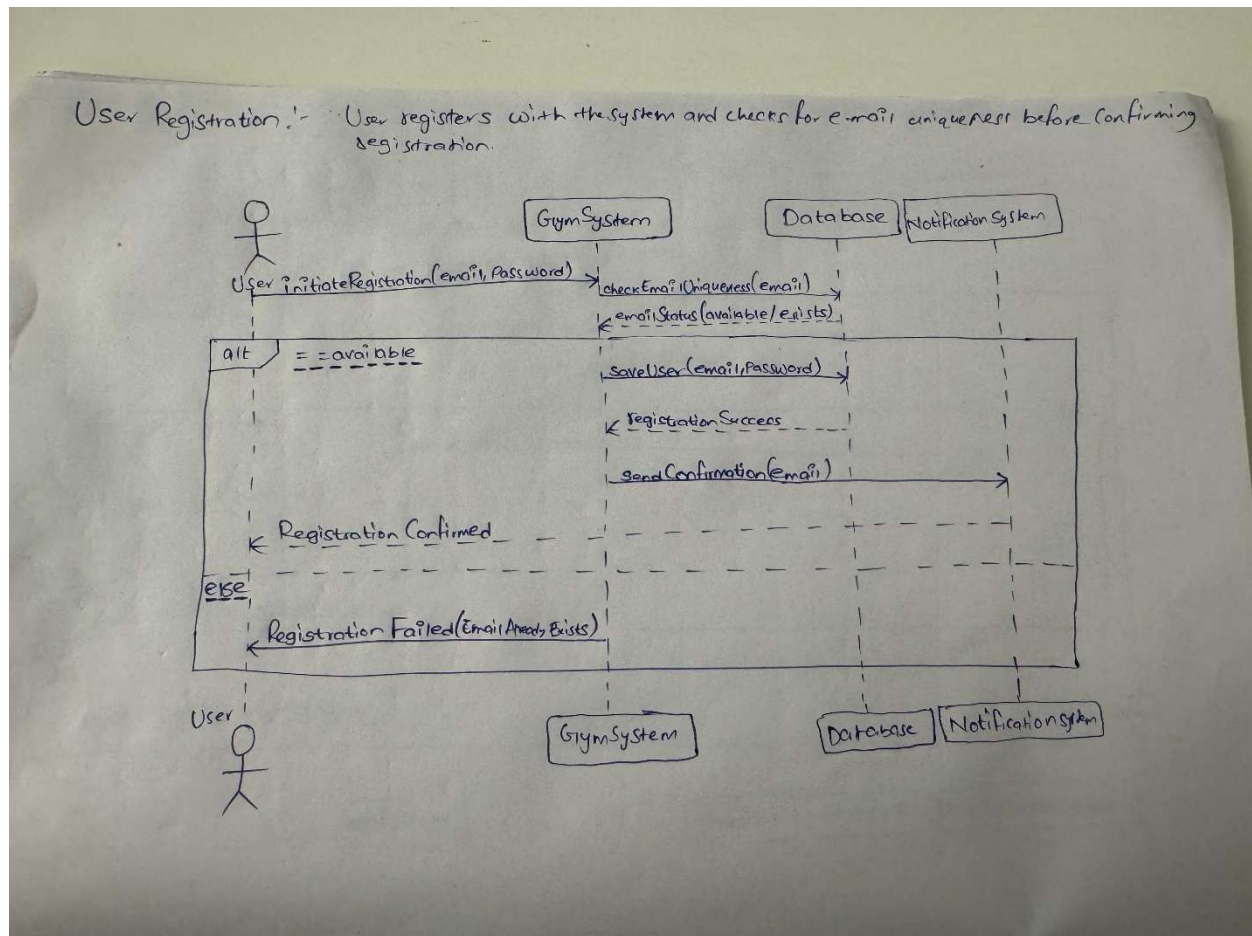# IC4 - Sequence + State Diagrams

Team members: Guru Saran Reddy Busireddy, Prajwal Garla, Mahesh Peta, Hari Naga Venkata Sai Posani.
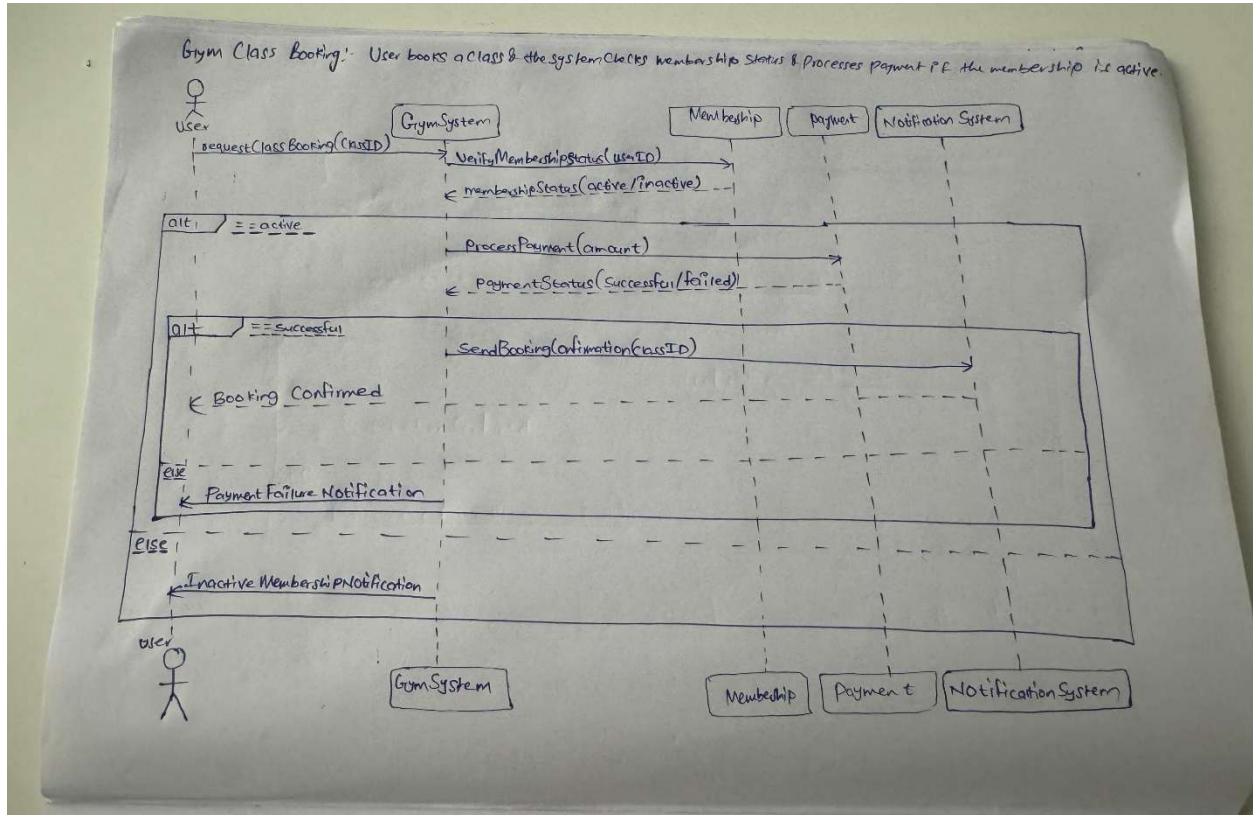
Sequence Diagrams:

For the sequence diagrams we have selected fragment style approach because this clearly represents different paths of gym class booking like successful booking, browsing classes, payment failure or membership issues. This approach can allow us to represent the whole in a single diagram.
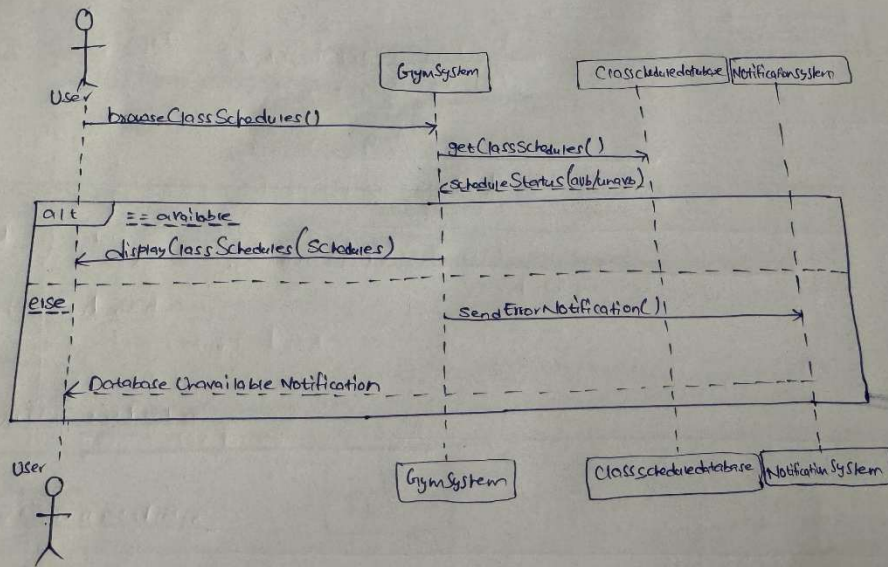
1. User Registration process

2. Gym Class Booking

Gym Class Booking: User books a class & the system checks membership status & processes payment if the membership is active.

3. Browse Gym Class Schedules

Browse Class Schedules:- User browse the available class schedules. System retrives schedule from database & display to user. If db is temporarily unavailable then error notification is sent.

Sequence diagram:
- User → GymSystem: browseClassSchedules()
- GymSystem → ClassScheduleDatabase: getClassSchedules()
- ClassScheduleDatabase → GymSystem: ‹scheduleStatus (avb/unavb)›
- alt == available
  - GymSystem → User: displayClassSchedules(Schedules)
- else
  - ClassScheduleDatabase → NotificationSystem: SendErrorNotification()
  - NotificationSystem → User: Database Unavailable Notification

Participants: User, GymSystem, ClassScheduleDatabase, NotificationSystem

4. Class Creation by Gym Manager
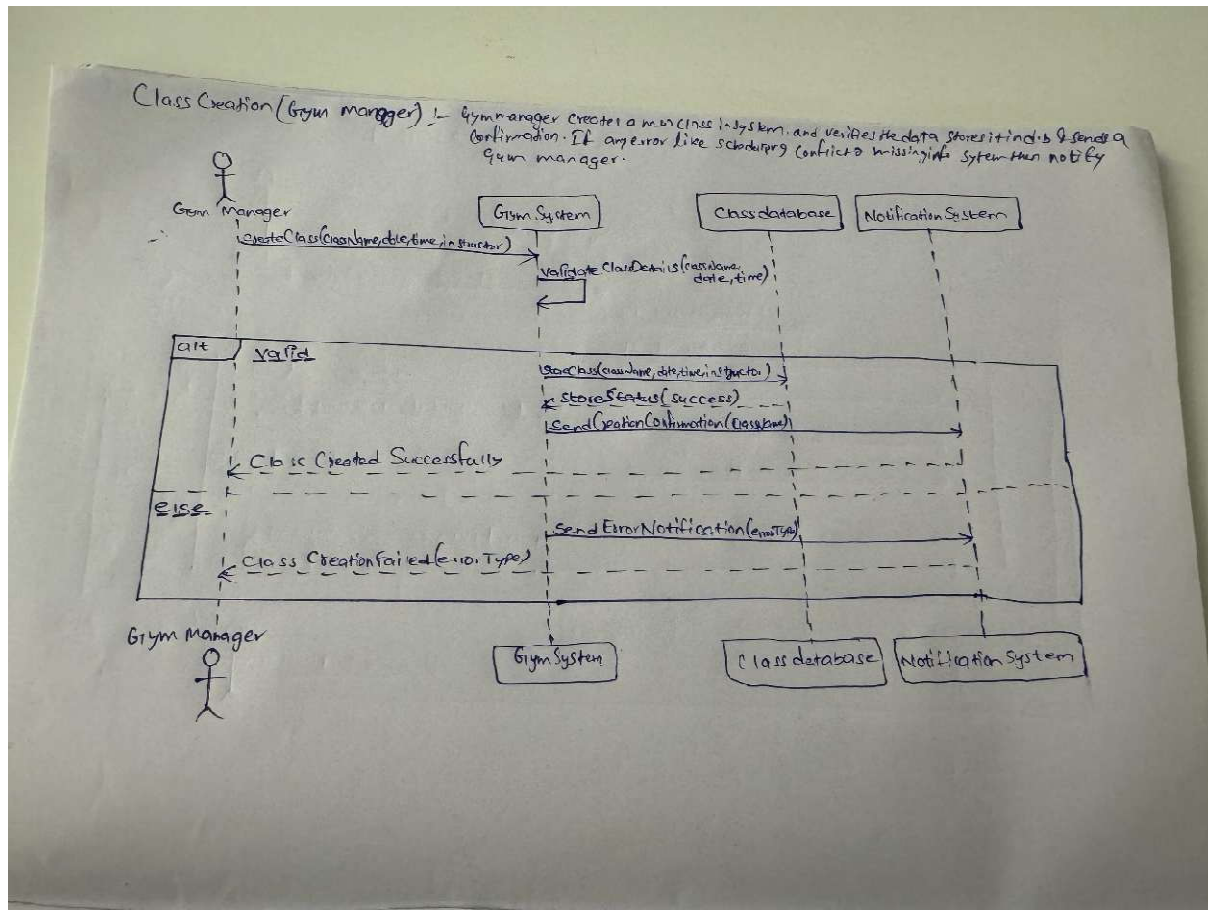
State Machine Diagram:

Class Booking Process State Machine:

Class Booking Process State Machine

The state machine representing lifecycle of a gym class booking from initiation through membership verification, payment & final confirmation or cancellation.

- SystemReady
  - Idle
- userInitiates Booking
  - bookingInitiated
    - [booking Request Received]
- validate Booking
  - Verification
    - [membershipStatus Check]
- confirm MembershipAnd Class
  - Pending Payment
    - [membershipActive] and [classAvailable]
- VerificationFailure
- initiate Payment
  - Payment Processing
    - [Class Available]
- paymentFailure
- paymentSuccess
  - bookingFinalized
    - [sufficient Funds]
    - [insufficient Funds]
- end Of Booking Process