

# Documentation

Sport club management application



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# 1. Project Overview:

SportClub is a comprehensive management system designed for sports clubs. The system facilitates seamless interaction between employees and clients, offering tailored functionalities based on user privileges.

## 2. User Requirements:

### User Registration:

- Users must register in the system to gain access.
- Post-registration, users are granted specific privileges based on their roles (client, trainer, dietitian, administrator).

### Group Sessions:

- Group sessions have a schedule with a defined minimum and maximum number of participants, ensuring optimal class sizes.
- Each group class consists of sessions. Each session repeats once a week.
- Users have access to a schedule with group sessions.
- Completed sessions are archived and removed from the system if they concluded more than six months ago.

### Clients:

#### Subscription Requirements:

- Clients must have an active subscription (membership) to access the club's facilities.
- Memberships are categorized into three types: Basic, Standard, and Premium, each granting different levels of access to various zones within the club.
- Clients with a lapsed subscription exceeding six months are automatically removed from the system.

#### Service Selection:

- Clients can choose and register with trainers or dietitians.
- They can also sign up for group sessions.

### Employees:

- Employees can also be clients within the system.
- Employees work in different departments and have contractual obligations.

### Coach:

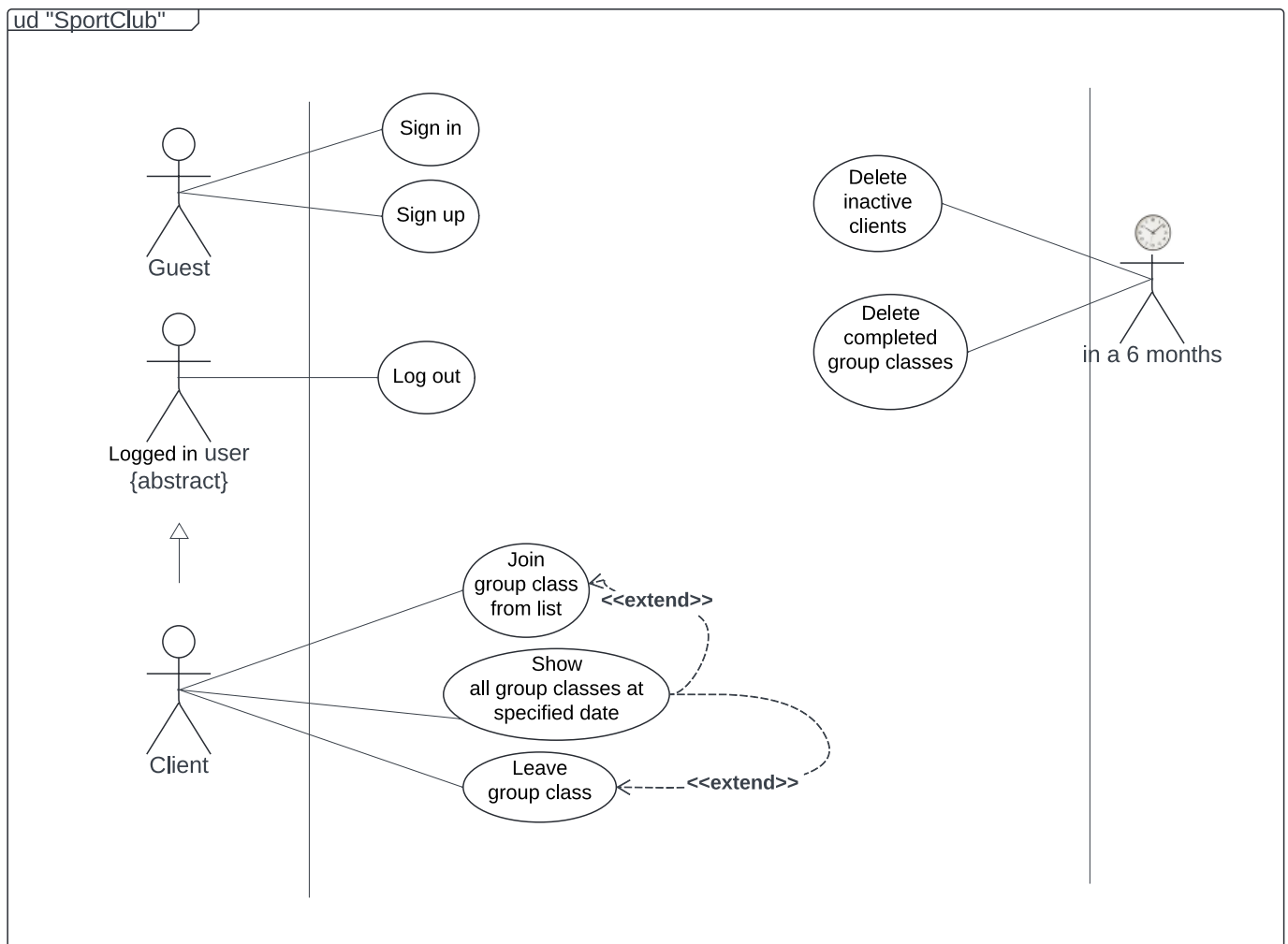
- Must possess a certification from specialized courses.
- Can develop personalized training plans for their clients.

- Have the ability to create and conduct group sessions.

### Dietitians:

- Must hold a medical degree.
- Can prescribe dietary plans to their clients.
- A trainer can also hold the role of a dietitian, provided they meet the qualifications.

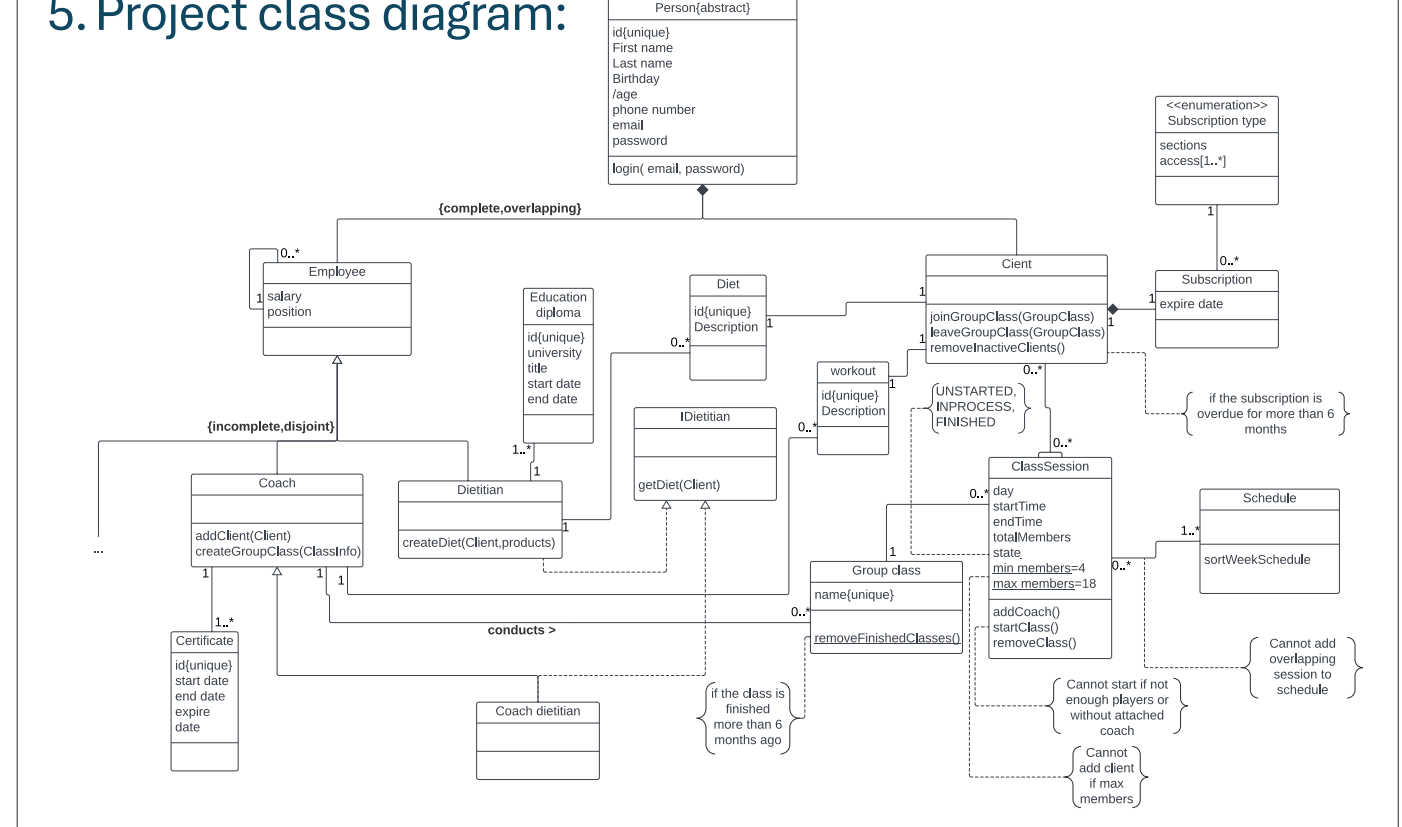
## 3. Use case diagram:



```
cld "SportClub"
```



## 5. Pr



## 6. Scenario for the "Join group" class use case

### Scenario for the "Join group" class use case

Join group class

#### Initial condition:

Client wants to join or leave group class

#### Main Event Flow:

1. The Actor Client starts use case
2. The system asks for the date. The actor Client provides date
3. The system shows list of group classes for the provided date and asks for class selection. The actor Actor selects class.
4. The client has not registered for this lesson yet and group class is not full, the system displays information about the selected class and offers to join the lesson. The actor Client joins class.
5. The system informs actor Client about successful registration. The actor Client succesfully joins the group class.

#### Alternative event flows:

2a. There is no saved classes. The system informs actor Client. The end of use case.

3a. There is no saved classes for provided date. The system informs Client and asks if he wants to enter date again. Actor Client agrees and system goes to point 2.

3b. There is no saved classes for provided date. The system informs Client and asks if he wants to enter date again. Actor Client refuses. The end of use case.

4a. The actor is already in class. The end of use case.

4b. The group class is full. The system informs Client and asks if he wants to enter date again. Actor Client agrees and system goes to point 2.

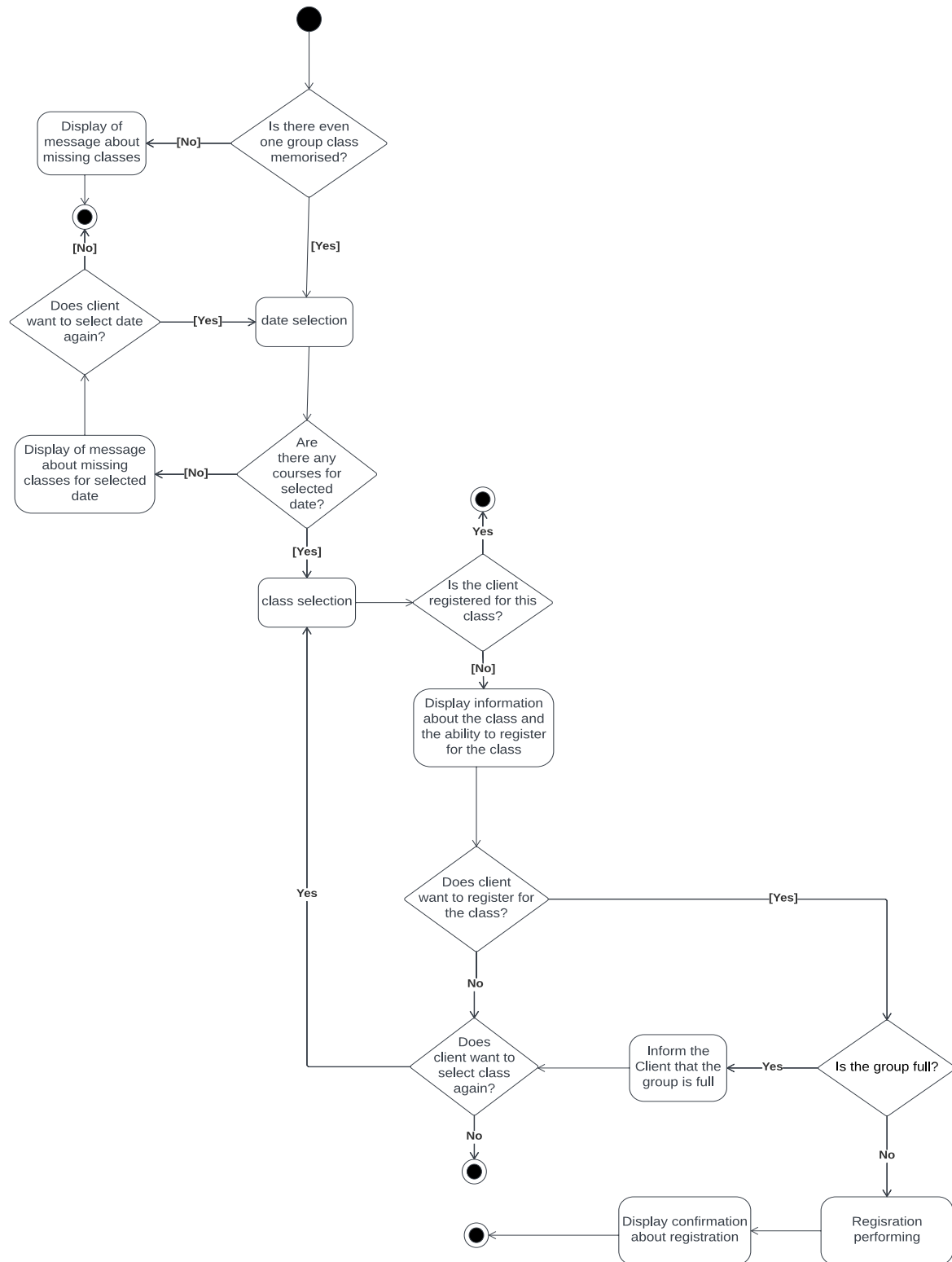
4c. The group class is full. The system informs Client and asks if he wants to enter date again. Actor Client refuses. The end of use case.

#### Final condition:

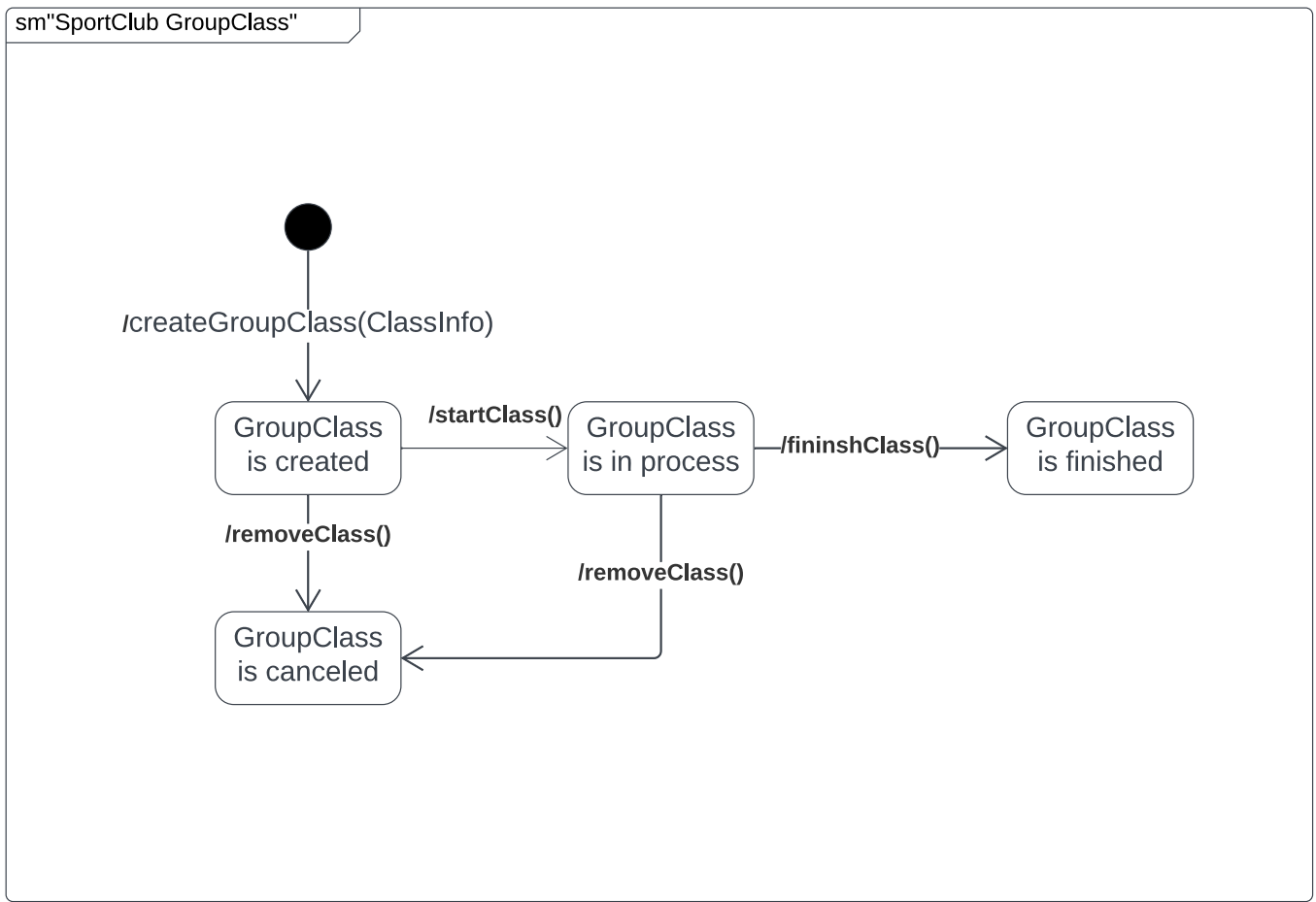
- e1. The actor Client joins the group class.
- e2. The system informs actor Client that there is no saved group classes.
- e3. The system informs actor Client that the group class is full.

## 7. Activity diagram:

ad "Join/cancel group class"



## 8. State diagram for the ClassSession





## 9. User interface:

### Login page

Welcome to SportClub App



Sign in

Email

Password

sign in

Created by s24773

## Schedule page

Isabella Wilson

< 06.2024 >

Today

Sign out

Mo	Tu	We	Th	Fr	Sa	Su
					1 GroupClass5	2 GroupClass6
3 GroupClass7	4 GroupClass1 GroupClass8	5 GroupClass2 GroupClass9	6 GroupClass3 GroupClass10	7 GroupClass4	8 GroupClass5	9 GroupClass6
10 GroupClass7	11 GroupClass1 GroupClass8	12 GroupClass2 GroupClass9	13 GroupClass3 GroupClass10	14 GroupClass4	15 GroupClass5	16 GroupClass6
17 GroupClass7	18 GroupClass1 GroupClass8	19 GroupClass2 GroupClass9	20 GroupClass3 GroupClass10	21 GroupClass4	22 GroupClass5	23 GroupClass6
24 GroupClass7	25 GroupClass1 GroupClass8	26 GroupClass2 GroupClass9	27 GroupClass3 GroupClass10	28 GroupClass4	29 GroupClass5	30 GroupClass6

Day schedule table

←

Classes for: 2024-06-15

Classes	Members	Time
GroupClass5	0/3	15:05 - 16:00

GroupClass5

Description:

Time: 15:05 - 16:00

Coach: CoachFirstName5

Members: 0/3

Join class

## 10. Discussion of design decisions and implications of the analysis dynamic analysis

### 1. Discussion of design decisions

Overlapping in inheritance is person, client and employee:

This was due to the fact that if the same person works in our hall and at the same time comes as a client, he remains the same person. Therefore, a person has the opportunity to connect to it the status of both a client and an employee. And since this is not possible in the Java programming language, I had to disable the ability to create instances of the person class in public form and do composition instead of inheritance

Disjoint inheritance between workers.

This connection was made on the principle of a clear division of responsibilities.

Relationship between GroupClass, ClassSession, Schedule.

In this case, we have a schedule in which we see sessions of different group classes. Since it is inconvenient to separately create multiple sessions of the same group activity, they are all stored in the GroupClass class. By selecting a session in the schedule and choosing to connect to it, the client will automatically be connected to all sessions of that class at the same time on the same day of the week.

Multiple inheritance in the CoachDietitian class from the Coach and Dietitian classes.

Since multiple inheritance is not possible in the Java or C# programming languages, I had to create an IDietitian interface that stores the methods inherent in a Dietitian.

### 2. Implications of the analysis dynamic analysis

After dynamic analysis, the ClassSession class appeared. It was recognized that it was impossible to store regular classes in a timetable in a quick and convenient way, so a class was developed to streamline the process