CS-691 Software Development Project

Assignment

UML Diagram
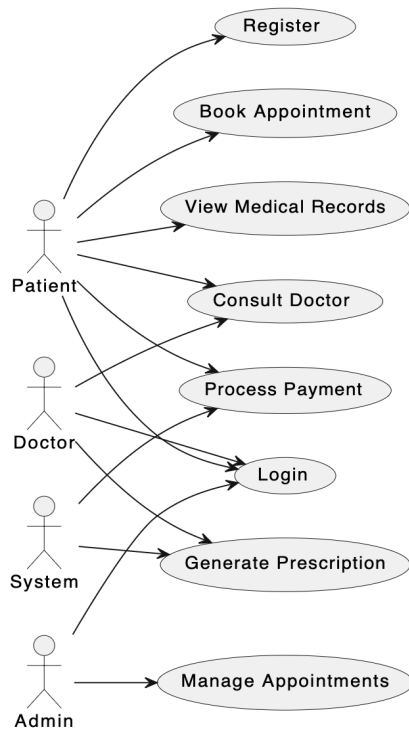
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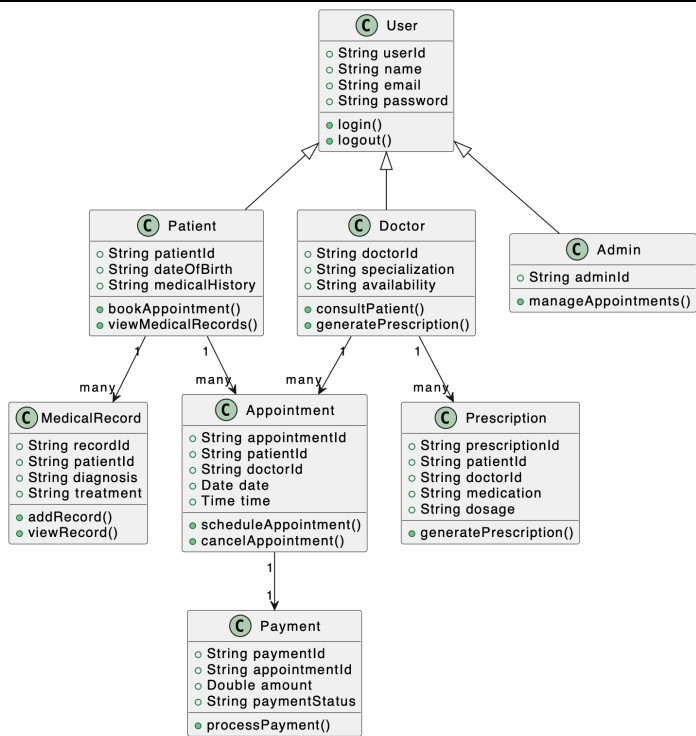
Use Case Diagram

The Use Case Diagram illustrates the interactions between actors (Patient, Doctor, Admin, System) and the system's functionalities (Register, Login, Book Appointment, etc.).
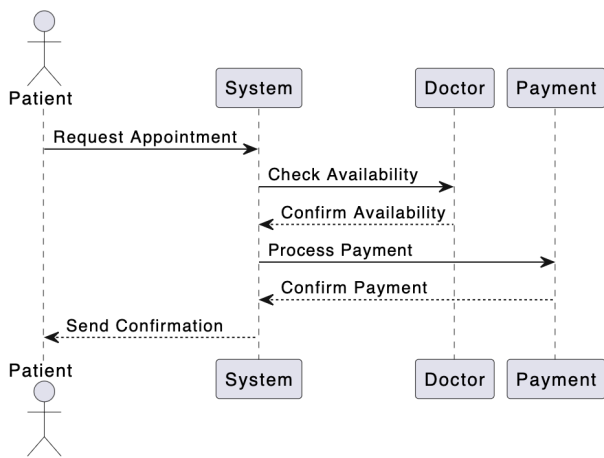

Class Diagram

The Class Diagram represents the system's structure, including classes like Patient, Doctor, Appointment, and their relationships.

User
- ○ String userId
- ○ String name
- ○ String email
- ○ String password
- ● login()
- ● logout()

Patient
- ○ String patientId
- ○ String dateOfBirth
- ○ String medicalHistory
- ● bookAppointment()
- ● viewMedicalRecords()

Doctor
- ○ String doctorId
- ○ String specialization
- ○ String availability
- ● consultPatient()
- ● generatePrescription()

Admin
- ○ String adminId
- ● manageAppointments()

MedicalRecord
- ○ String recordId
- ○ String patientId
- ○ String diagnosis
- ○ String treatment
- ● addRecord()
- ● viewRecord()

Appointment
- ○ String appointmentId
- ○ String patientId
- ○ String doctorId
- ○ Date date
- ○ Time time
- ● scheduleAppointment()
- ● cancelAppointment()

Prescription
- ○ String prescriptionId
- ○ String patientId
- ○ String doctorId
- ○ String medication
- ○ String dosage
- ● generatePrescription()

Payment
- ○ String paymentId
- ○ String appointmentId
- ○ Double amount
- ○ String paymentStatus
- ● processPayment()

Sequence Diagram

The Sequence Diagram shows the flow of interactions for Book Appointment and Consult Doctor functionalities.

Patient → System: Request Appointment
System → Doctor: Check Availability
Doctor → System: Confirm Availability
System → Payment: Process Payment
Payment → System: Confirm Payment
System → Patient: Send Confirmation

Activity Diagram

The Activity Diagram visualizes the Payment Process workflow.

```
                            ●
                            │
                            ▼
            ┌───────────────────────────────┐
            │ Patient selects payment method │
            └───────────────────────────────┘
                            │
                            ▼
            ┌───────────────────────────────┐
            │ System validates payment details│
            └───────────────────────────────┘
                            │
                            ▼
        Yes   ╱  Payment successful?  ╲   No
         │    ╲                        ╱    │
         ▼                                  ▼
┌─────────────────────┐          ┌─────────────────────┐
│ Confirm appointment │          │ Display error message│
└─────────────────────┘          └─────────────────────┘
         │                                  │
         ▼                                  ▼
        ◉                          ┌─────────────────────┐
                                   │    Retry payment     │
                                   └─────────────────────┘
                                              │
                                              ▼
                                             ◉
```