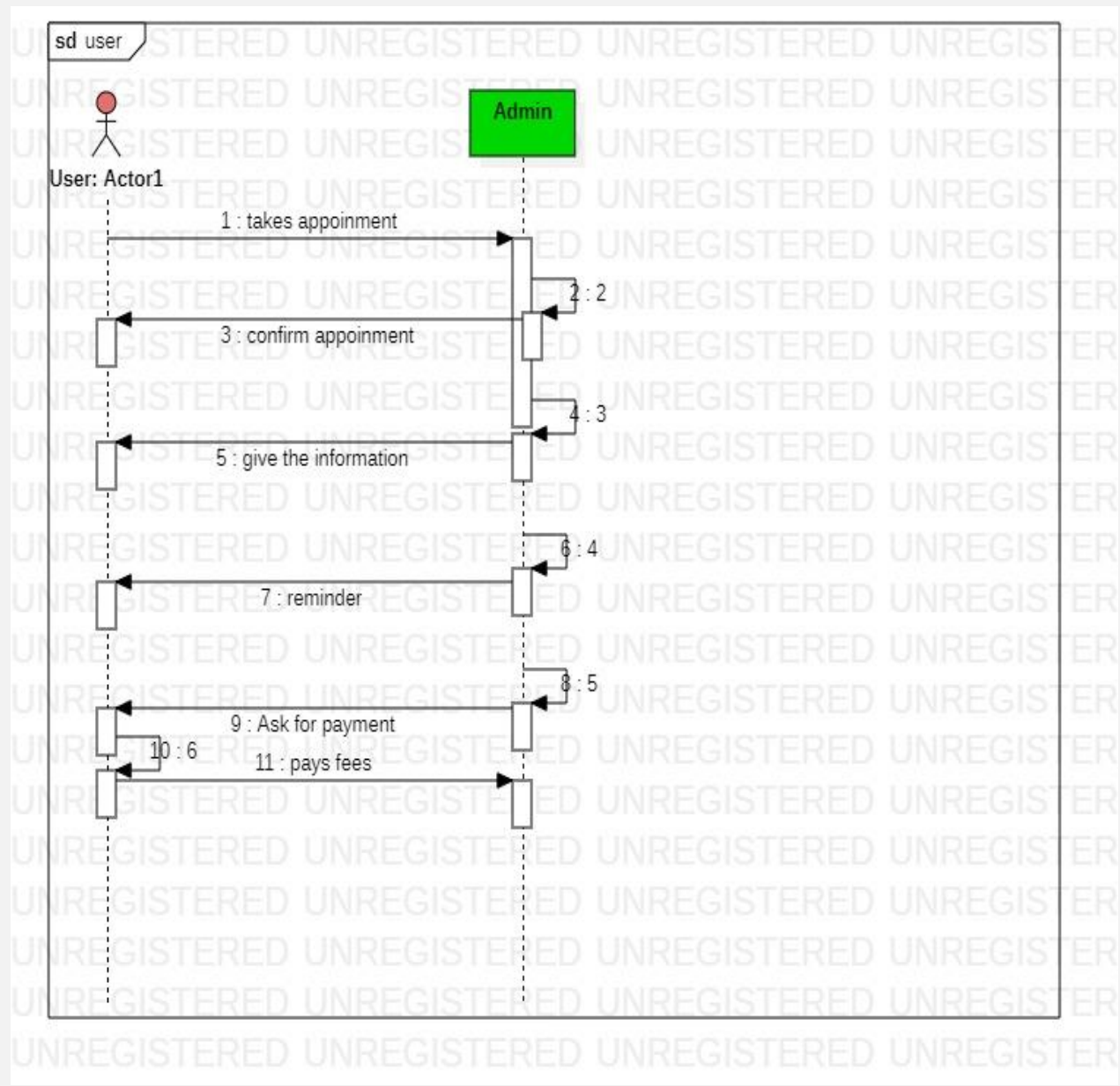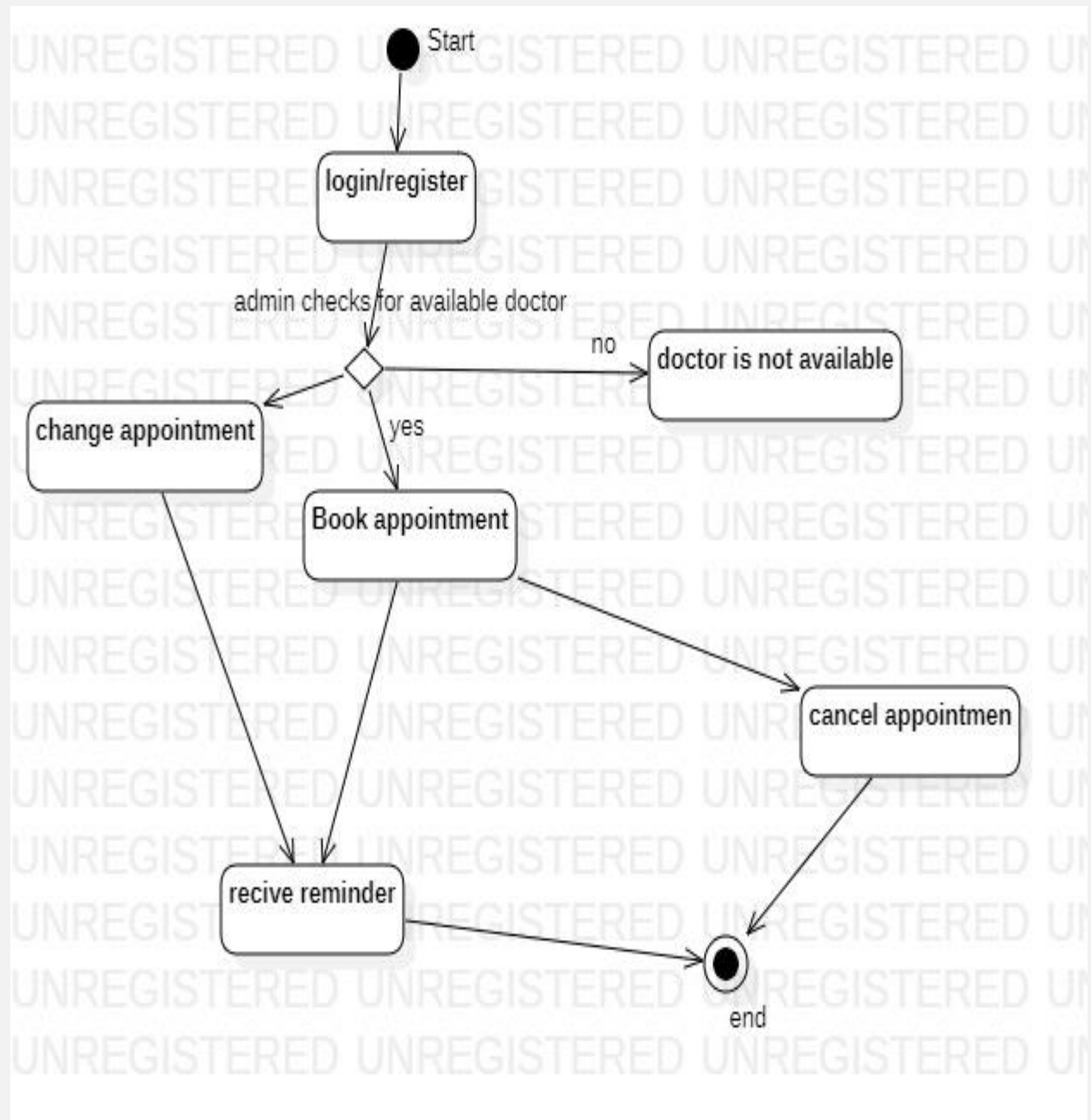
Diagrams:

Use case diagram

Class diagram

Appointment

+AppointmentID: int
+AppointmentDate: date

+CancelAppointment(): void
+AddAppointment(): void
+SearchAppointment(): void
+ChangeAppointment(): void

1...1

1...*

Patient

+Name: str
+Age: int
+Address: str
+Gender: str

+Register(): void
+Login(): void
+View_available_doctor(): void
+Make_payment(): void

Admin

+name: str
+Id: int
+age: int

+login(): void
+ManageUsers(): void
+ManageAppointment(): void
+ViewDoctor(): void
+Appointment(): void
+SendReminderToPatient(): void

Sequence diagram

Activity diagram

ER diagram