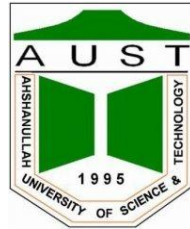


# Ahsanullah University of Science & Technology

## Department of Computer Science and Engineering



### Design Diagram on “Power Up Gym”

**Course Number & Name:** CSE 3224 - Information & System Design Lab

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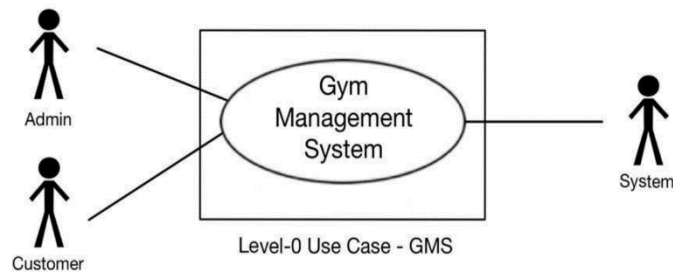
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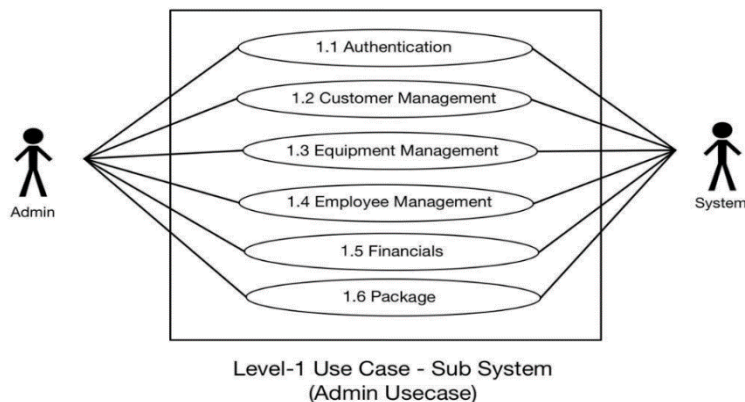
## Use Case Diagram

### Level 0 Use-case – GMS:



The system involves two primary actors: the Admin/Owner and the Customer/User. Both actors directly interact with the system to perform various actions. The admin is responsible for managing and controlling the system, while the user utilizes the system to access its features and functionalities.

### Level 1 use case – Sub System (Admin Use-case):

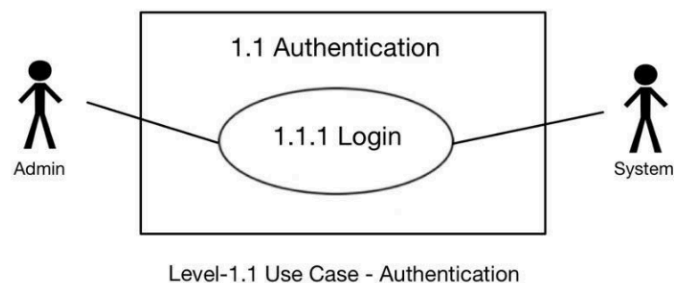


The Power Up Gym Management System consists of the following subsystems for admin/owner:

1. Authentication
2. Customer Management
3. Equipment Management
4. Employee Management
5. Financial Management
6. Package Management

These subsystems handle various aspects of the system's functionality, such as user authentication, customer information management, equipment and inventory management, employee management, financial operations, and package management.

### Level 1.1 Use-case – Authentication:



The admin is required to input their username and password for login. If the entered credentials match the records, the login is considered successful, and a message confirming "Login successful" is displayed and access to the system is granted.

In the case where either the username, password, or both are incorrect, the system generates an error message, allowing the user to make another attempt to log into the system.

#### **Action Reply:**

Admin/Owner:

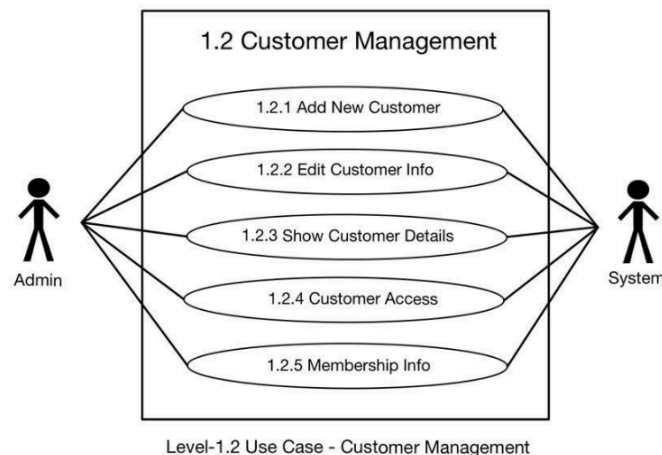
**A1:** Admin enters his username and password.

**R1:** The system verifies the entered credentials. If the username and password match, the login is successful, and the admin is granted administrative access to the system.

**A2:** Admin provides incorrect login information.

**R2:** The system displays an error message and allows the admin to retry logging in.

### Level 1.2 Use-case – Customer Management:



The admin can add new customer to the system, edit/update any customer information, retrieve any customer details and their access to the gym and view the membership info.

#### **Action Reply:**

Admin/Owner:

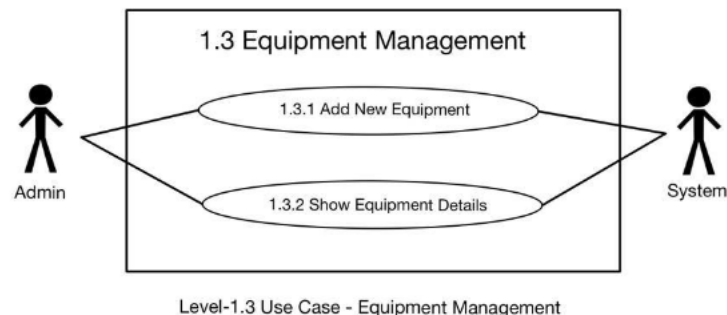
**A1:** Admin selects add new customer or edit customer information options.

**R1:** The system will take the input data from the admin and will save the data in database.

**A2:** Admin selects add show customer details or customer access or membership info options.

**R2:** The system retrieves the data from the database and shows admin.

### Level 1.3 Use-case – Equipment Management:



The admin can add new equipment to the gym and log the entries in the database. Afterwards he can view the relevant details such as buying date, price, maintenance date, maintenance status etc.

#### **Action Reply:**

Admin/Owner:

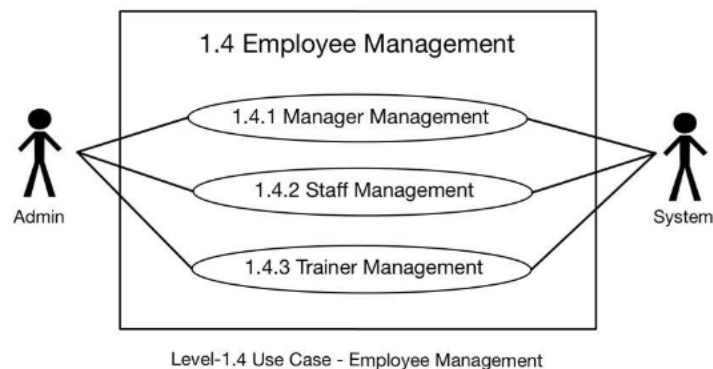
**A1:** Admin selects add new equipment option.

**R1:** The system will take the input data from the admin and will save the data in database.

**A2:** Admin selects show equipment details.

**R2:** The system retrieves necessary data from the database and shows admin.

### Level 1.4 Use-case – Employee Management:



The system is designed to handle three types of employees: manager, staffs & trainers.

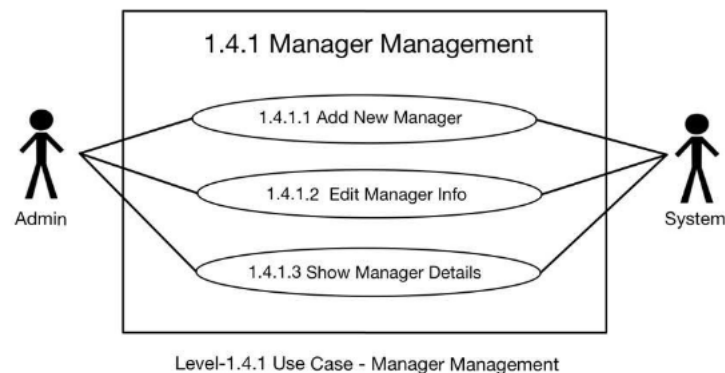
#### **Action Reply:**

Admin/Owner:

**A1:** Admin selects manager management or staff management or trainer managements.

**R1:** The system will take the admin to new windows for respective operations.

### Level 1.4.1 Use-case – Manager Management:



The admin can add new manager for the gym, can edit their information and view them according to their ID no.

**Action Reply:**

Admin/Owner:

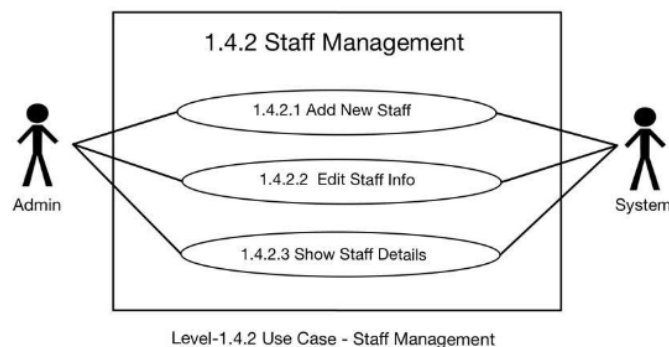
**A1:** Admin selects add new manager or edit manager information option.

**R1:** The system will take the input data from the admin and will save the data in database.

**A2:** Admin selects show manager details.

**R2:** The system retrieves necessary data from the database and shows admin accordingly.

**Level 1.4.2 Use-case – Staff Management:**



The admin can add new staff for the gym, can edit their information and view them according to their shifts.

**Action Reply:**

Admin/Owner:

**A1:** Admin selects add new staff or edit staff information option.

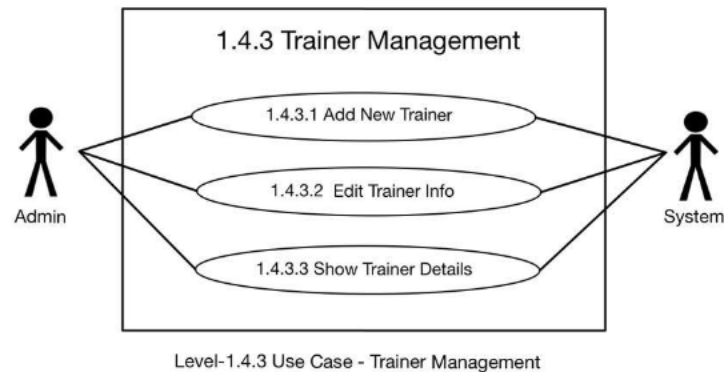
**R1:** The system will take the input data from the admin and will save the data in database.

**A2:** Admin selects show staff details.



**R2:** The system retrieves relevant data from the database and shows admin accordingly.

### Level 1.4.3 Use-case – Trainer Management:



The admin can hire new trainers for the gym, can edit their information and view them according to their ratings.

#### **Action Reply:**

Admin/Owner:

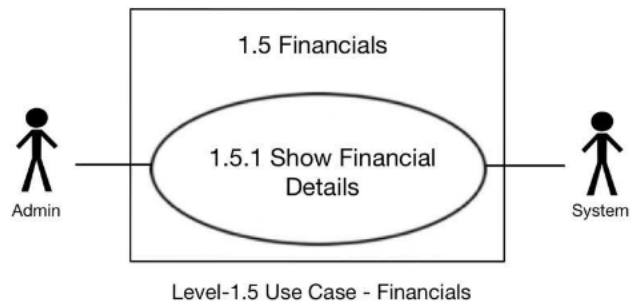
**A1:** Admin selects add new trainer or edit trainer information option.

**R1:** The system will take the input data from the admin and will save the data in database.

**A2:** Admin selects show trainer details.

**R2:** The system retrieves necessary data from the database and shows admin accordingly.

### Level 1.5 Use-case – Financial Management:



The system keeps track of all the expenses occurs in a monthly time period and all the revenue generated from the customers. It processes the data and can show the net income, expense, profit/loss, valuable customers, most valued package etc. information according to admin's need.

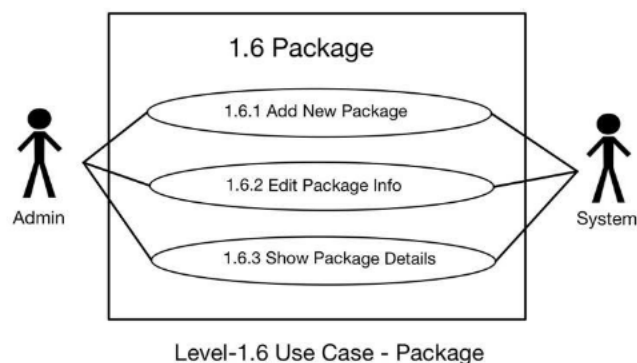
#### **Action Reply:**

Admin/Owner:

**A1:** Admin selects show financial details option.

**R1:** The system takes time period input from the admin, retrieves the data from database, processes the data and shows the data.

### Level 1.6 Use-case – Package Management:



The gym management system can offer customers a range of diverse packages to cater to their needs. These packages are designed to provide flexible options based on individual preferences and fitness goals. Packages can be created and modified as well as the acceptance/rating of the packages can be viewed by admin.

**Action Reply:**

Admin/Owner:

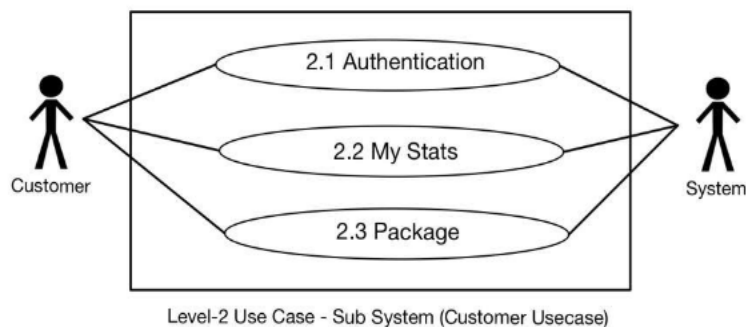
**A1:** Admin selects add new package or edit package information option.

**R1:** The system will take the input data from the admin and will save the data in database.

**A2:** Admin selects show package details.

**R2:** The system retrieves necessary data from the database and shows admin accordingly.

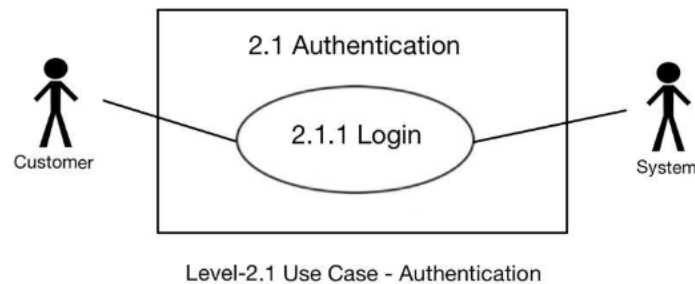
**Level 2 use case – Sub System (Customer Use-case):**



The Power Up Gym Management System consists of the following subsystems for customer/user:

1. Authentication.
2. My Stats.
3. Package.

## Level 2.1 Use-case – Authentication:



The user is required to input their username and password to log into the system. Upon entering the credentials, if they match the records, the login is considered successful. The system then displays a message confirming "Login successful" and grants the user access to the system.

However, if the entered username, password, or both are incorrect, the system generates an error message. This allows the user to make another attempt to log into the system by providing the correct login information.

### **Action Reply:**

User/Customer:

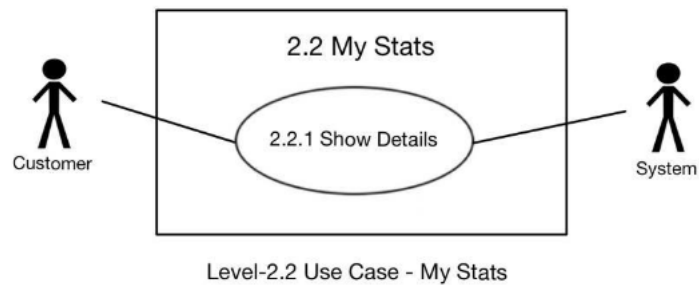
**A1:** User enters their username and password.

**R1:** The system validates the entered credentials. If the username and password are a match, the login is successful, and the user gains access to the system.

**A2:** User provides incorrect login information.

**R2:** The system presents an error message, giving the user the opportunity to retry logging in with the correct credentials.

### Level 2.2 Use-case – My Stats:



The users can conveniently access and view their personalized gym statistics. This includes essential information such as their active gym package, assigned trainers, available equipment, dedicated manager, and their current height and weight.

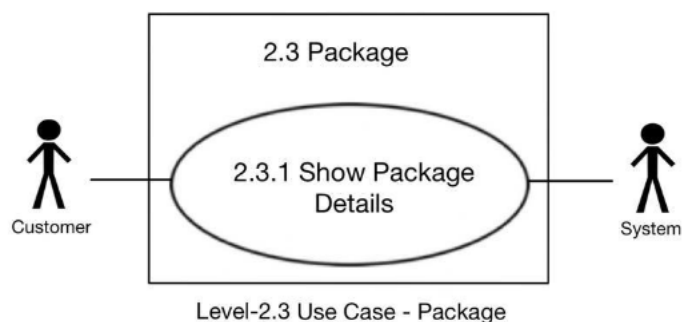
#### **Action Reply:**

User/Customer:

**A1:** User selects show details option.

**R1:** The system retrieves data from the database and conveniently shows the user.

### Level 2.3 Use-case – Package:



The gym management system can offer customers a range of diverse packages and all of the available packages can be viewed by customer to choose from.

**Action Reply:**

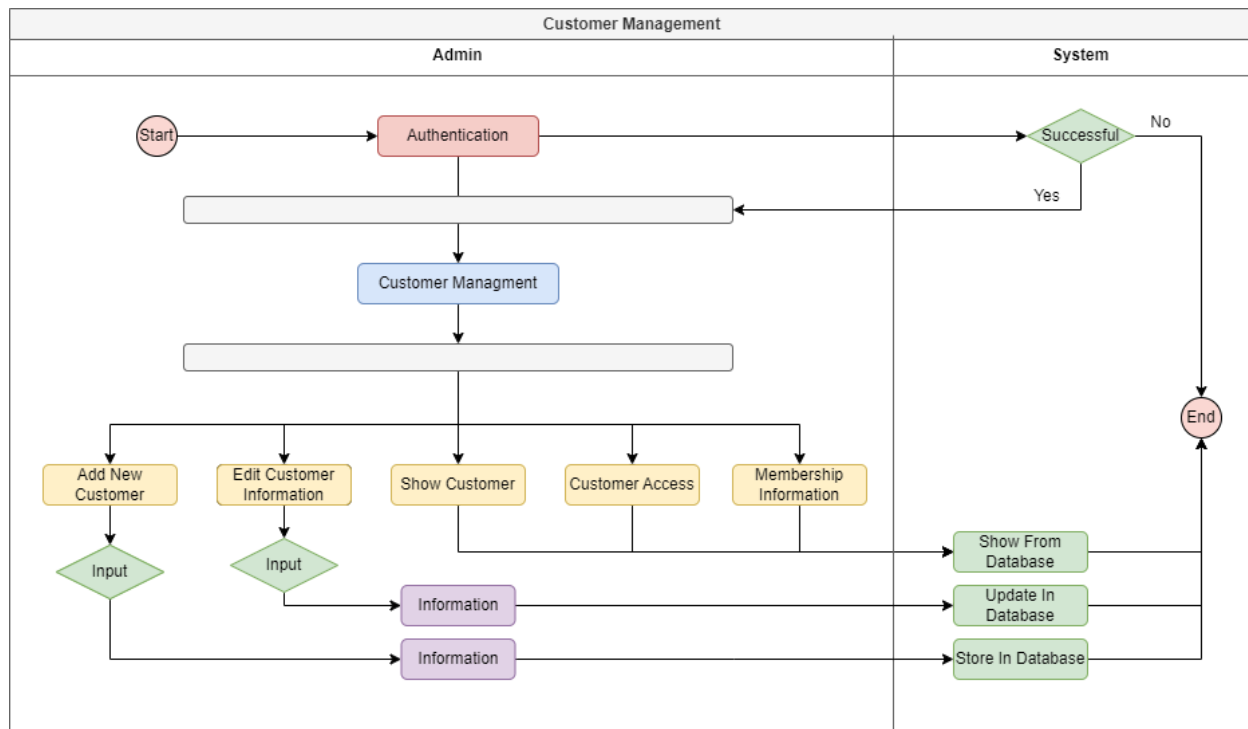
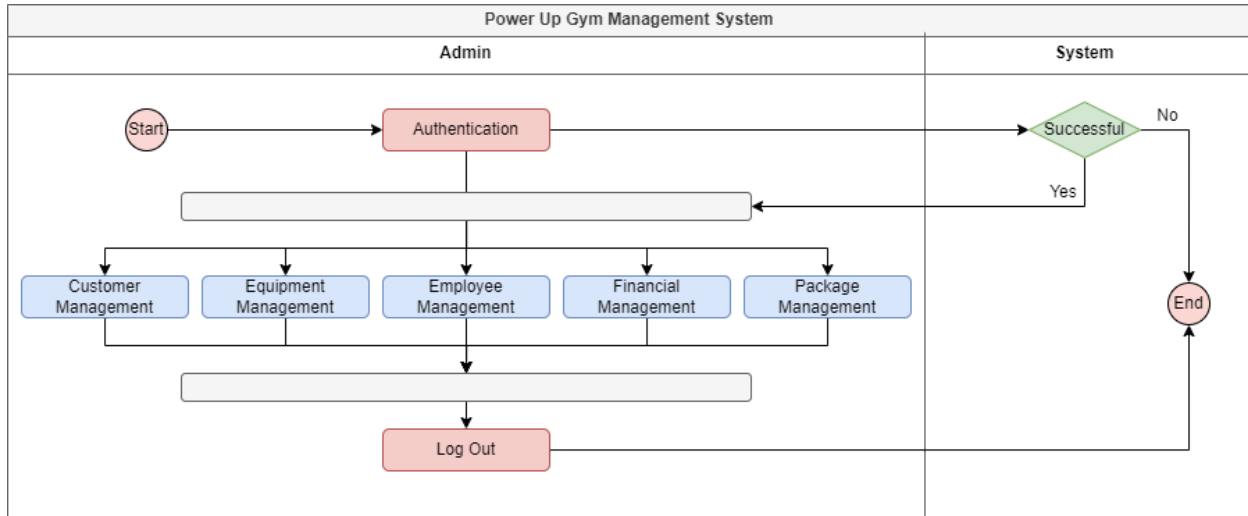
User/Customer:

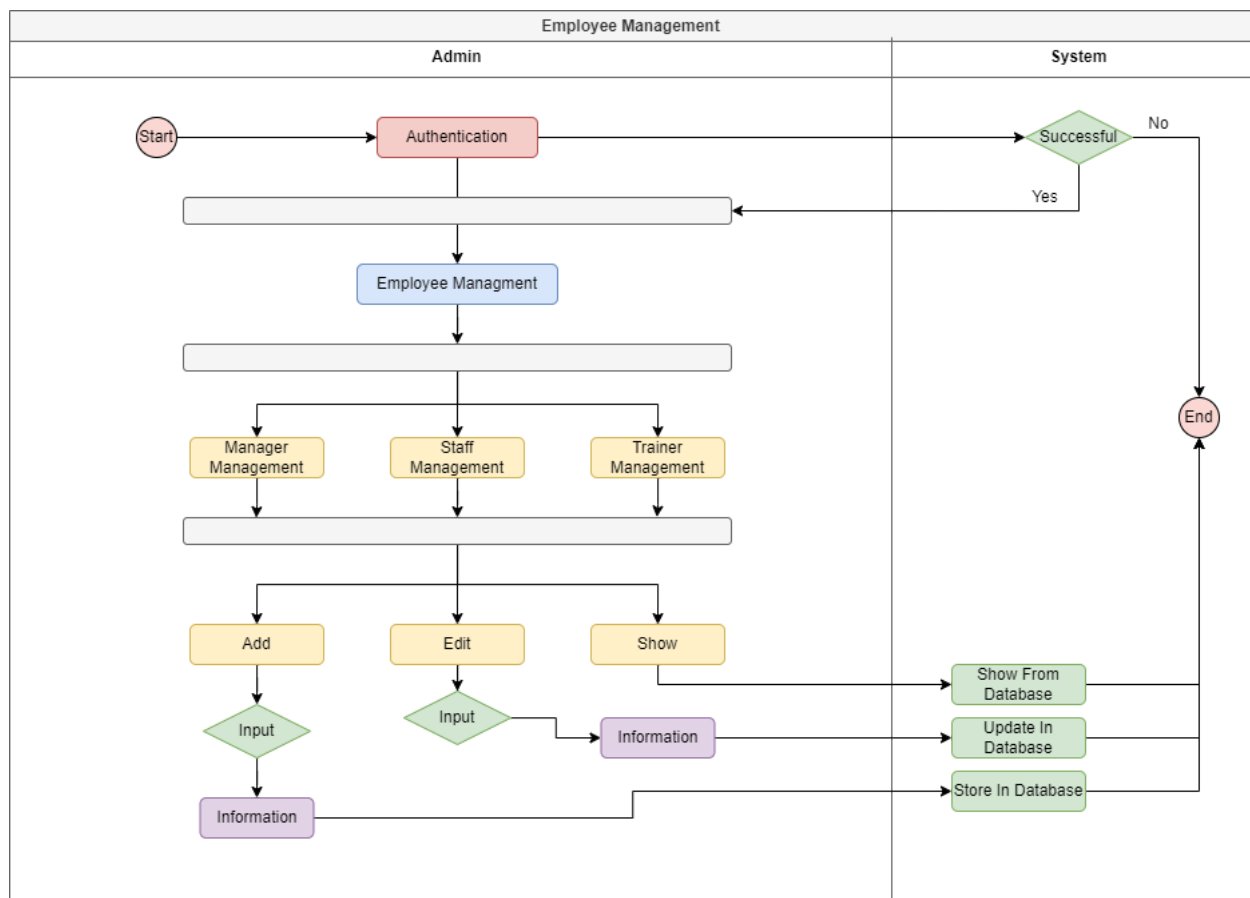
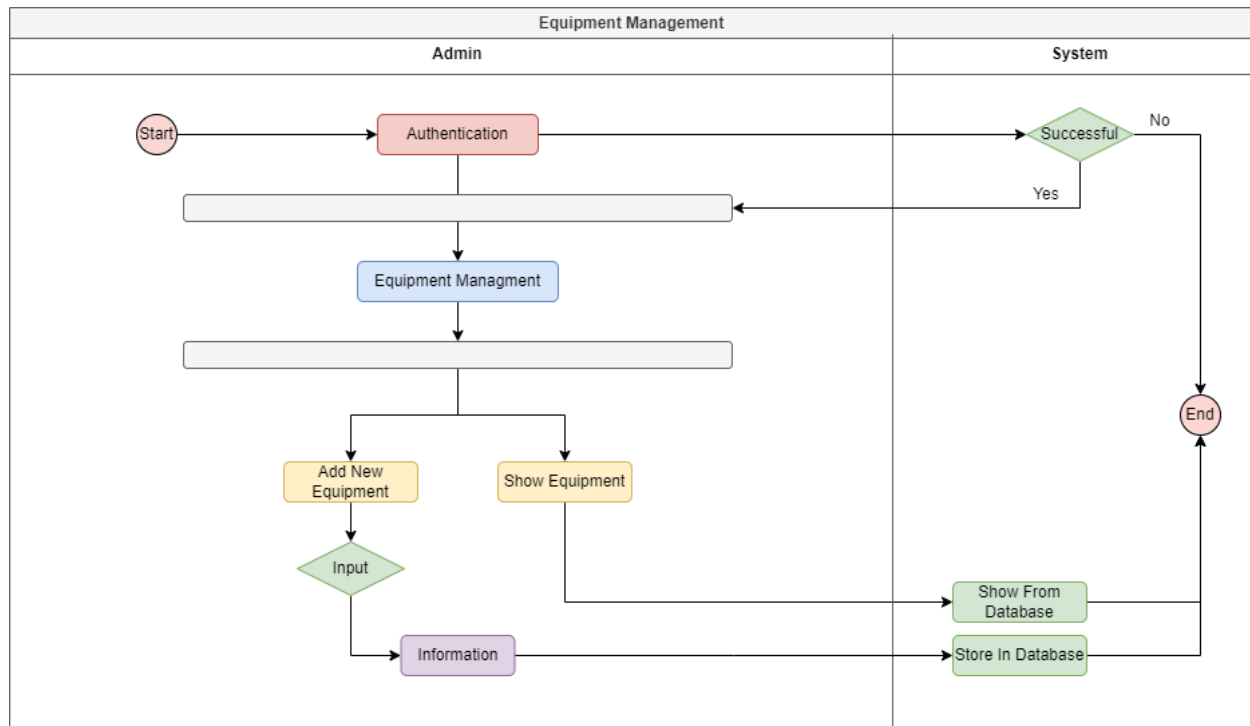
**A1:** User selects show package details.

**R1:** The system retrieves data from database and shows the details of available packages.

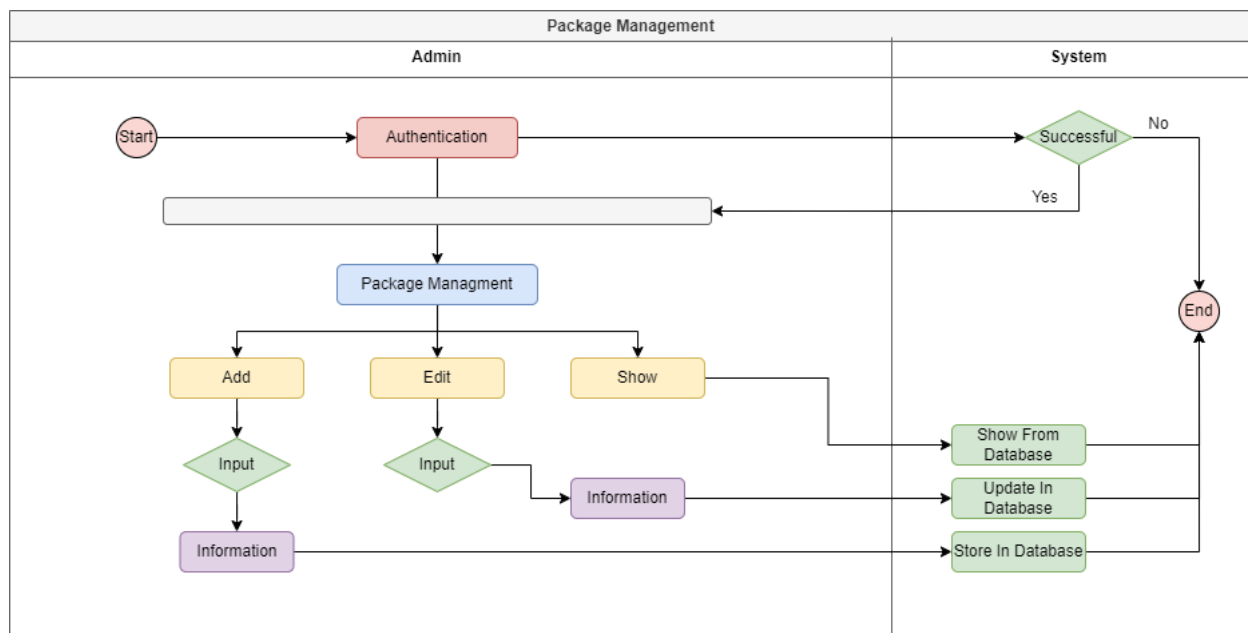
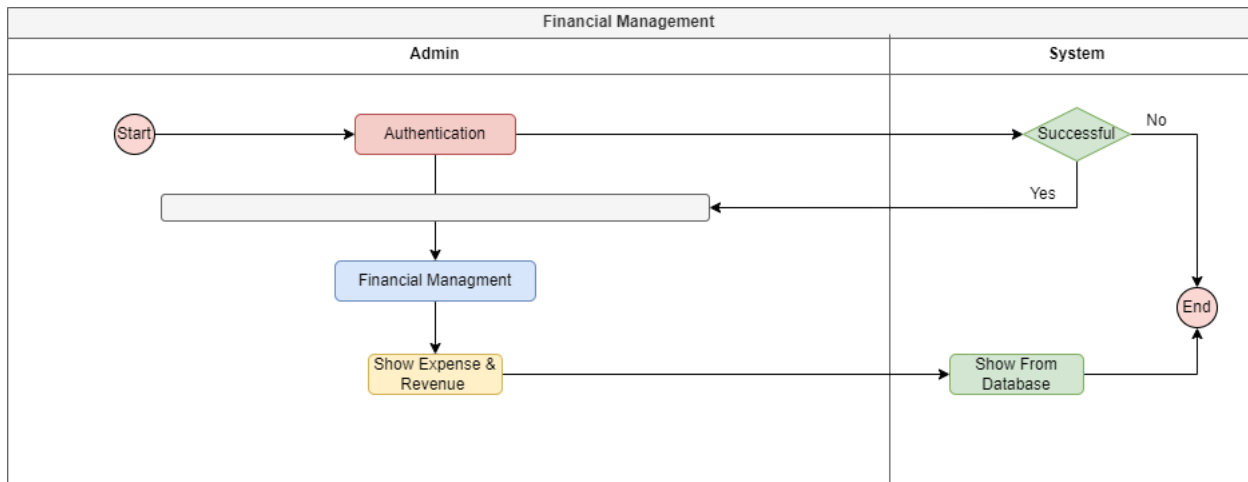
# Swimlane Diagram

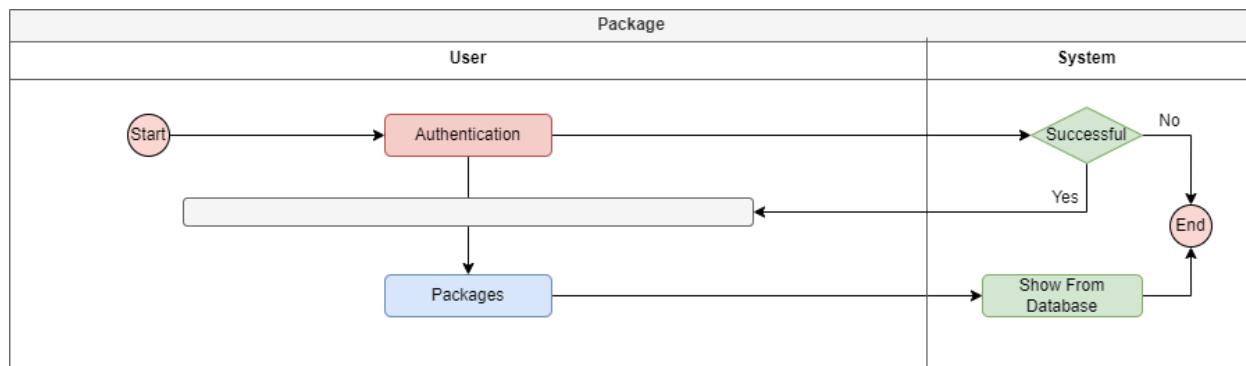
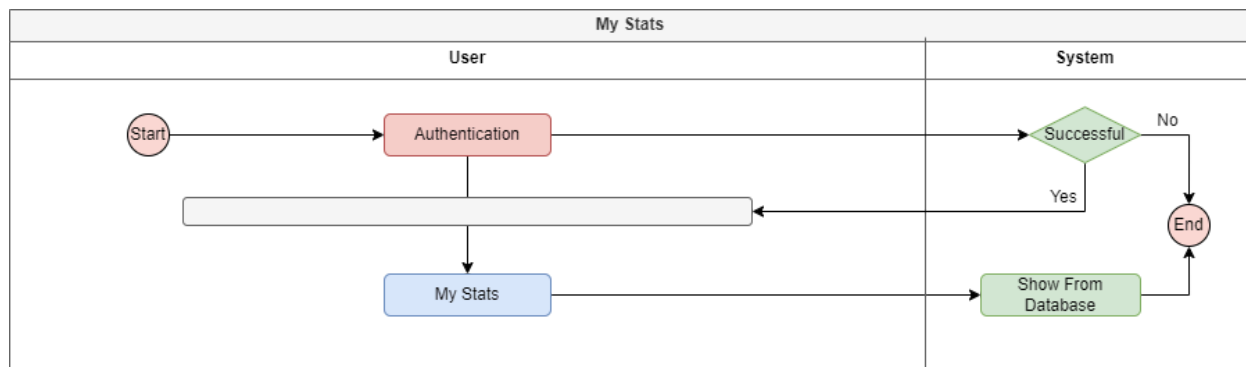
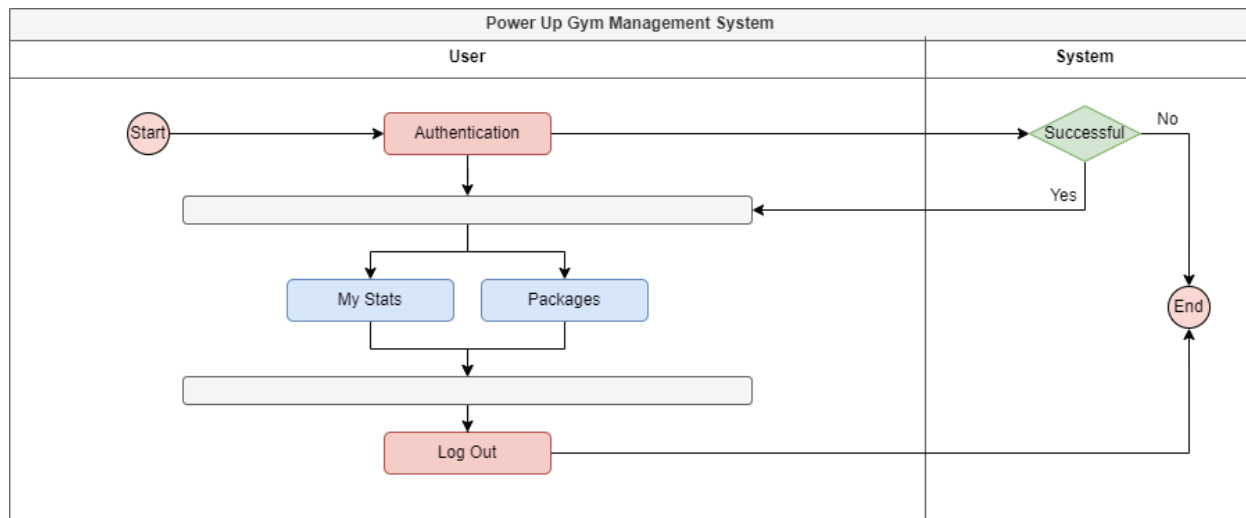
## Admin Use-case:



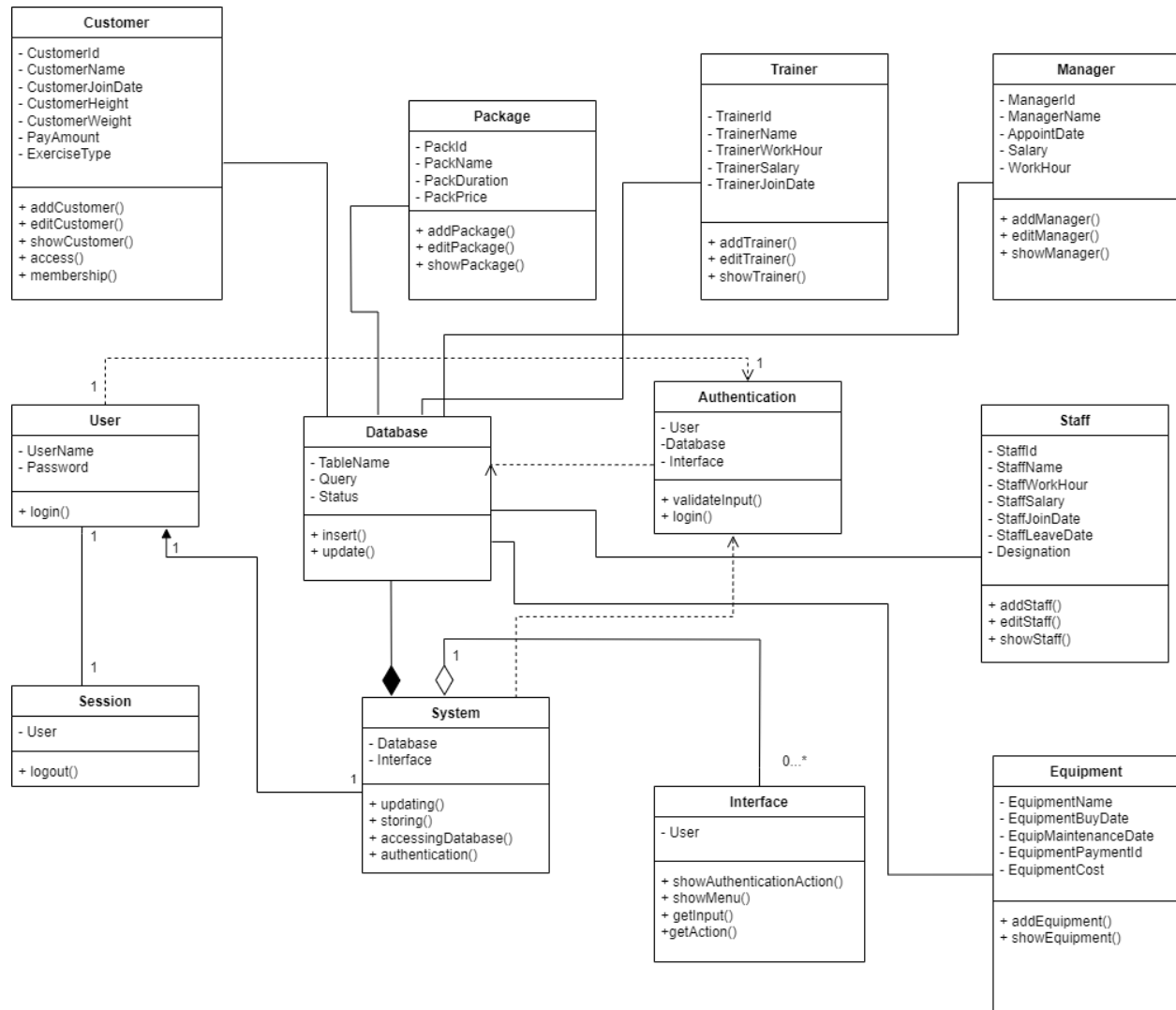






Customer Use-case:

# Class Diagram



**Fig: UML Class Diagram**