
Software Requirements and Design Document

for

CRICPRO

Prepared by:

Muhammad Raza Khan 22i-1234

Bilal Javed 22i-0788

Abdur Rehman Khan 22i-1234

ABR SOLUTIONS

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1. Introduction

1.1 Purpose

Cricpro is a comprehensive cricket management system designed to streamline the operations of cricket clubs, players, and associated stakeholders. The system aims to simplify player and staff management, equipment purchasing, and match scheduling while fostering effective collaboration and data-driven decision-making.

1.2 Product Scope

This project focuses on the domain of cricket management, covering essential areas such as player, club, and staff management, match scheduling, and equipment procurement. The system will replace manual, fragmented approaches with an automated, integrated solution for cricket administrators, players, coaches, and support staff.

Previous Tools or Work:

Traditional manual management systems such as spreadsheets or paper-based management.

1.3 Title

CRICPRO: Cricket Management System "Revolutionizing Club, Player, and Match Management for Ultimate Efficiency"

1.4 Objectives

The key objectives of this project include:

1. Developing a centralized system to manage players, staff, clubs, and stadiums.
- 2.. Simplifying the process of scheduling matches and booking practice sessions.
3. Providing real-time player statistics and performance analysis tools.
4. Streamlining the procurement and purchase of cricket equipment.
5. Improving communication between team management, coaches, players, and support staff through effective notifications and reporting mechanisms.

1.5 Problem Statement

Managing a cricket club or league involves complex coordination across multiple actors including players, coaches, staff, and suppliers. Manual systems are prone to errors, inefficiencies, and miscommunications, which can lead to mismanagement of resources, unscheduled matches, and poor performance tracking.

Currently, cricket clubs and organizations often rely on multiple disconnected tools (e.g., spreadsheets, messaging apps, etc.) to manage key operations. This results in inefficient processes, lack of transparency, and slow communication between players, coaches, and

management. Inaccuracies in player statistics, delays in equipment procurement, and difficulty in scheduling matches can all adversely affect the smooth operation of clubs.

2. Overall Description

2.1 Product Perspective

Cricpro is a new, self-contained software system designed to manage and streamline the operations of cricket clubs and organizations. It is not a follow-on product but rather an original solution tailored to meet the unique needs of cricket management. The product is developed as an all-in-one platform that integrates various subsystems to handle different aspects of cricket operations, including player management, match scheduling, equipment procurement, and performance analytics..

2.2 Product Functions

Cricpro provides a wide range of features grouped into major functional areas. The high-level functions include:

- **Player and Staff Management:**

- Add and manage player and staff.

- Handle join requests from players and staff.

- Assign players to teams and roles.

- **Match and Practice Management:**

- Schedule matches and practice sessions.

- Record match results and performance data.

- Book practice sessions and manage team availability.

- **Fitness and Diet Management:**

- Provide personalized diet and fitness plans for players.

- Monitor progress and suggest improvements.

- **Club and Stadium Management:**

- Maintain club details and stadium facilities.

- Manage Training requests.

Conduct match.

2.3 List of Use Cases

PLAYER

1. Create Diet plan.
2. Create Fitness plan.
3. Book Solo training Session.
4. View Profile

STAFF

5. Book team training session.
6. Conduct players training
7. Suggest Diet plan.
8. Review Diet plan.
9. Suggest Fitness plan.
10. Review Fitness plan.

CLUB ADMIN

11. Manage players.
12. Manage Staff.
13. Shedule Match.
14. Manage match requests.

STADIUM ADMIN

15. Conduct Match.
16. Solo Training Requests.
17. Team Practice Requests.

2.4 Extended Use Cases

1. PLAYER MANAGEMENT:

a. Use Case Name:

Player Management

b. Scope:

Cricket Management System (CRICPRO)

c. Level:

User Goal

d. Primary Actor:

Club Manager

e. Stakeholders and Interests:

Club Manager: Wants to efficiently manage the club's player roster, including adding new players, removing or updating player information, and approving or rejecting joining requests.

Players/Applicants: Want to join the club and have their applications reviewed in a timely manner.

Team Coach: Wants to have an up-to-date player list for team planning and match preparation.

f. Preconditions:

The club manager is logged in to the system with appropriate permissions.

The system is operational and can access the player database.

g. Postconditions:

Player records are updated, added, or removed as per the club manager's actions.

Joining requests are approved or rejected with appropriate notifications.

The player list is consistent with the latest updates.

h. Main Success Scenario:

1. The club manager logs into the system and accesses the player management section.
2. The system displays the list of current players and any pending joining requests.
3. The club manager performs one of the following actions(add or Remove)
4. If there are pending joining requests, the club manager reviews each request.
5. The club manager either approves or rejects the joining request based on the club's requirements.
6. The system updates the player database according to the club manager's actions.

2. MANAGE PRACTICE SESSIONS:

a. Use Case Name:

Manage Practice Sessions

b. Scope:

Cricket Management System (CRICPRO)

c. Level:

User Goal

d. Primary Actor:

User (Player)

e. Stakeholders and Interests:

Player: Wants to book a practice session with a trainer specializing in the required area (e.g., batting, bowling).

Trainer: Wants to receive and manage practice session requests based on their specialties.

• **Club Admin:** Wants to ensure practice sessions are booked efficiently and trainers are utilized appropriately.

f. Preconditions:

The user is logged in to the system.

The trainers' specialties are recorded in the system.

Available practice slots and trainers are listed in the system.

g. Postconditions:

The practice session is confirmed, and the trainer is assigned.

The session request is removed from all other trainers once accepted.

The practice schedule is updated in the system.

h. Main Success Scenario:

1. The user logs into the system and navigates to the practice session booking section.
2. The user selects the desired practice session type and available slot.
3. The system sends the practice session request to all trainers who specialize in the selected type.
5. The trainers receive the session request and have the option to accept or reject it.
6. If a trainer accepts the request, the system assigns the session to that trainer and removes the request from other trainers.

3. CREATE/SELECT FITNESS PLAN:

Level: User Goal **Scope:** Fitness Management System

Use Case Name: Create/Select Fitness Plan **Primary Actor:** Player **Stakeholders and Interests:**

Player: Wants to create or select a fitness plan that suits their goals.

Physician: Wants to provide suitable fitness plans for players to follow.

Preconditions:

The player is logged into the system.

The player's profile has been reviewed by the physician.

Postconditions:

A fitness plan is selected or created and saved to the player's profile.

Main Success Scenario:

1. The player selects the "Fitness Plan" option from their profile.
2. The player is presented with two options: Create a Custom Plan or Select a Suggested Plan.

3. The player chooses to create a custom plan or selects from a list of plans suggested by the physician.
4. The system displays the plan details, and the player confirms the selection.
5. The selected plan is saved to the player's profile.

Extensions:

☐ Player Requests a Suggested Plan:

1. The player can request the physician to suggest a plan directly.
2. The physician reviews the player's request and suggests a plan.
3. The player reviews the suggested plan and confirms it.

4. SCHEDULE MATCH:

Level: User Goal **Scope:** Match Scheduling System

Use Case Name: Schedule Match

Primary Actor: Club Manager **Stakeholders and Interests:**

Club Manager: Wants to successfully schedule matches with confirmed players and the stadium.

Stadium Admin: Needs to approve match schedules.

Opponent Club Manager: Needs to approve and participate in the match.

Players: Need to agree to participate in the scheduled match.

Preconditions:

☐ The club manager is logged into the system.

Postconditions:

The match is successfully scheduled or declined.

Main Success Scenario:

1. The club manager selects the "Schedule Match" option.
2. The club manager provides details for the match, including date, time, and a list of up to 11 players.
3. The club manager sends match requests to the stadium admin and the opponent club manager.
4. The stadium admin and opponent club manager review and accept the requests.
5. All players in the list confirm their participation.
6. The match is scheduled, and all stakeholders are notified.

5. SUGGEST DIET/FITNESS PLAN:

Level: User Goal **Scope:** Health Management System

Use Case Name: Suggest Diet/Fitness Plan **Primary Actor:** Dietitian, Physician **Stakeholders and Interests:**

Player: Wants personalized or general diet and fitness plans to follow.

Dietitian/Physician: Provides tailored or general diet and fitness plans.

Preconditions:

The player has requested a diet or fitness plan, or the dietitian/physician has decided to create a general plan.

Postconditions:

☐ A diet or fitness plan is suggested and available for players.

Main Success Scenario:

1. The dietitian/physician receives a request for a diet or fitness plan from a player.
2. The dietitian/physician reviews the player's profile and health data.
3. The dietitian/physician creates or selects a suitable plan for the player.
4. The suggested plan is added to the player's profile, and the player is notified.

6. Conduct Match

a. Use Case Name:

Conduct Match

b. Scope:

Cricket Management System (CRICPRO)

c. Level:

User Goal

d. Primary Actor:

Stadium Admin

e. Stakeholders and Interests:

Stadium Admin: Wants to efficiently manage match-related data, including entering scores and wickets for both teams.

Players: Want accurate and timely updates on their performance.

Team Managers: Require detailed match data for analysis and reporting.

Club Admin: Oversees the process to ensure match data is recorded correctly.

f. Preconditions:

The stadium admin is logged into the system.

The match is scheduled and listed in the system.

Player details for both teams are registered in the system.

g. Postconditions:

Match scores and statistics are successfully recorded and saved in the system.

Player performance data is updated in the database.

The match status is marked as "completed."

h. Main Success Scenario:

The stadium admin logs into the system and navigates to the "Conduct Match" section.

The system displays the scheduled matches for the day.

The admin selects the specific match to conduct.
The system shows details of both teams and their players.
The admin inputs match details, such as scores, wickets, and overs played for each player.
The system validates the data and saves it in the database.
The system updates the match status to "completed."
Player performance statistics are updated, and the system generates a match summary report.

7. Book Team Practice Session

a. Use Case Name:

Book Team Practice Session

b. Scope:

Cricket Management System (CRICPRO)

c. Level:

User Goal

d. Primary Actor:

Coach

e. Stakeholders and Interests:

Coach: Wants to book a team practice session at a specific stadium on a desired date without conflicts.

Players: Want sufficient practice opportunities for team improvement.

Stadium Admin: Needs to ensure there are no scheduling conflicts with matches or other events.

Club Admin: Oversees stadium usage to maximize efficiency.

f. Preconditions:

The coach is logged into the system.

Stadium availability and match schedules are updated in the system.

The team roster is registered in the system.

g. Postconditions:

The team practice session is successfully booked and added to the schedule.

The stadium's schedule reflects the new booking.

Conflicts with matches or other events are avoided.

h. Main Success Scenario:

The coach logs into the system and navigates to the "Book Team Practice Session" section.

The system prompts the coach to enter the desired date and stadium name.

The coach provides the date and stadium name for the practice session.

The system checks the stadium's schedule to ensure there are no matches or conflicting events on the selected date.

If the stadium is available, the system books the practice session for the team.

The system updates the stadium schedule to reflect the booking.

The system confirms the booking to the coach and notifies the players.

8 Staff Management

a. Use Case Name:

Staff Management

b. Scope:

Cricket Management System (CRICPRO)

c. Level:

User Goal

d. Primary Actor:

Club Admin

e. Stakeholders and Interests:

Club Admin: Wants to efficiently manage the club's staff roster, including adding new staff members, removing or updating staff information, and approving or rejecting joining requests.

Staff/Applicants: Want to join the club and have their applications reviewed promptly.

Team Manager: Wants to have an up-to-date staff list to ensure smooth operations and support for team management.

f. Preconditions:

The club admin is logged into the system with appropriate permissions.

The system is operational and has access to the staff database.

g. Postconditions:

Staff records are updated, added, or removed as per the club admin's actions.

Joining requests are approved or rejected with appropriate notifications.

The staff list is consistent with the latest updates.

h. Main Success Scenario:

The club admin logs into the system and accesses the staff management section.

The system displays the list of current staff members and any pending joining requests.

The club admin performs one of the following actions:

Adds a new staff member.

Removes an existing staff member.

Updates the information of an existing staff member.

If there are pending joining requests, the club admin reviews each request.

The club admin either approves or rejects the joining request based on the club's requirements.

The system updates the staff database according to the club admin's actions.

2.5 Use Case Diagram

M Raza Khan 22I-1234
Abdur Rehman 22I-1148
Bilal Javed 22I-0788



3. Other Nonfunctional Requirements

3.1 Software Quality Attributes

Maintainability: The codebase should adhere to modular and clean design principles to allow updates within 1 week for minor changes.

Portability: The application must run seamlessly on both Windows (10 and above) and macOS platforms...

3.2 Business Rules

Only club admins can approve or reject player and staff joining requests.

Only authorized users (e.g., coach, manager) can schedule or modify practice sessions.

Players can view only their own performance data, while team managers can view aggregated performance reports.

Stadium bookings must not conflict with pre-scheduled matches or practice sessions.

3.3 Operating Environment

Hardware Requirements:

Minimum of 4 GB RAM, 2 GHz processor, and 500 MB free disk space for the client system.

Operating System:

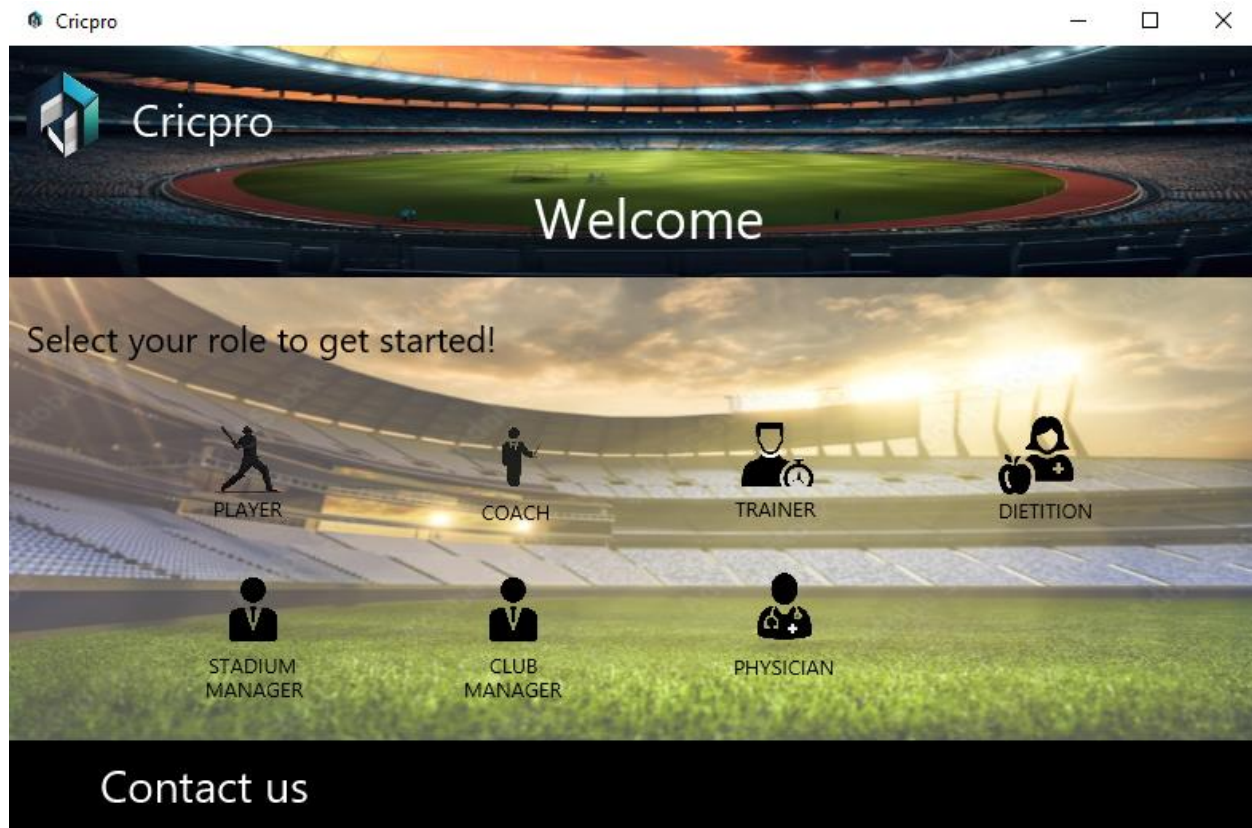
Compatible with Windows 10/11 or higher.


Software Dependencies:


Requires Java Runtime Environment (JRE) 11 or above.



Database: MySQL 8.0 or PostgreSQL 13.0.

3.4 User Interfaces





**Cricpro**





Player Login





Login

Don't have an account? [Sign up](#)



Sign Up



Home



Coach



Trainer



Dietitian



Physician



Back















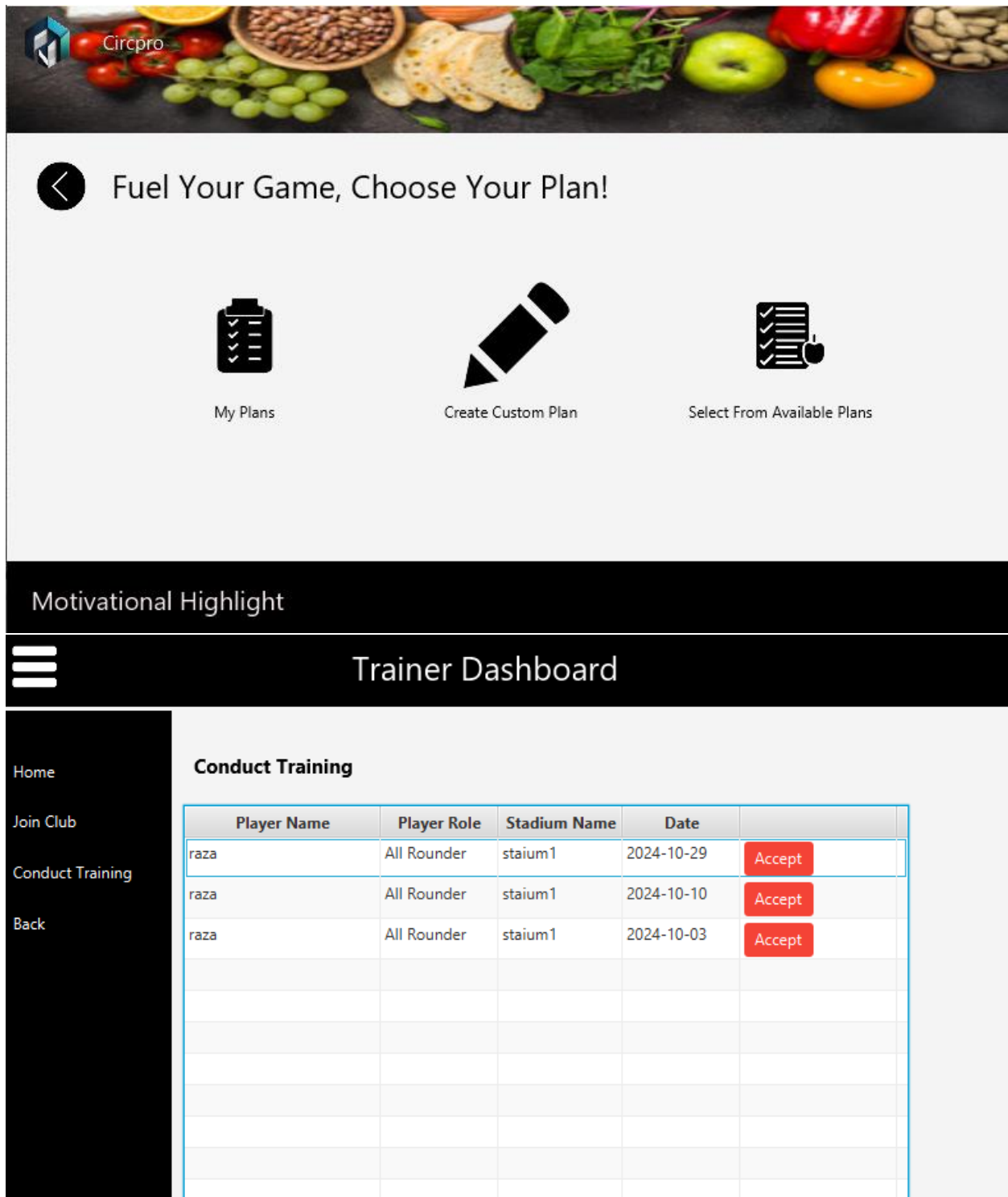
Speciality

☐ Batting ☐ Bowling ☐ Fielding

Sign Up



TRAINER



Circpro

Create Dietplan

Plan Name

Goal

Meals

Calories

Carbs

Protein

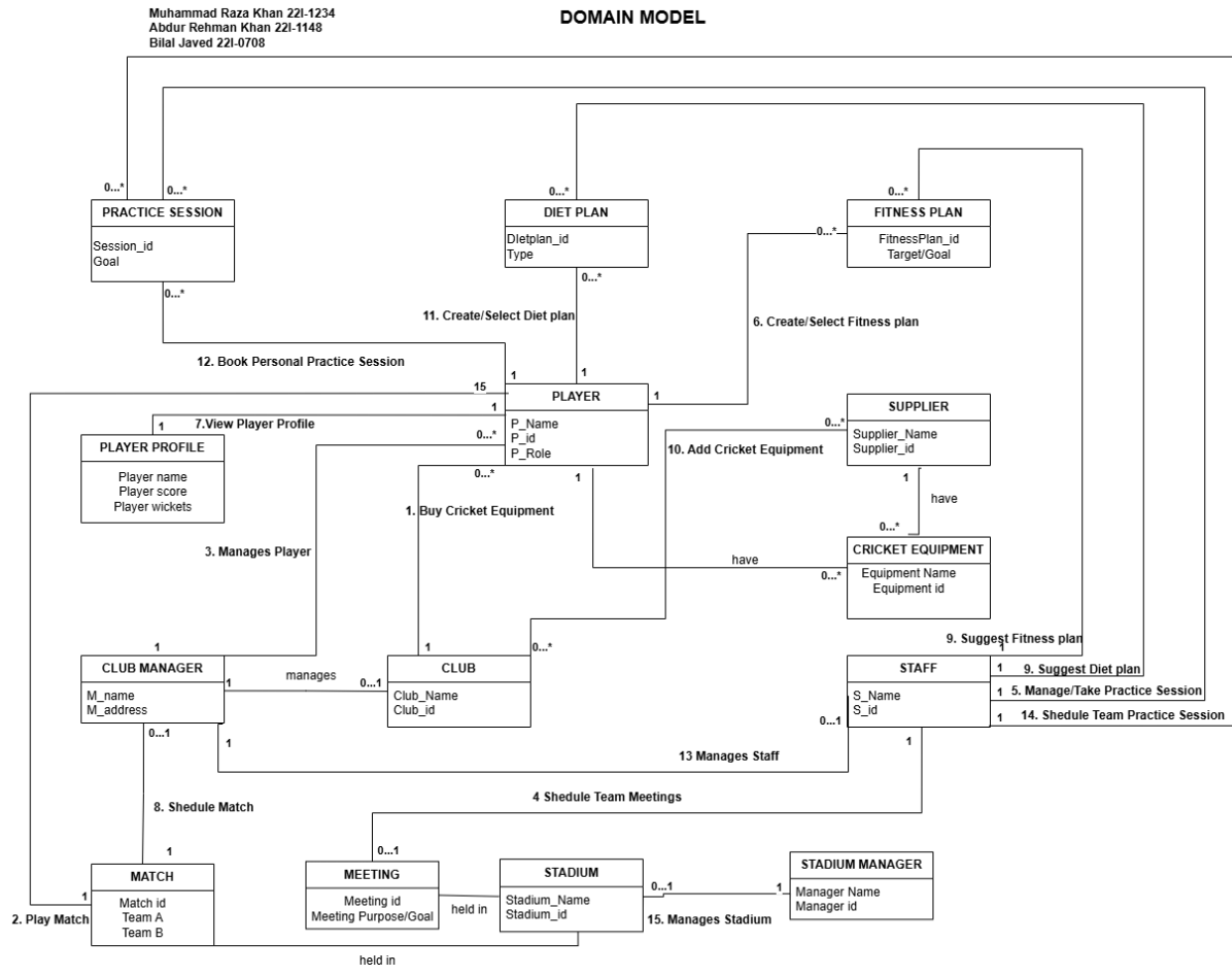
Fat

Fiber

Notes

Add

4. Domain Model

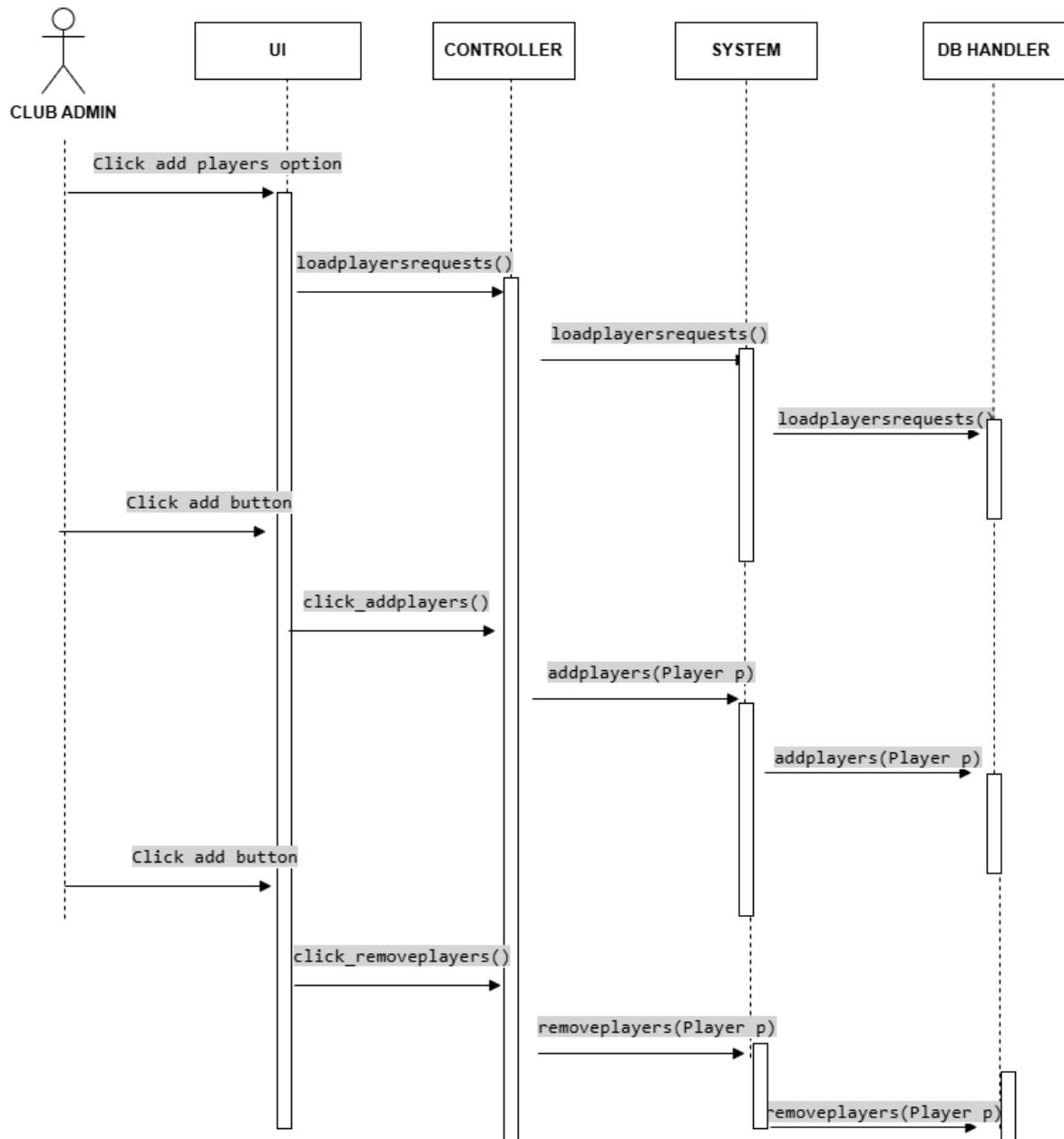


5. System Sequence Diagram

a) MANAGE PLAYERS

Muhammad Raza Khan 22I-1234
Abdur Rehman Khan 22I-1148
Bilal Javed 22I-0708

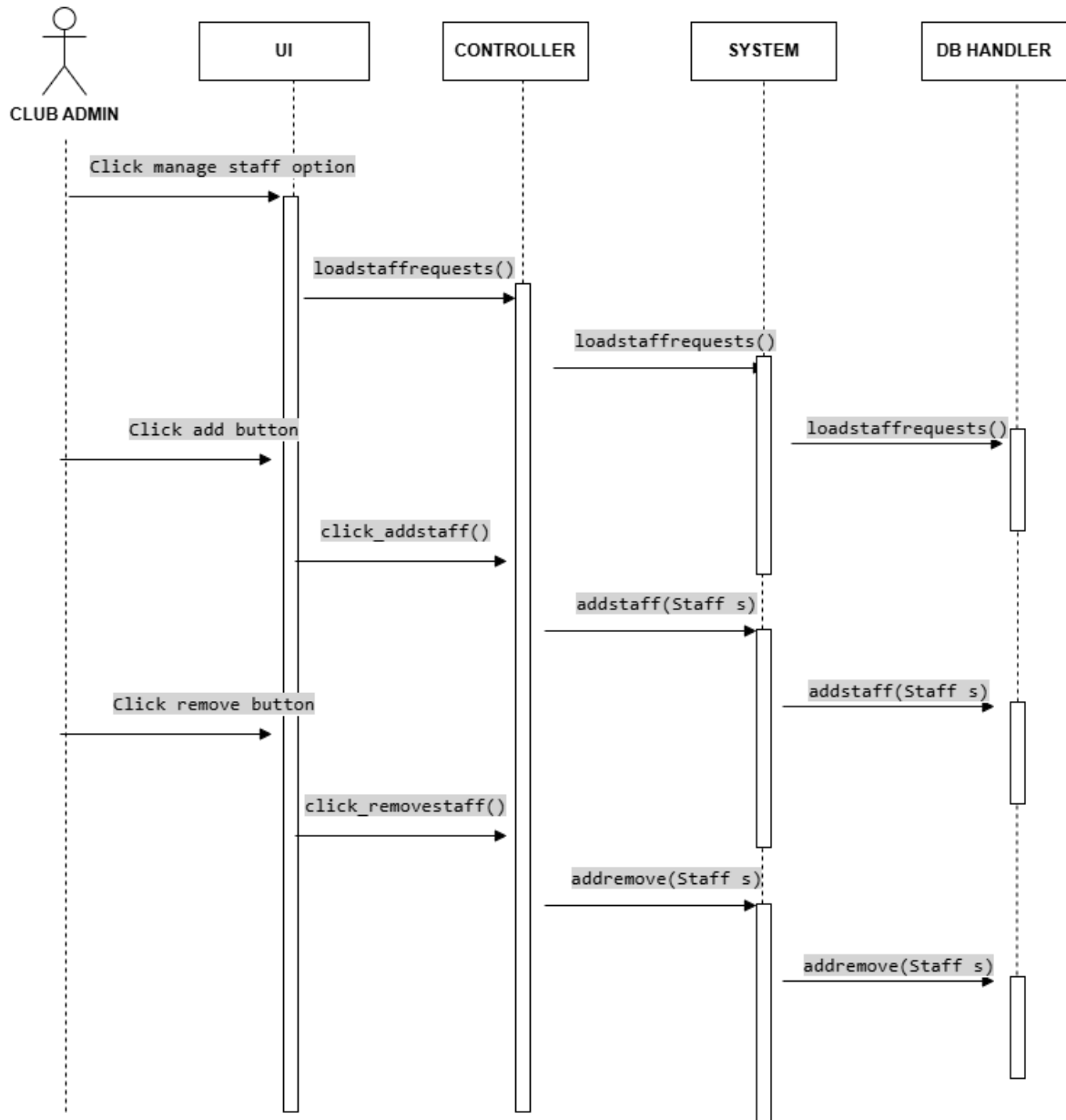
ACTION SEQUENCE DIAGRAM "MANAGE PLAYERS"



b)

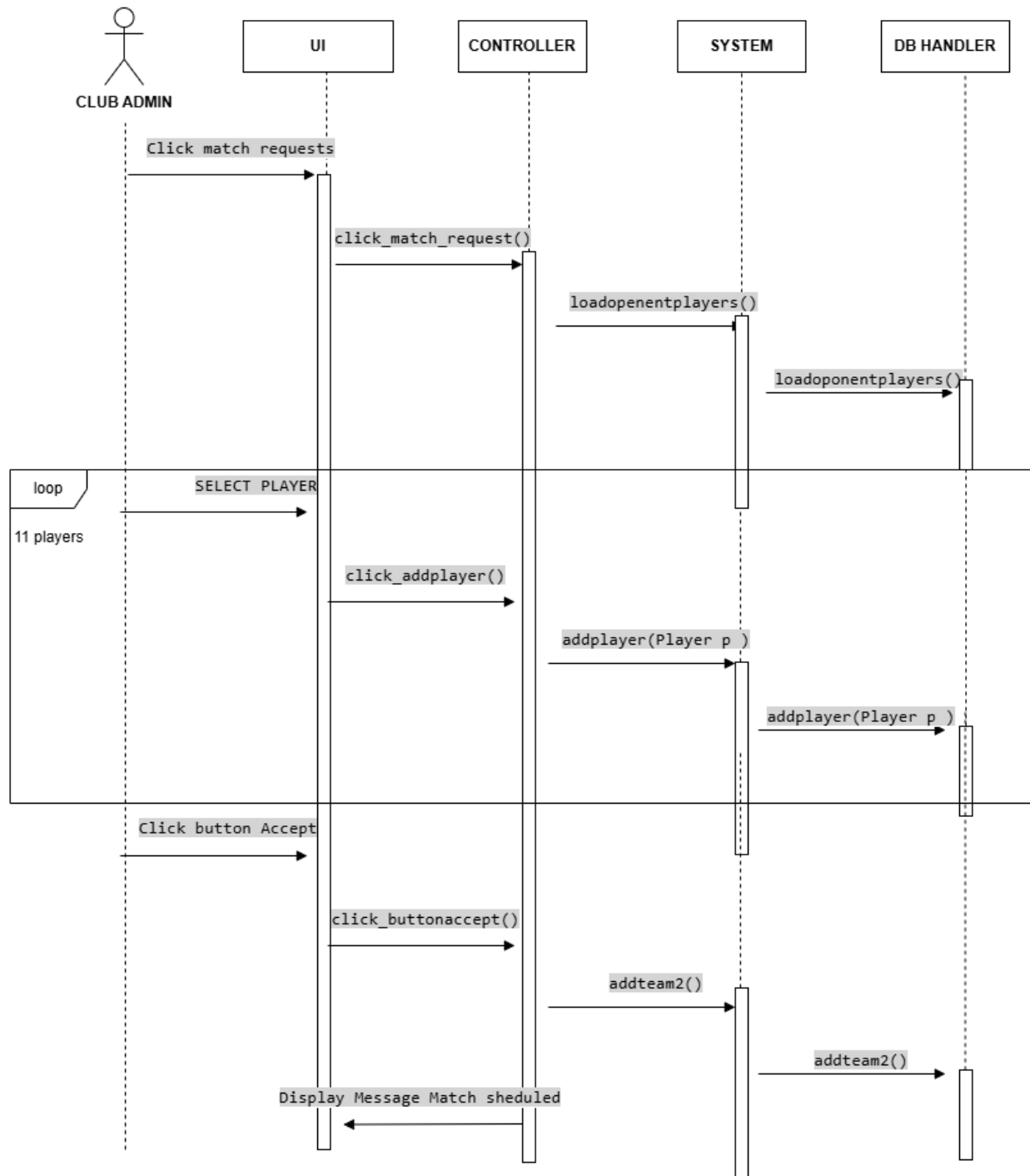
Muhammad Raza Khan 22I-1234
Abdur Rehman Khan 22I-1148
Bilal Javed 22I-0708

ACTION SEQUENCE DIAGRAM "MANAGE STAFF"



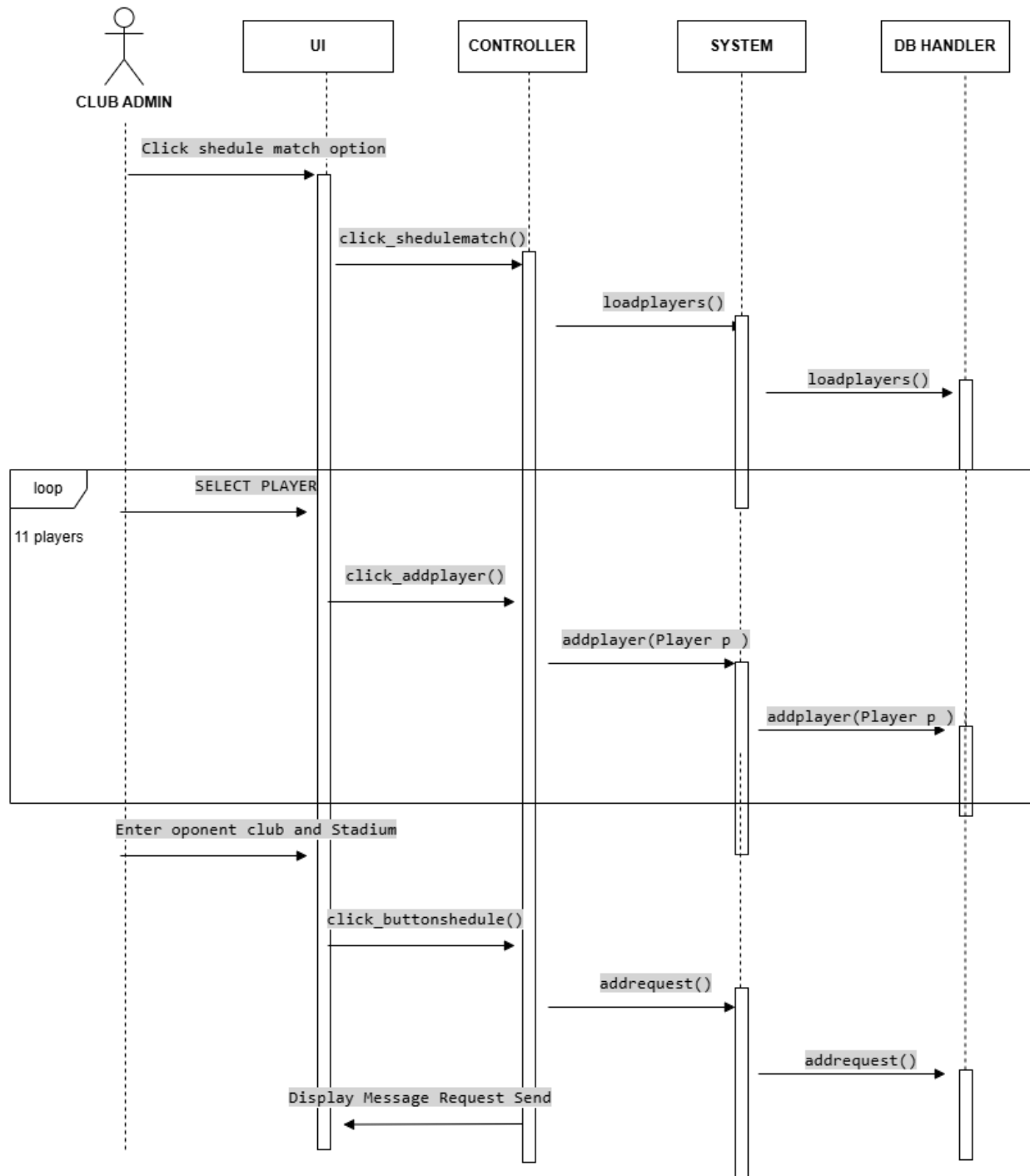
Muhammad Raza Khan 22I-1234
Abdur Rehman Khan 22I-1148
Bilal Javed 22I-0708

ACTION SEQUENCE DIAGRAM "MATCH REQUESTS"



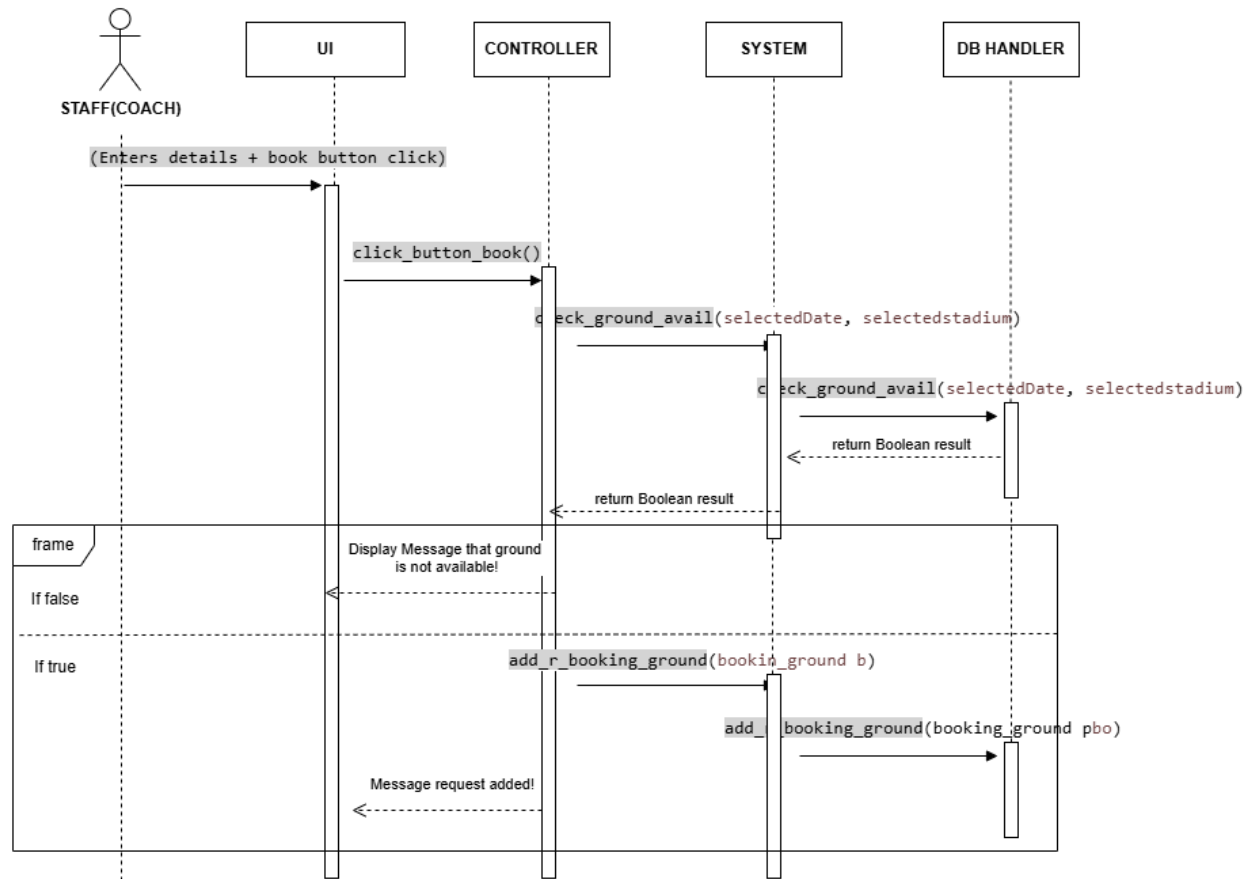
Muhammad Raza Khan 22I-1234
Abdur Rehman Khan 22I-1148
Bilal Javed 22I-0708

ACTION SEQUENCE DIAGRAM "SHEDULE MATCH"



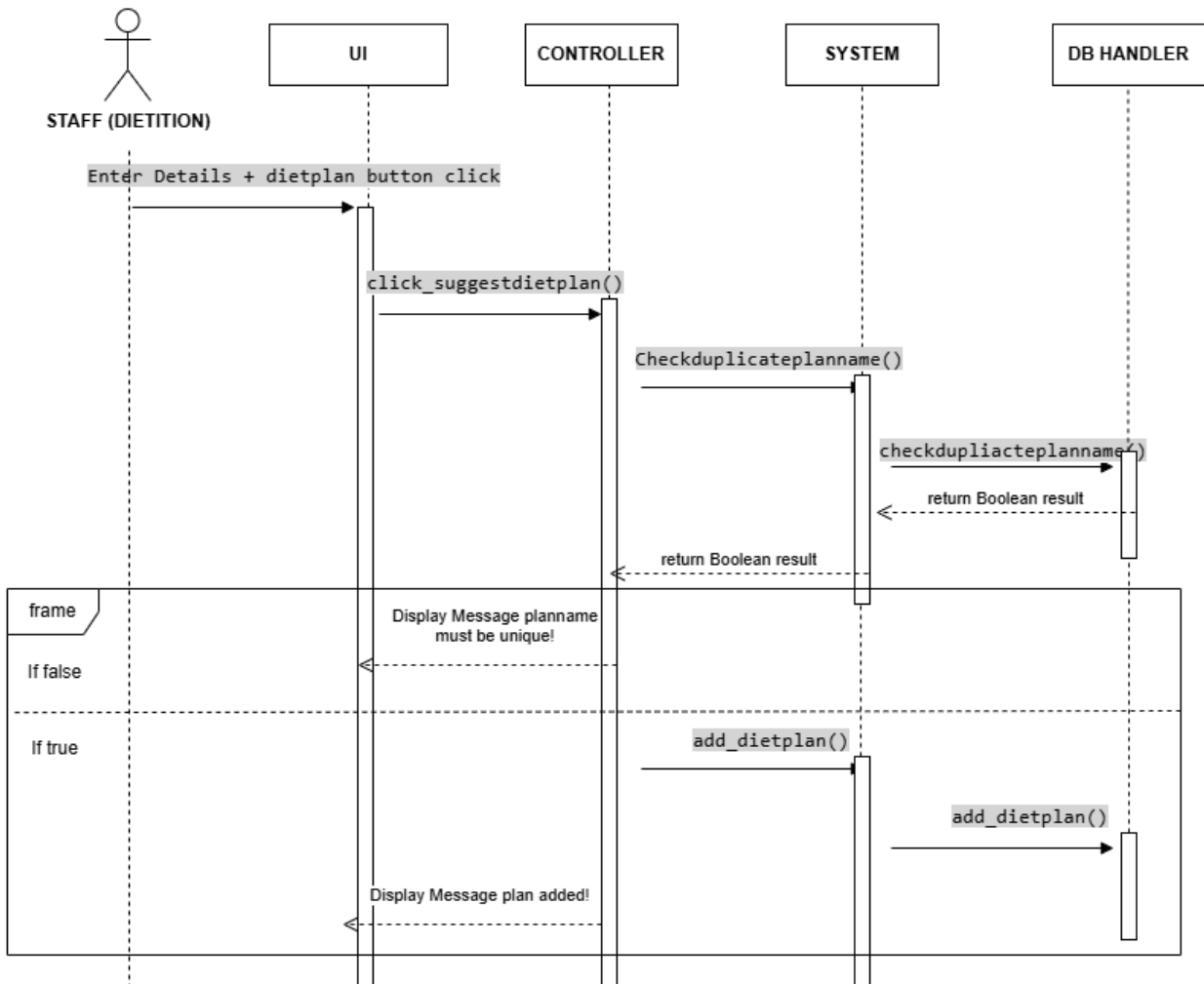
Muhammad Raza Khan 22I-1234
Abdur Rehman Khan 22I-1148
Bilal Javed 22I-0708

ACTION SEQUENCE DIAGRAM "BOOK TEAM PRACTICE SESSION"



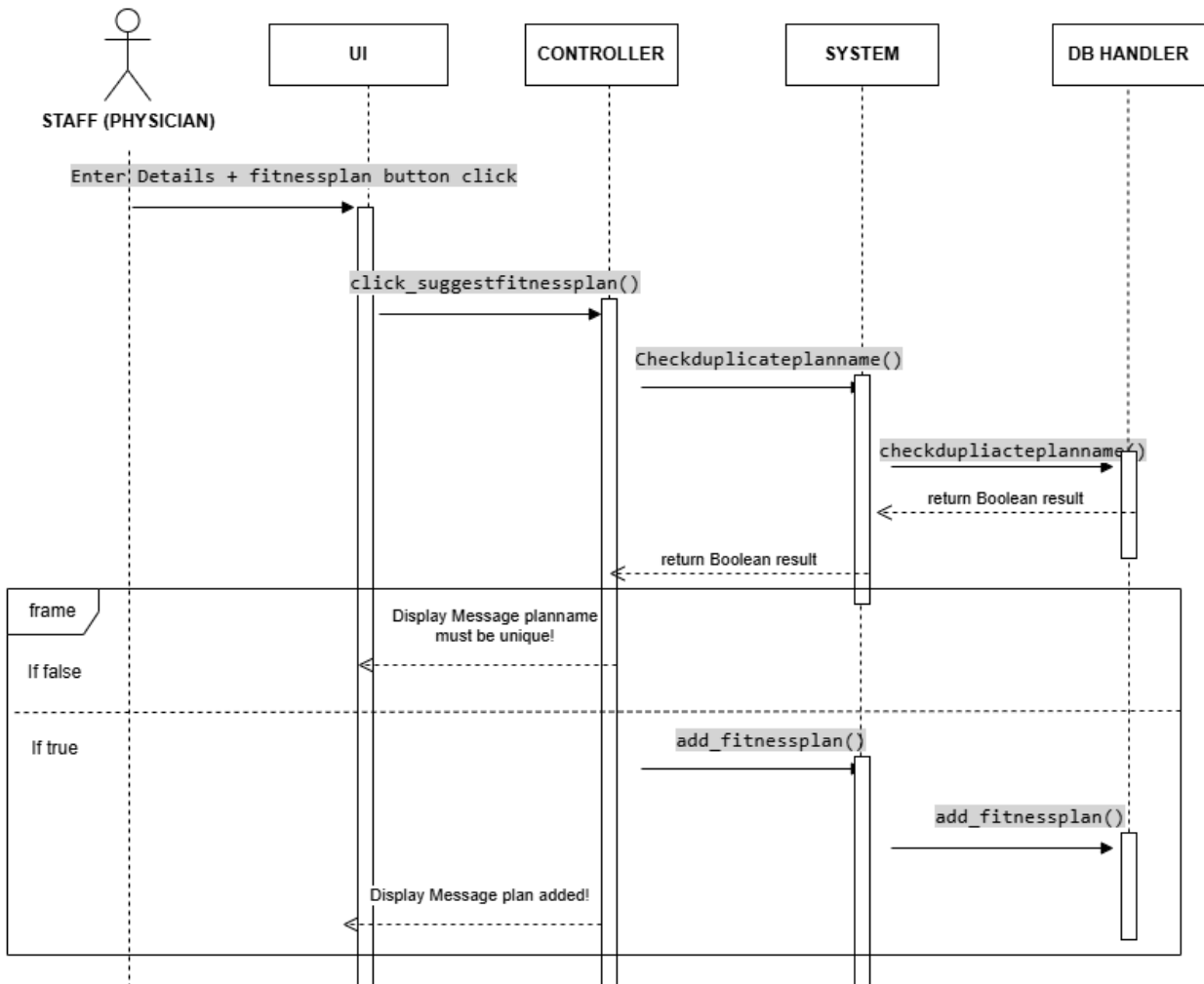
Muhammad Raza Khan 22I-1234
Abdur Rehman Khan 22I-1148
Bilal Javed 22I-0708

ACTION SEQUENCE DIAGRAM "SUGGEST DIETPLAN"



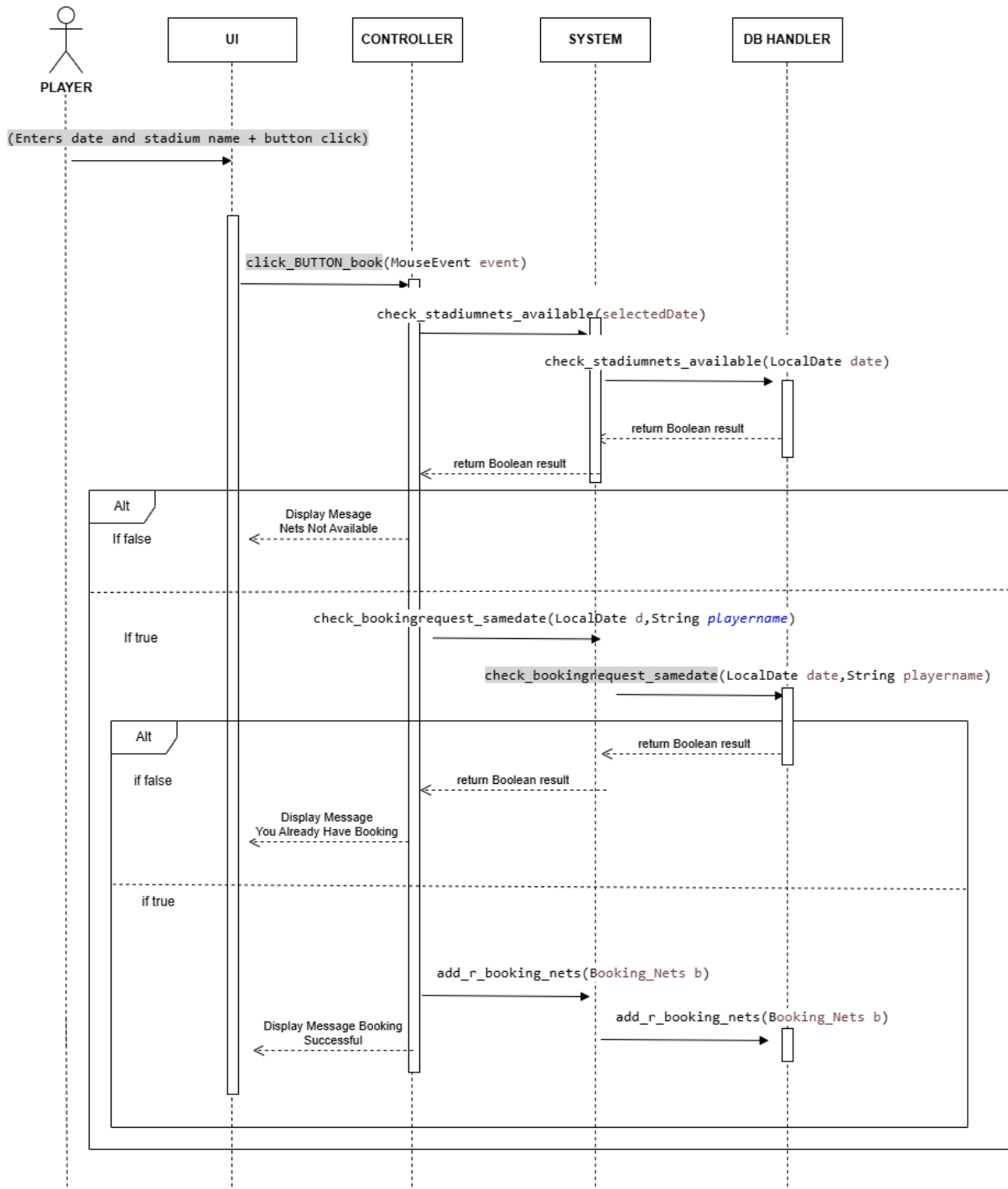
Muhammad Raza Khan 22I-1234
Abdur Rehman Khan 22I-1148
Bilal Javed 22I-0708

ACTION SEQUENCE DIAGRAM "SUGGEST FITNESSPLAN"



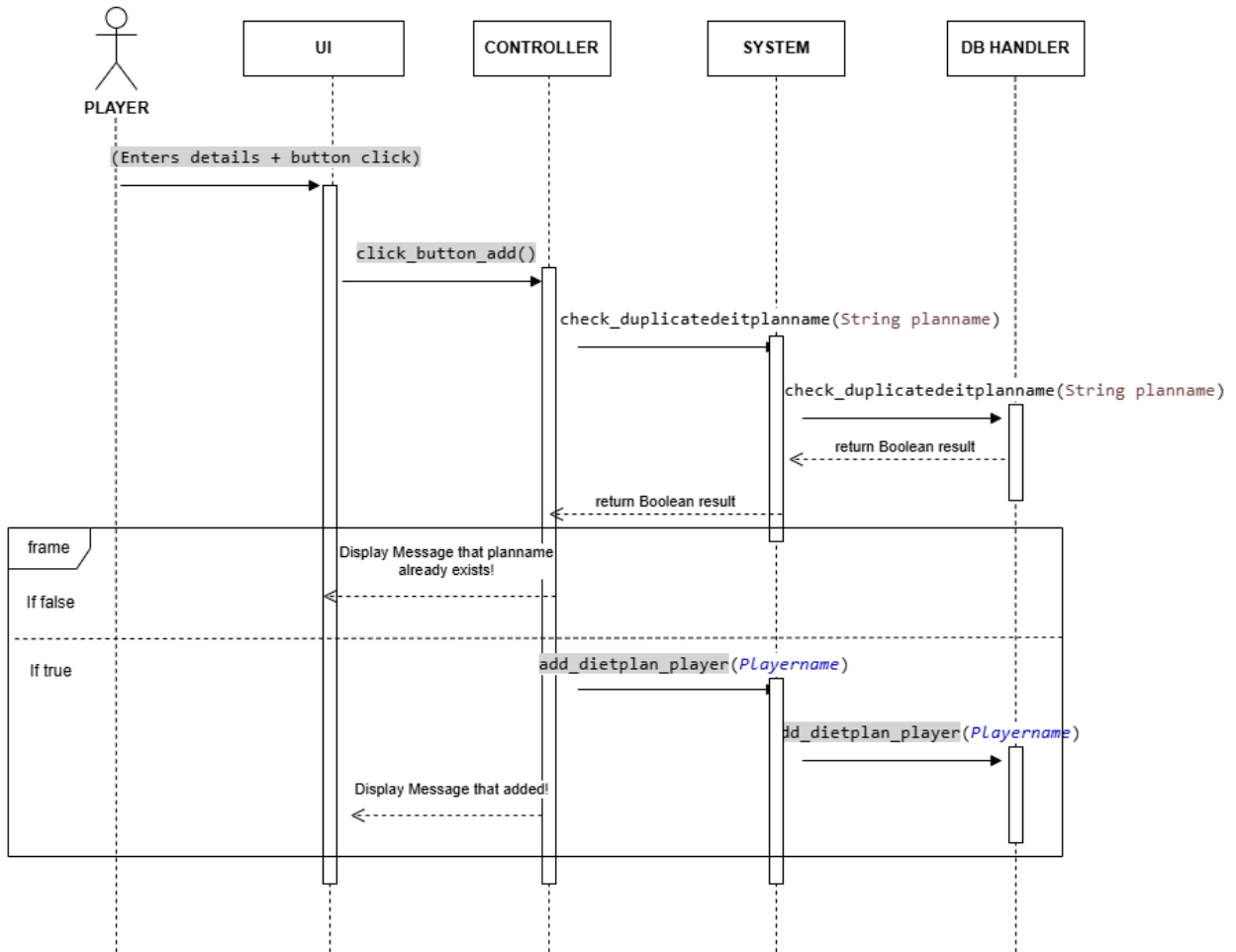
Muhammad Raza Khan 22I-1234
 Abdur Rehman Khan 22I-1148
 Bilal Javed 22I-0708

ACTION SEQUENCE DIAGRAM "BOOK TRAINING SESSION"



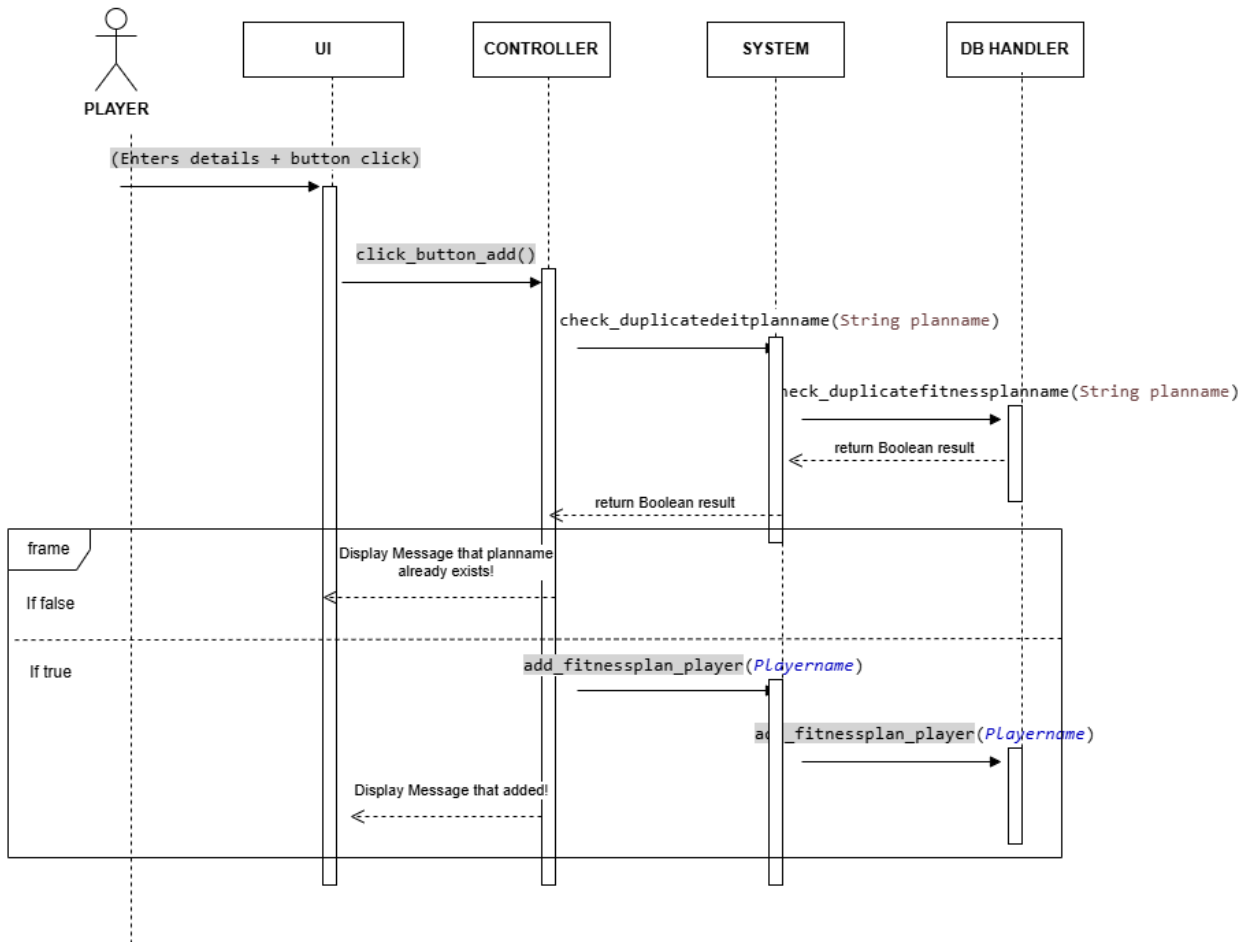
Muhammad Raza Khan 22I-1234
Abdur Rehman Khan 22I-1148
Bilal Javed 22I-0708

ACTION SEQUENCE DIAGRAM "CREATE DIETPLAN"



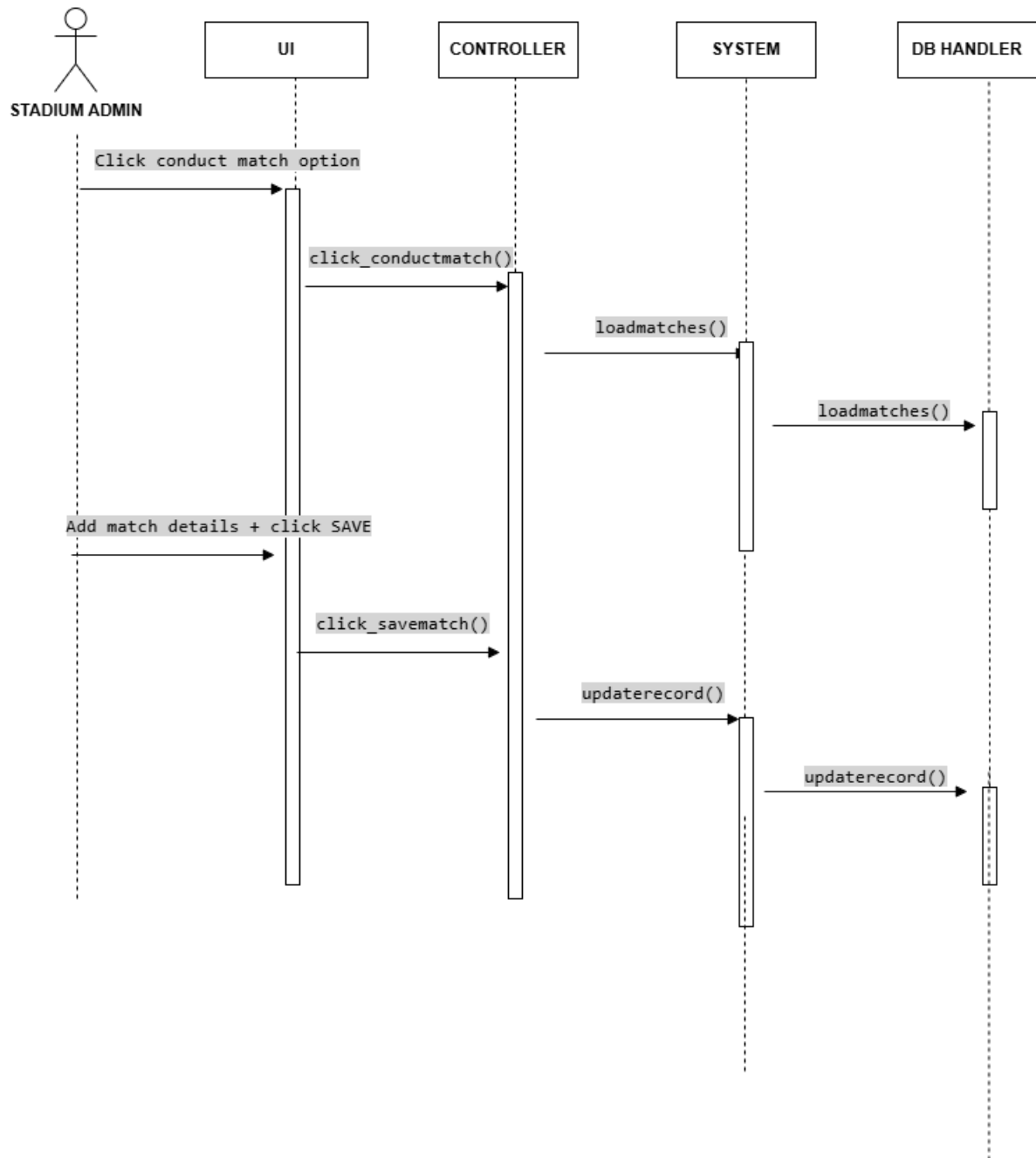
Muhammad Raza Khan 221-1234
Abdur Rehman Khan 221-1148
Bilal Javed 221-0708

ACTION SEQUENCE DIAGRAM "CREATE FITNESSPLAN"



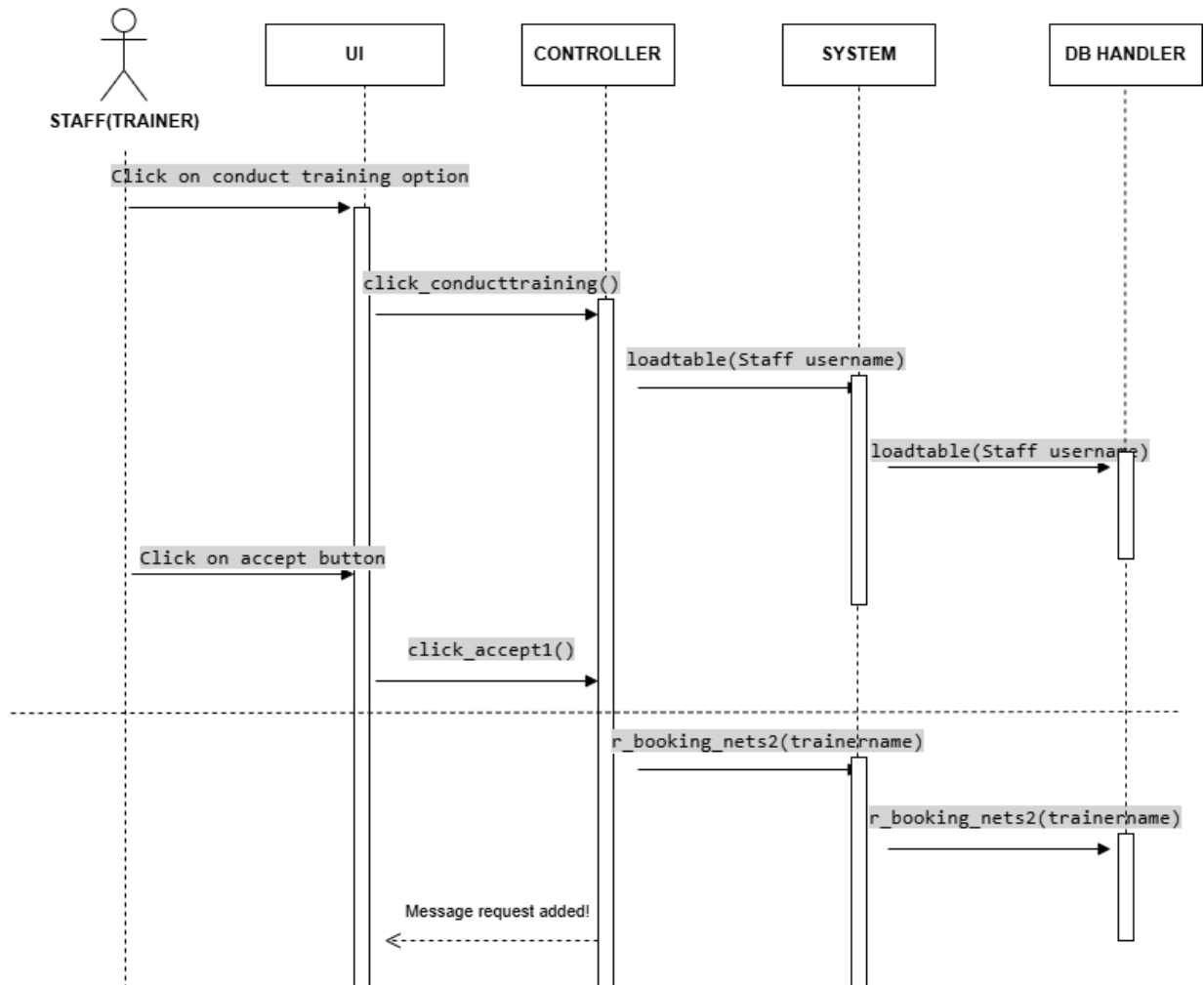
Muhammad Raza Khan 22I-1234
Abdur Rehman Khan 22I-1148
Bilal Javed 22I-0708

ACTION SEQUENCE DIAGRAM "CONDUCT MATCH"

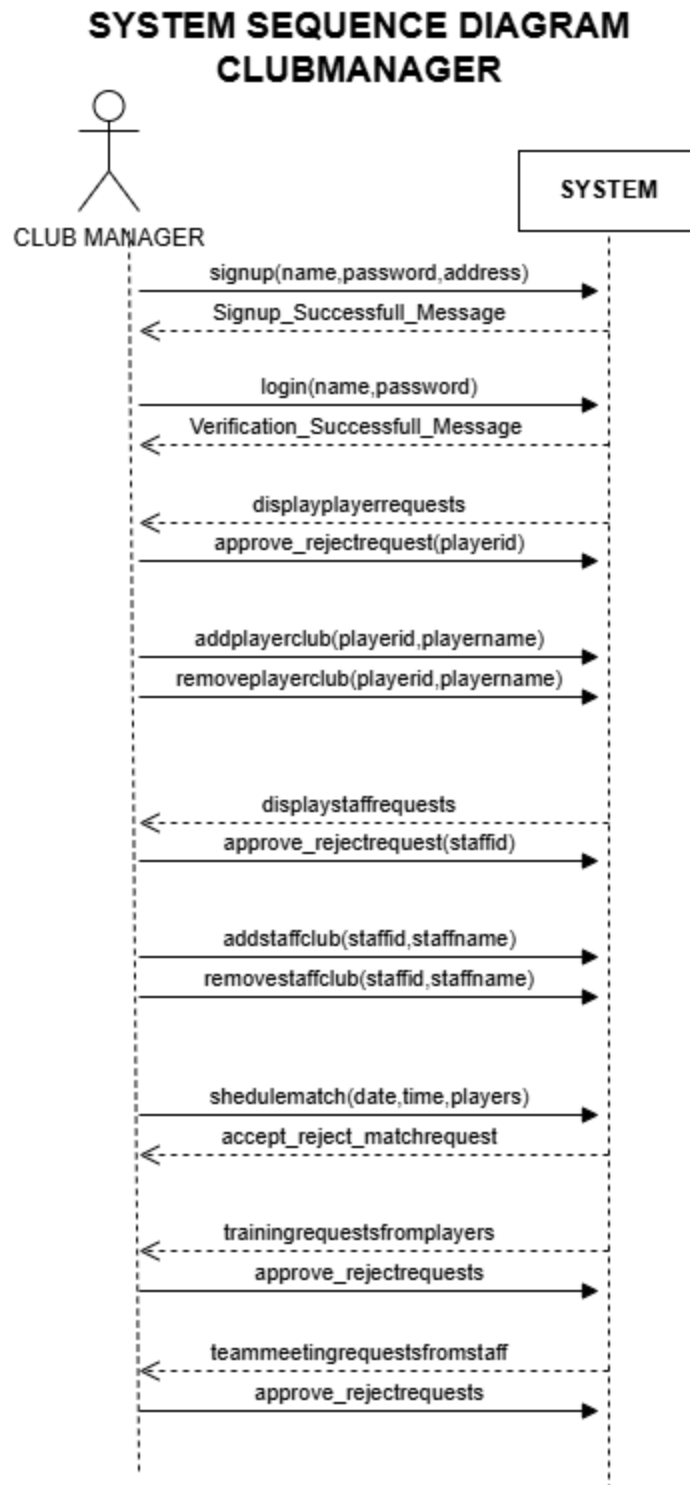


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Abdur Rehman Khan 22I-1148
Bilal Javed 22I-0708

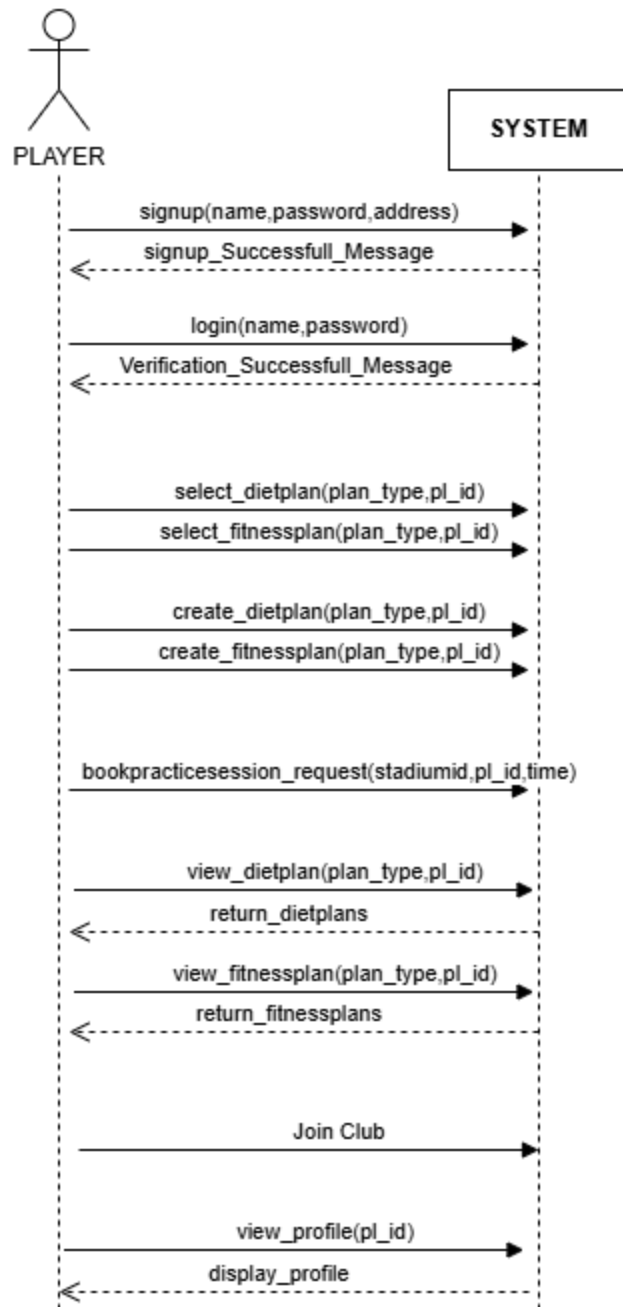
ACTION SEQUENCE DIAGRAM "CONDUCT TRAINING"



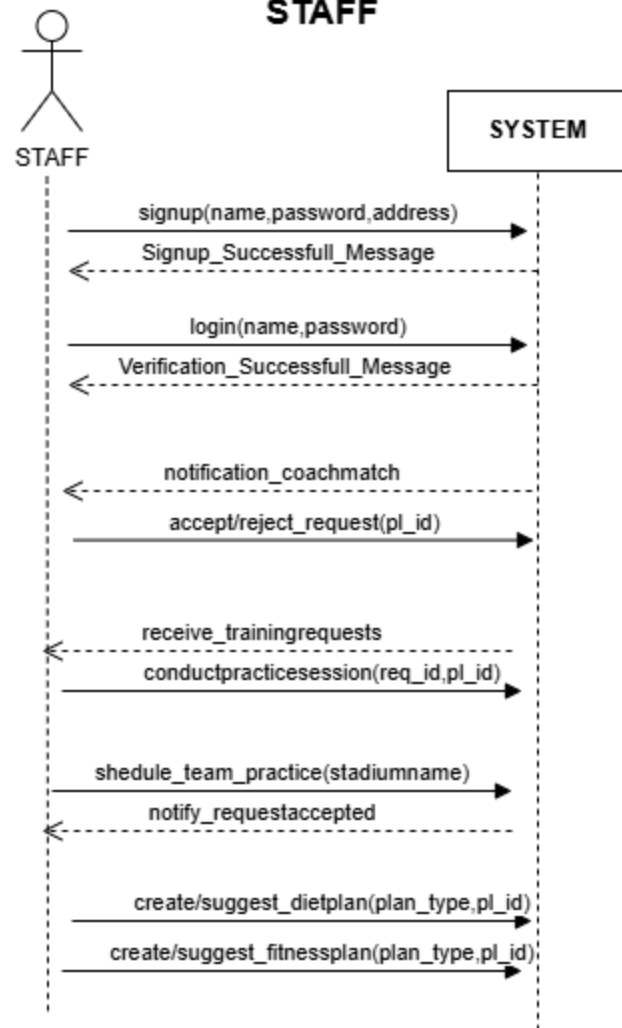
6. Sequence Diagram

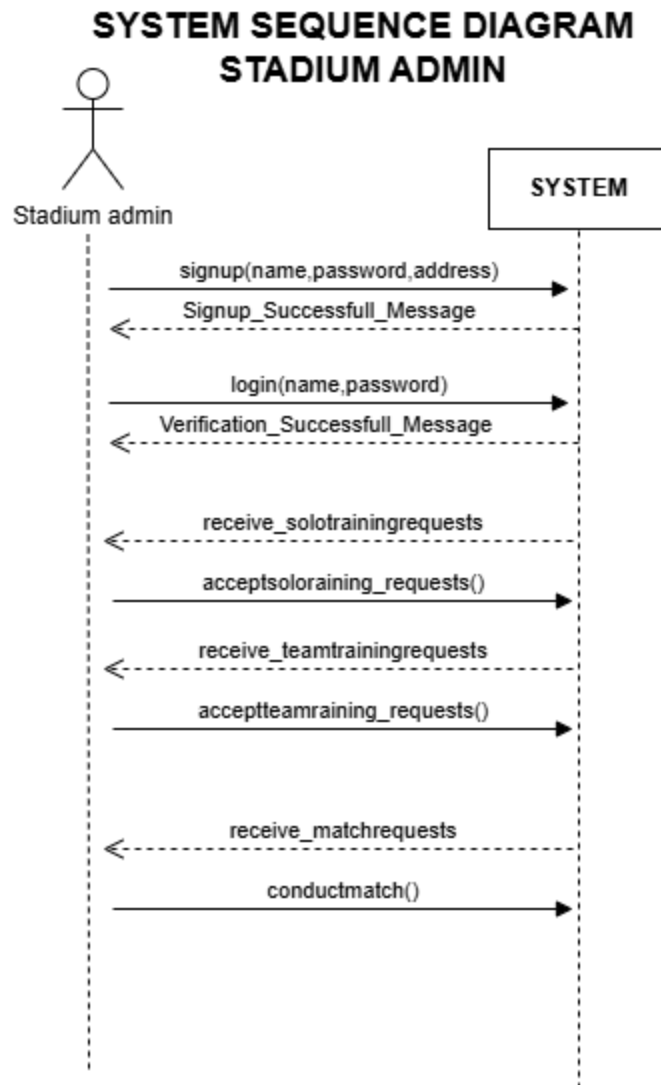


SYSTEM SEQUENCE DIAGRAM PLAYER



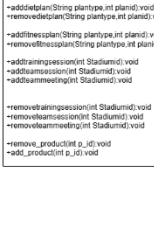
SYSTEM SEQUENCE DIAGRAM STAFF



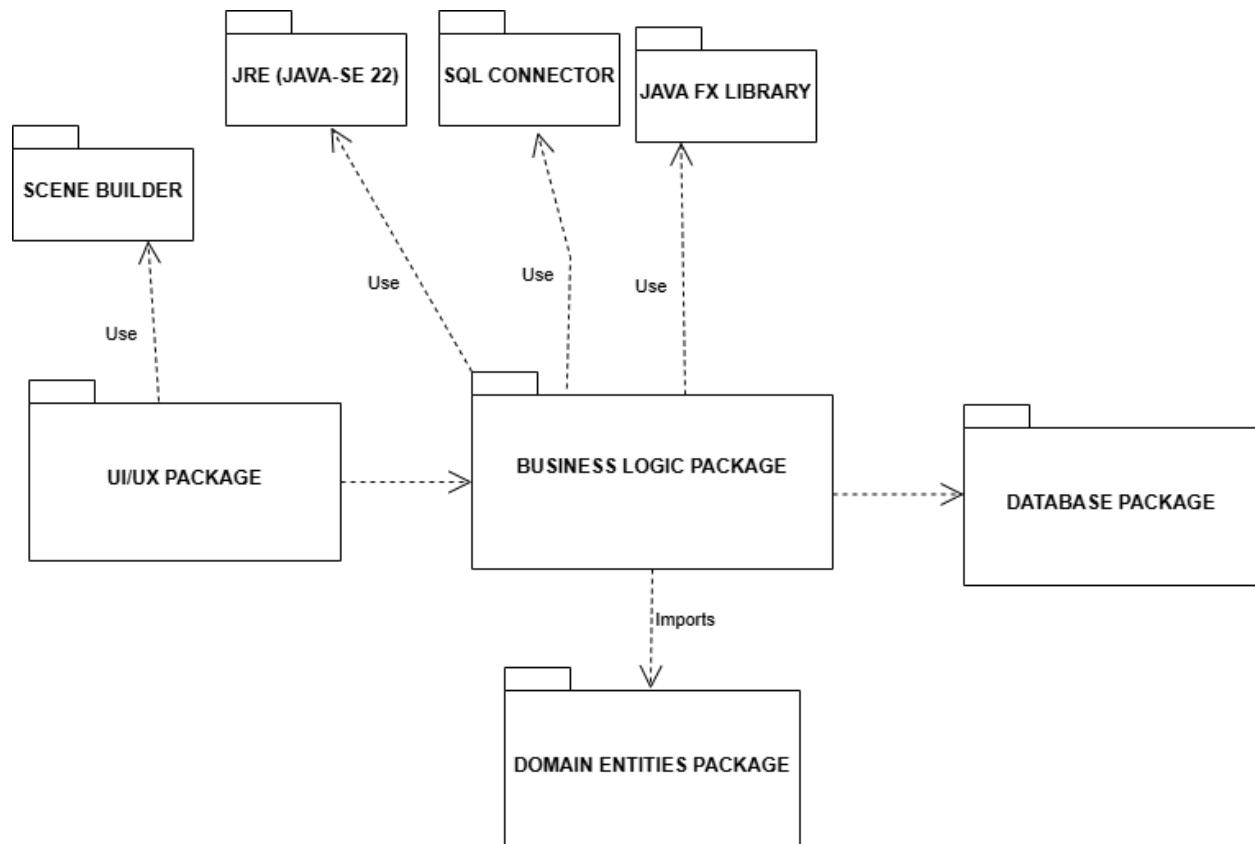


CLASS DIAGRAM

FITNESSPLAN
<ul style="list-style-type: none"> - f_planid:int - f_plantype:String - f_plantype:goal



9. Package Diagram



10. Deployment Diagram

