### ****PATIENT APPOINTMENT SCHEDULING SYSTEM****

This system is designed to streamline the process of booking and managing appointments between patients and specialists. This system simplifies appointment scheduling, updates, cancellations, and record management, ensuring smooth interactions between patients, specialists, and administrators. The system is crucial for medical institutions, clinics, or hospitals where efficiency, convenience, and proper data handling are critical.

#### ****Key Actors:****

1. **Patient**:
2. **Specialist**:
3. **Administrator**:

### 1. ****Use Cases:****

#### ****patients****

* **Search for Specialists**: Patients can search for a specialist based on criteria such as name, specialty, location, or availability.
* **View Specialist Availability**: Patients can check the available time slots for a selected specialist to book appointments at a convenient time.
* **Schedule an Appointment**: After selecting a specialist and a time slot, patients can book an appointment.
* **Cancel an Appointment**: Patients have the option to cancel or reschedule previously booked appointments.
* **View Appointment History**: Patients can access a history of their past and upcoming appointments for reference or follow-up.

#### 2. ****Specialist:****

* **View Appointment Schedule**: Specialists can view their daily, weekly, or monthly appointment schedule to plan their consultation hours.
* **Update Appointment Status**: Specialists can mark appointments as completed, rescheduled, or cancelled.
* **View Patient History**: Specialists can access patient records to review past appointments, medical history, or notes related to previous consultations.

#### 3. ****Administrator:****

* **Manage Specialist Profiles**: Administrators can create, update, or deactivate specialist profiles, ensuring that the list of specialists is accurate and up-to-date.
* **Manage Patient Records**: Administrators have access to patient data and can manage records, ensuring that information such as medical history, appointments, and contact details are accurate.
* **Generate Reports**: The system allows administrators to generate reports based on data such as the number of appointments, patient demographics, or specialist performance.

### ****How my project Works:****

#### ****Patient Appointment Scheduling Process (Sequence Diagram Overview):****

1. **Patient Registration & Login**:
   * Before using the system, the patient must register by providing personal details and creating an account.
   * The system ensures secure login and authentication to maintain data privacy.
2. **Search for Specialists**:
   * Once logged in, the patient searches for a specialist by name, specialty, or location. The system displays a list of specialists that meet the search criteria.
3. **View Specialist Availability**:
   * The patient selects a specialist and can view their available time slots in real-time.
4. **Select Appointment Slot**:
   * The patient chooses an available appointment slot that suits their schedule. They can see the available dates and times and select one accordingly.
5. **Appointment Slot Verification**:
   * The system checks if the selected appointment slot is still available. If the slot has already been booked, the patient will be prompted to choose another slot or wait.
6. **Appointment Confirmation**:
   * Once the slot is verified, the system confirms the appointment and stores the details in the patient’s and specialist’s schedules.
7. **Confirmation Email**:
   * After confirming the appointment, the system automatically sends a confirmation email to the patient, containing details such as the appointment time, specialist name, and location. This ensures the patient has a record of the booking.
8. **Specialist’s Schedule Update**:
   * The system updates the specialist’s calendar with the new appointment. The specialist can view all scheduled appointments, ensuring they are aware of their upcoming consultations.
   * Then they schedule the meet up point or if they decide to do it online.