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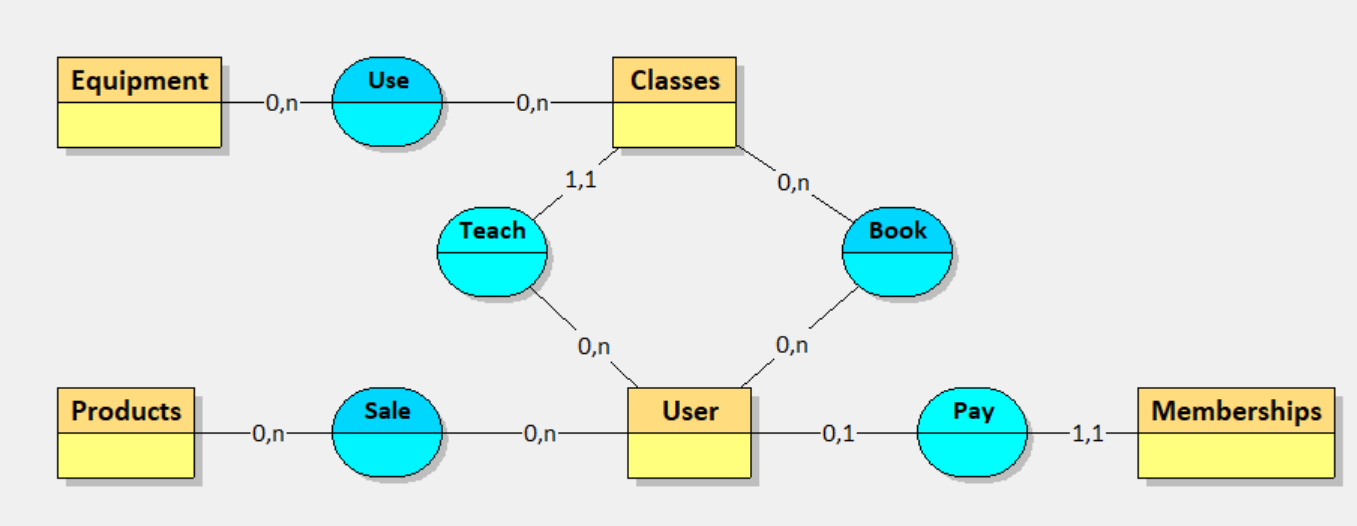
Gym Database Project

Introduction

This document presents the design of a Gym Management Database System. The system models the main entities of a gym, like users, equipment, products, classes and bookings. It also shows the relationships between these entities through an ER diagram and a logical data model.

Entity-Relationship Diagram

The following diagram illustrates the Entity-Relationship (ER) model for the gym database. It shows the entities, their attributes, and the relationships among them.



Logical Data Model

The logical data model represents the database structure in terms of tables, columns, and relationships. Below is the logical model for the gym database:

Equipment = (**Id_Equipment** *COUNTER*, Name *VARCHAR(50)*, Type *VARCHAR(50)*, PurchaseDate *DATE*, MaintenanceDate *DATE*, Price *VARCHAR(50)*, Brand *VARCHAR(50)*, Condition_ *VARCHAR(50)*);
User_ = (**Id_User** *COUNTER*, Name *VARCHAR(50)*, Email *VARCHAR(50)*, Phone *VARCHAR(50)*, DoB *DATE*, JoinDate *DATE*, Role *VARCHAR(50)*, Speciality *VARCHAR(50)*, Salary *VARCHAR(50)*);
Products = (**Id_Products** *COUNTER*, ProductName *VARCHAR(50)*, Category *VARCHAR(50)*, Description *TEXT*, Price *CURRENCY*, StockQuantity *VARCHAR(50)*, DateAdded *VARCHAR(50)*, Brand *VARCHAR(50)*);
Sales = (***#Id_Products, #Id_User,* Id_Sales** *COUNTER*, Quantity *VARCHAR(50)*, TotalPrice *CURRENCY*, PaymentMethod *VARCHAR(50)*, SaleDate *DATE*, BillingAddress *TEXT*);
Classes = (**Id_Classes** *COUNTER*, ClassName *VARCHAR(50)*, Schedule *DATETIME*, Capacity *INT*, DifficultyLevel *VARCHAR(50)*, Room *VARCHAR(50)*, *#Id_User*);
Memberships = (**Id_Memberships** *COUNTER*, StartDate *DATE*, EndDate *DATE*, Price *CURRENCY*, MembershipType *VARCHAR(50)*, Status *VARCHAR(50)*, PaymentMethod *VARCHAR(50)*, ***#Id_User***);
Use = (***#Id_Classes, #Id_Equipment***);
Book = (***#Id_Classes, #Id_User***, Date_ *DATETIME*);

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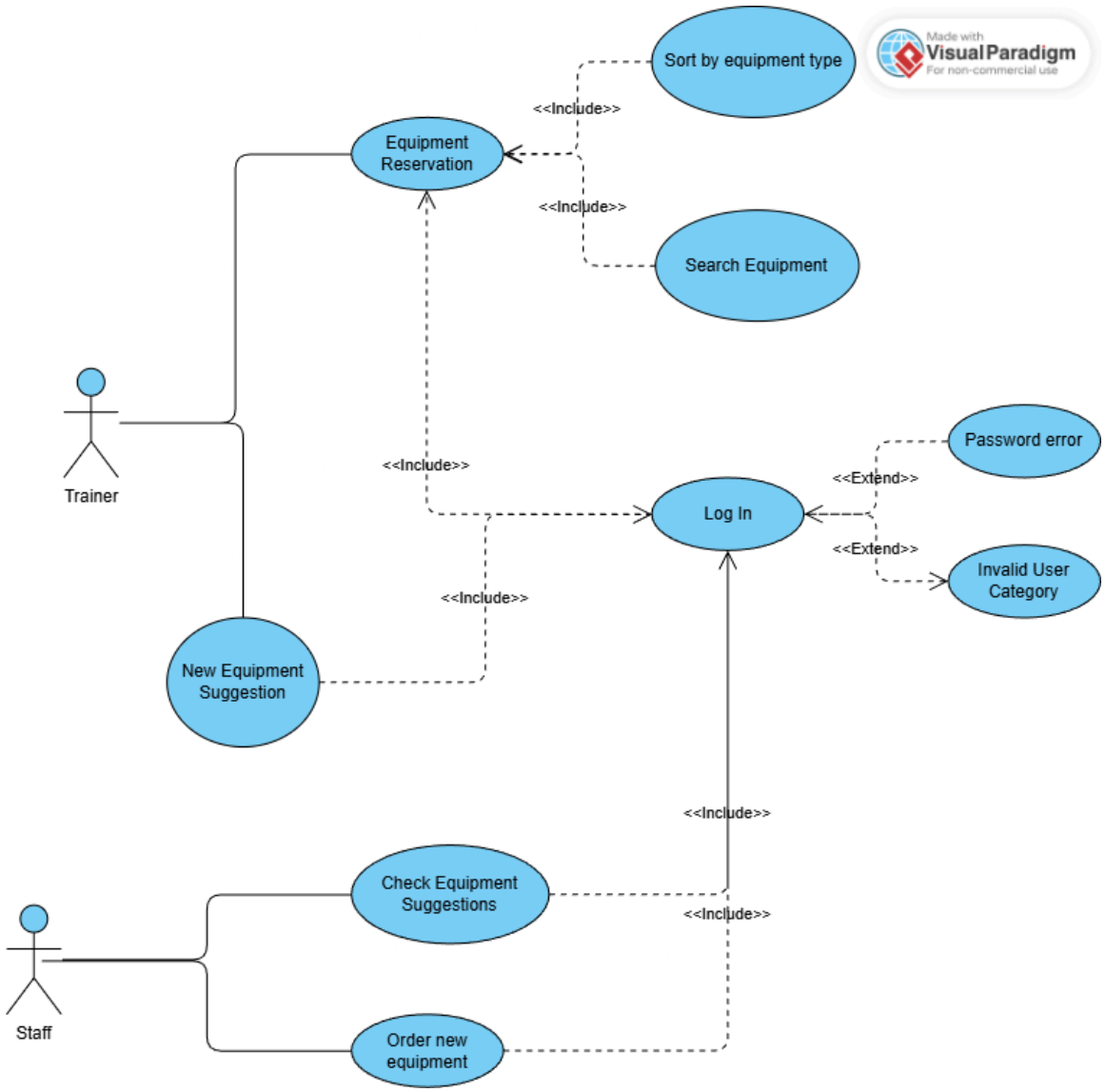
Use Case Diagram: Equipment Management (Ilies)



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Use case diagram : AI COACH/TRAINER (Valentin)

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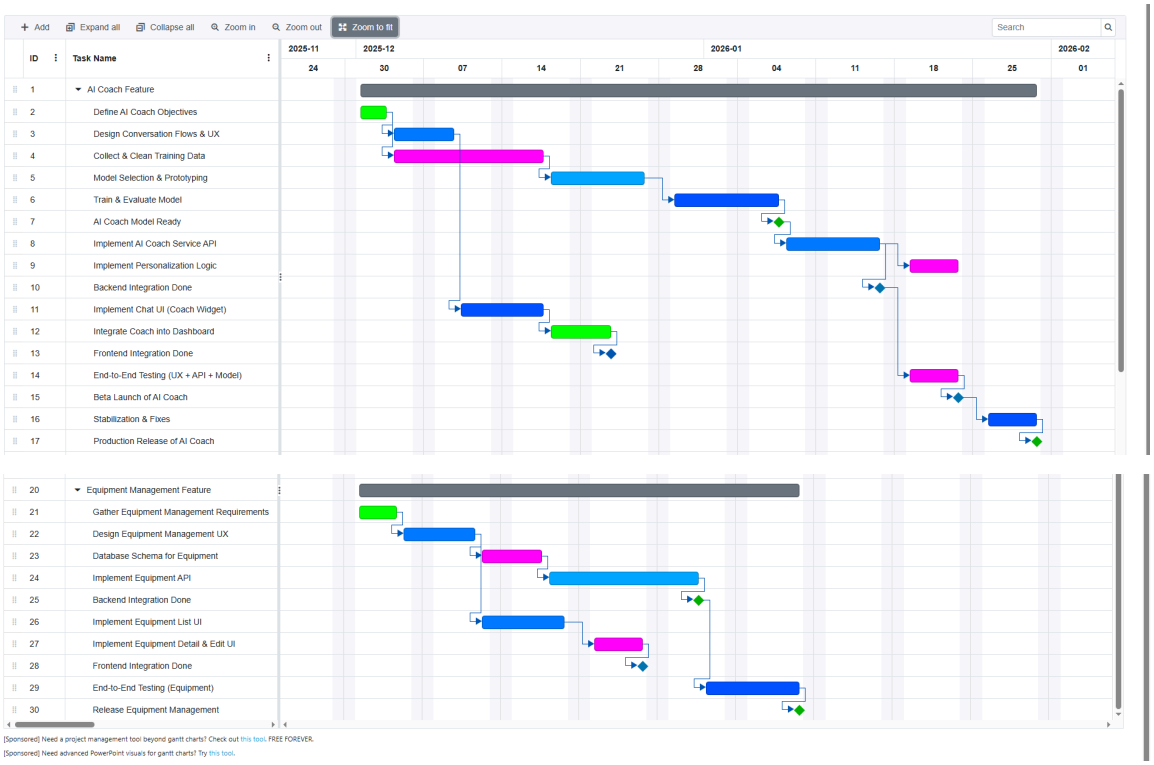
Gantt diagram



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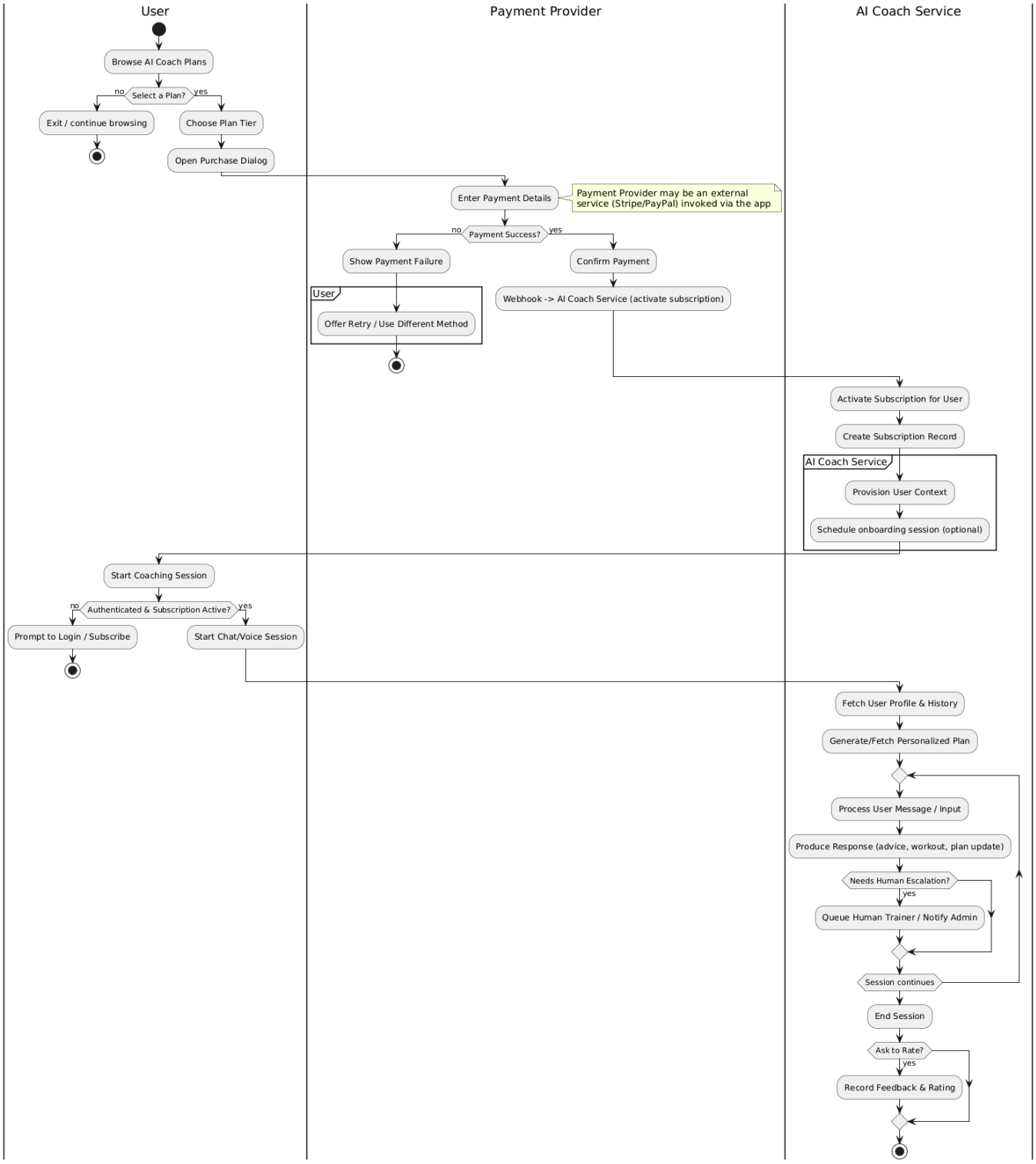
Activity diagram : Ai coach (Valentin)



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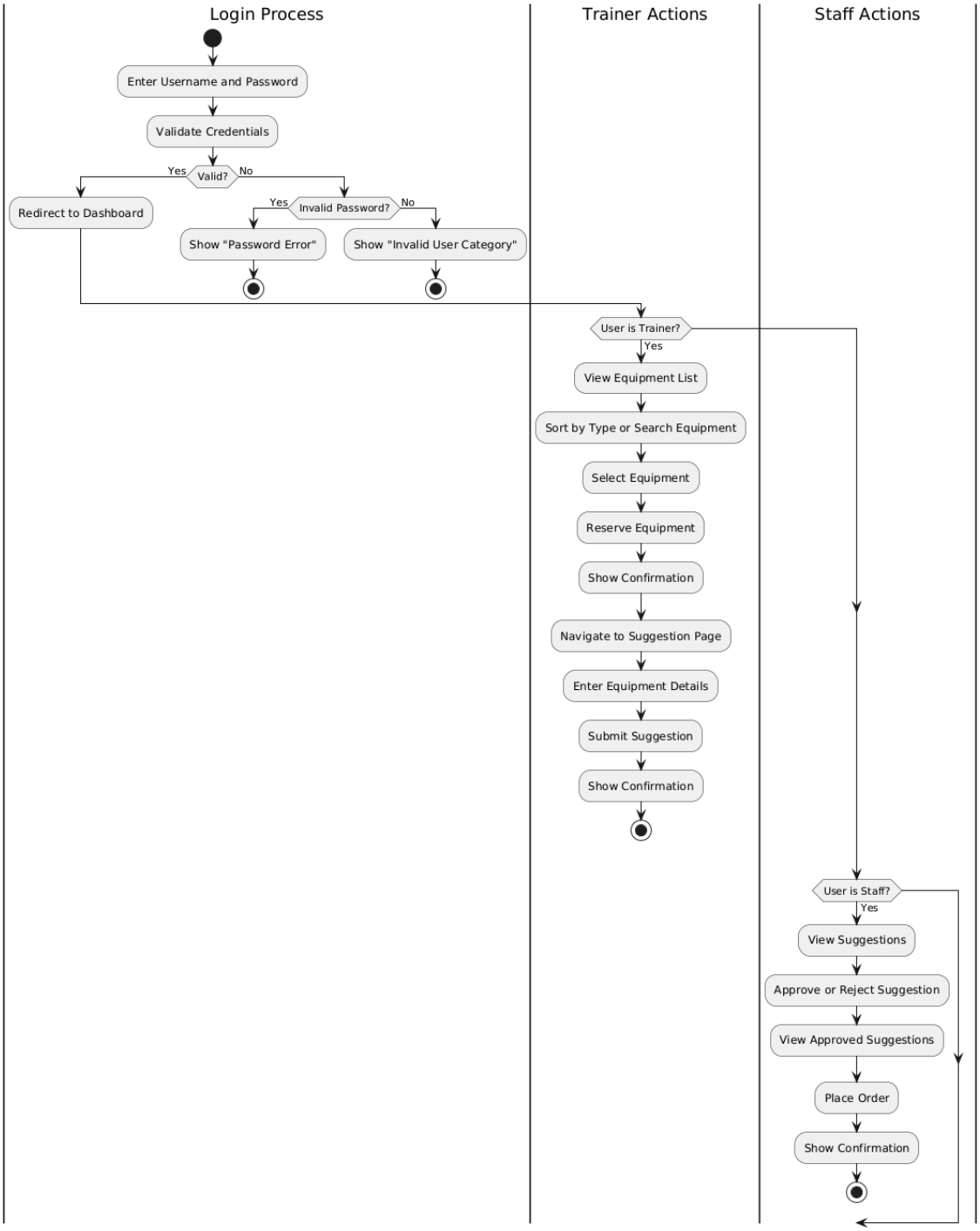
Activity diagram : Equipment Management (Ilies)



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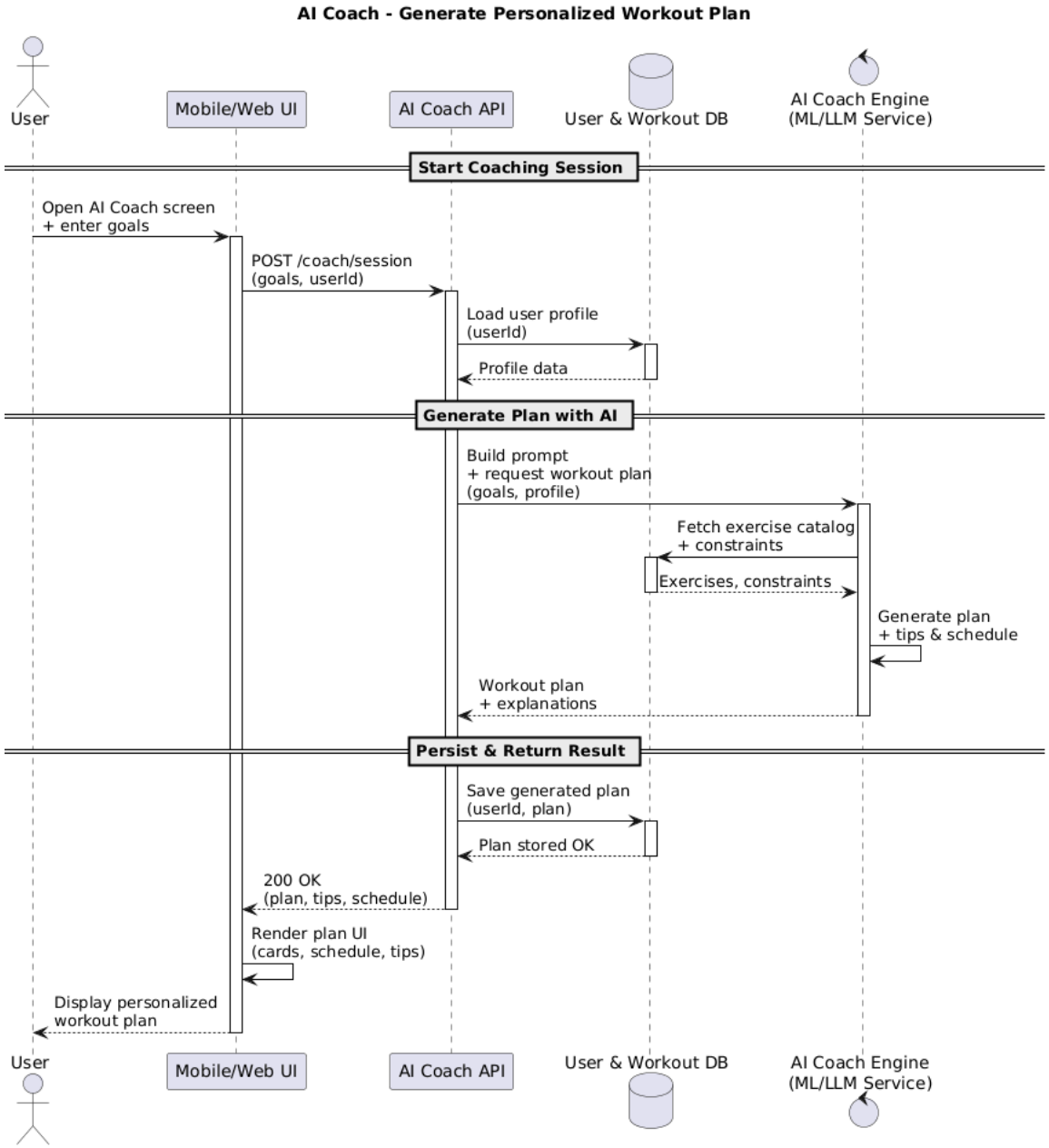
Sequence diagram : Ai coach (Valentin)



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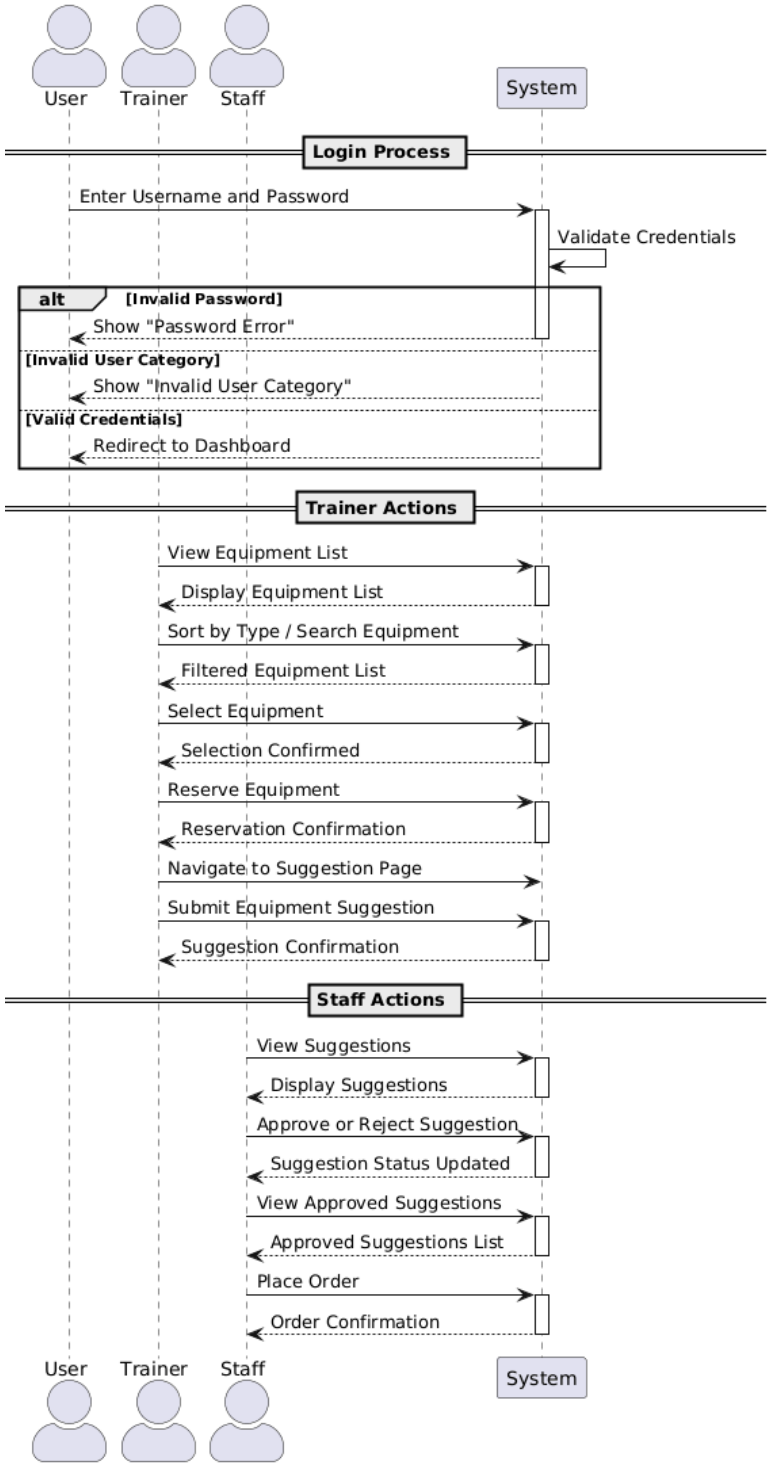
Sequence diagram : Equipment Management (Ilies)



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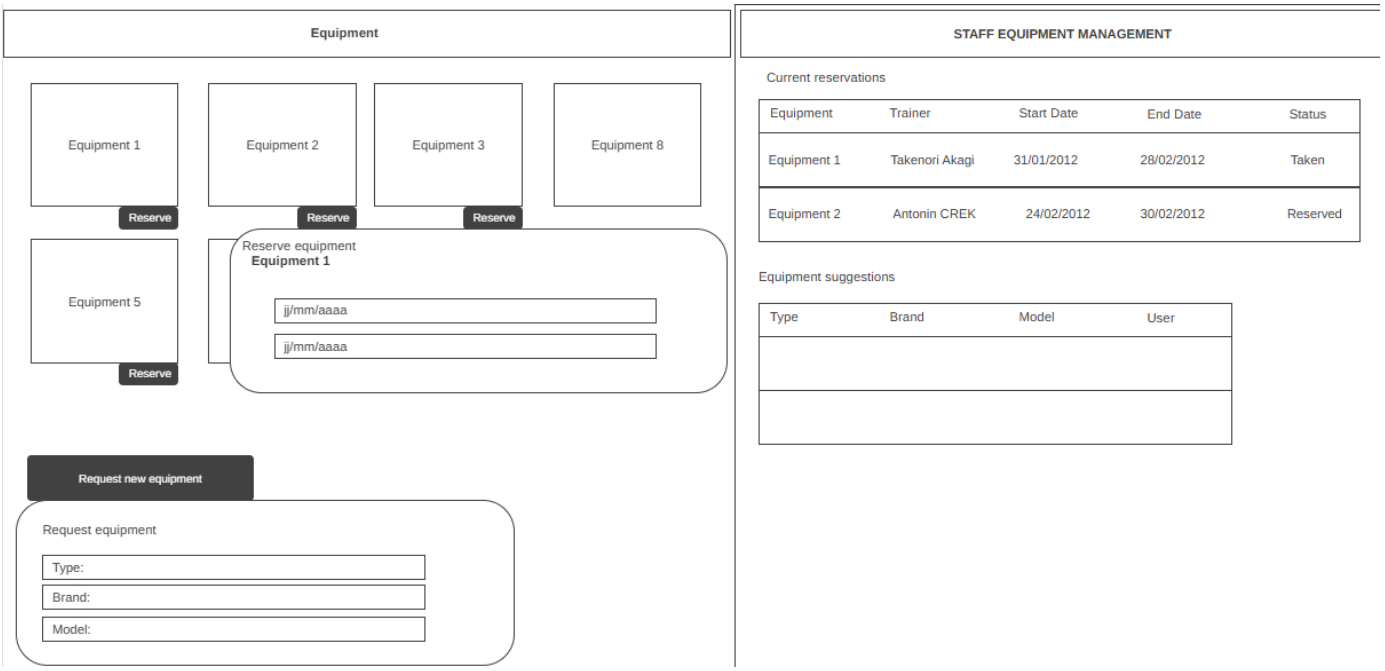
Wireframe : Ai coach (Valentin)

Wireframe : Equipment Management (Ilies)



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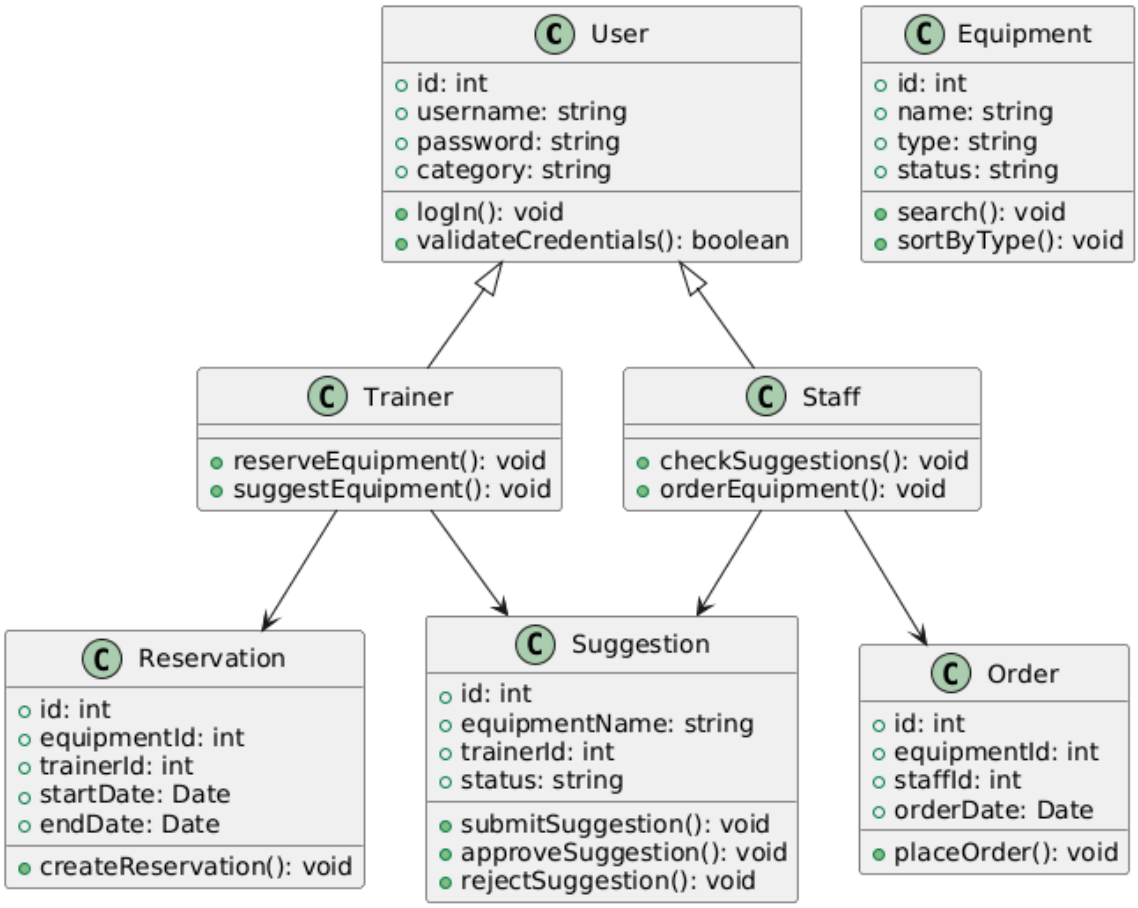
Class Diagram: Equipment Management (Ilies)



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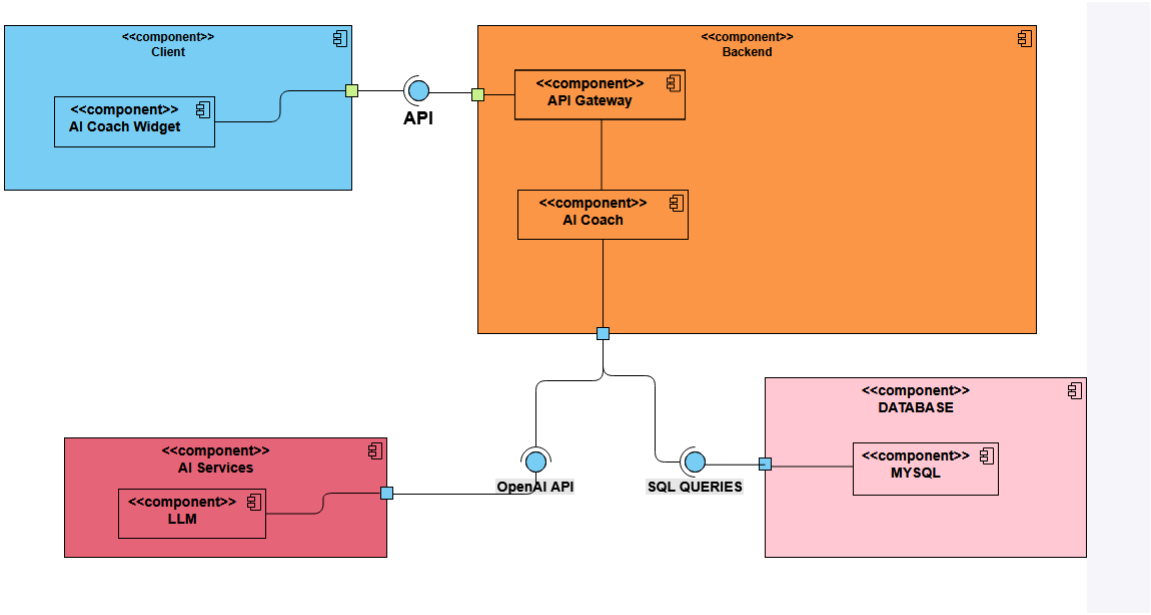
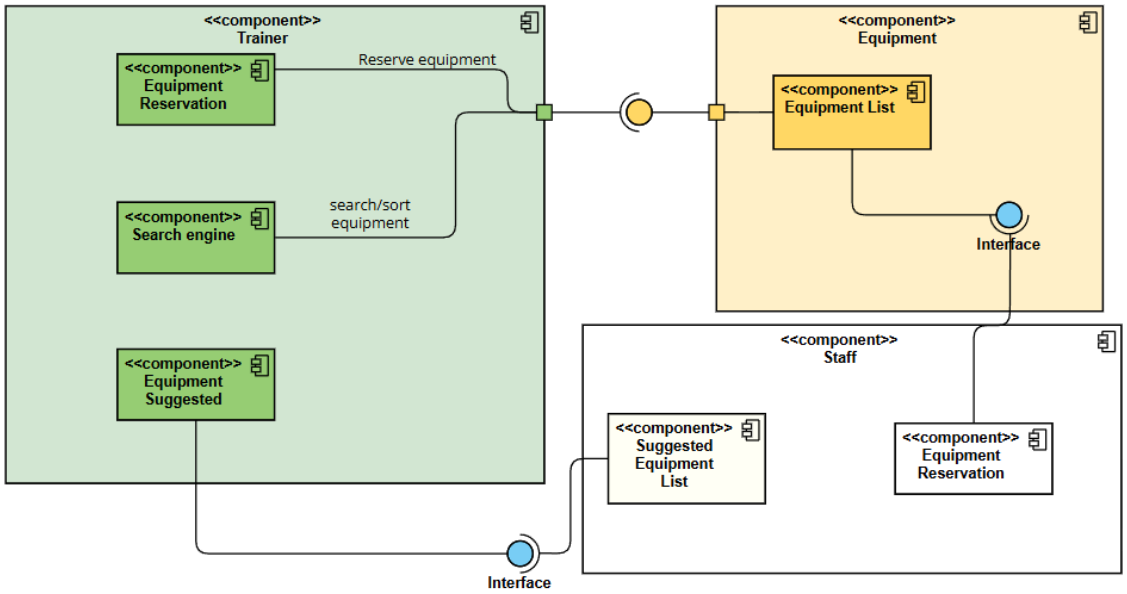
Component Diagram: AI Coach (Valentin)



Component Diagram: Equipment Management (Ilies)



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Conclusion

This database model provides a foundation for implementing a functional gym management system. It ensures that all essential aspects such as memberships, class schedules, trainer assignments, equipment tracking, and member bookings are properly represented.