**STRUCTURAL MODELS**

* **CLASS DIAGRAM**

|  |
| --- |
| **BRANCH CLASS** |
| +branch\_id: int  +branch\_type: string  +branch\_name: string  +branch\_city: string  +branch\_address: string |
| +addBranch ()  +editBranch()  +deleteBranch()  +searchBranch() |

|  |
| --- |
| **PERMISSION CLASS** |
| +permission\_id: int  +permission\_role: int  +permission\_tittle: string  +permission\_module: string  +permission\_description: strings |
| +addPermission ()  +editPermission()  +deletePermission()  +searchPermission() |

|  |
| --- |
| **ROLE CLASS** |
| +role\_id: int  +role\_tittle: string  +role\_description: string |
| +addRole ()  +editRole()  +deleteRole()  +searchRole() |

|  |
| --- |
| **USER CLASS** |
| +user\_id: int  +user\_role\_id: int  +user\_name: string  +user\_email: string  +user\_dob: date  +user\_address: string |
| +addUser ()  +editUser()  +deleteUser()  +searchUser() |

|  |
| --- |
| **TRAINER CLASS** |
| +trainer\_id: int  +trainer\_name: string  +trainer\_mobile: string  +trainer\_email: string  +trainer\_address: string  +trainer\_username: string  +trainer\_password: string |
| +addTrainer ()  +editTrainer()  +deleteTrainer()  +searchTrainer() |

|  |
| --- |
| **MEMBERS CLASS** |
| +member\_id: int  +member\_name: string  +member\_mobile: string  +member\_username: string  +member\_password: string  +member\_email: string  +member\_address: string |
| +addMember ()  +editMember()  +deleteMember()  +searchMember() |

|  |
| --- |
| **GYM CLASS** |
| +gym\_id: int  +gym\_description: string  +gym\_type: string  +gym\_name: string  +gym\_address: string |
| +addGym ()  +editGym()  +deleteGym()  +searchGym() |

|  |
| --- |
| **PAYMENT CLASS** |
| +payment\_id: int  +payment\_customer: int  +payment\_amount: string  +payment\_dob: date  +payment\_description: srting |
| +addPayment ()  +editPayment()  +deletePayment()  +searchPayment() |

**DATA DRIVEN MODELS.**

* **ZERO LEVEL DFD**

Below is zero level DFD of a gym management system, where I have elaborated the high-level process of gym management. It’s a basic overview of the whole gym management system or process being analyzed or modeled. It’s designed to be an at a glance view of Trainer, payment and branch showing the system as a single high-level process, with its relationship to external entities of gym, gym shift and gym faculty and it’s easy to understand.

**LOGIN MANAGEMENT**

**FACILITY MANAGEMENT**

**SYSTEM USER MANAGEMENT**

**GYM MANAGEMENT**

**TRAINER MANAGEMENT**

**GYM**

**MANAGEMENT**

**SYSTEM**

**PACKAGE MANAGEMENT**

* **First level DFD**

1st level of gym management system shows how the system is dived into sub systems, each of which deals with one or more of the data flows to or from an external agent and which together provides all of the functionality of the gym management system as a whole. It also identifies internal data stores of branch, payment, trainer, package, gym facility that must be present in order for the gym management to do its job and show the data flow between the various parts of the gym.

GENERATE GYM SHIFT REPORT

GYM BRANCH MANAGEMENT

GYM MANAGEMENT

PACKAGE MANAGEMENT

LOGIN MANAGEMENT

GYM SHIFT MANAGEMENT

GENERATE PACKAGE REPORT

GENERATE GYM BRANCH REPORT

CHECK USERLOGIN DETAILS

SYSTEM USER MANAGEMENT

GENERATE GYM REPORT

GENERATE SYSTEM USER REPORT

**GYM**

**MANAGEMENT**

**SYSTEM**

* **SECOND LEVEL DFD.**

DFD level 2 goes one step deeper into parts of level 1 of gym management. It may require more functionalities of gym management to reach the necessary level of detail about the gym management functioning. First level of gym management system shows how the system is divided into sub-systems. The second level DFD contains more details of Branch, payment, trainer, package, gym facility, gym shift, gym.

MANAGE SYSTEM ADMINS

MANAGE ROLES OF USER

MANAGE USER PERMISSION

MANAGE ATTENDANCE DETAILS

CHECK CREDENTIAL

ADMIN

SEND EMAIL TO USER

FORGOT PASSWORD

MANAGE MODULES

CHECK ROLES OF ACCESS

LOGIN TO SYSTEM

MANAGE REPORT

MANAGE TRAINER PROFILES

MANAGE PAYMENT DETAILS

MANAGE PACKAGE DETAILS

MANAGE GYM SHIFT DETAILS

MANAGE GYM DETAILS

**USE CASE DIAGRAM**

members

System user

Super admin

Trainer

Manage users and full application

Create schedule

Create Diet chart

Add workout plans

Manage gym faculty

Login and logout the system

Update my profile

Change account password

Search gyms

Apply for membership

View workouts

Manage package

Manage trainer

Manage payment

Manage gym shift

**GYM MANAGEMENT SYSTEM ALGORITHM.**

1. Start the program.

2. Display a login screen.

3. Prompt the user to enter their username and password.

4. Read the entered username and password from the user.

5. Validate the username and password against a user database.

6. If the username and password are valid, proceed to the main menu; otherwise, display an error message and go back to step 2.

7. Display the main menu with various options, such as:

a. Add a new member

b. Remove a member

c. View member details

d. Register for classes

e. Generate reports

f. Log out

8. Prompt the user to select an option from the main menu.

9. Based on the selected option, perform the corresponding action:

a. If "Add a new member" is selected, prompt the user for member details and add the member to the database.

b. If "Remove a member" is selected, prompt the user to enter the member's ID and remove the member from the database.

c. If "View member details" is selected, prompt the user to enter the member's ID and display their information.

d. If "Register for classes" is selected, prompt the user to select a class and register the member for that class.

e. If "Generate reports" is selected, generate and display various reports based on gym data.

f. If "Log out" is selected, go back to step 2.

10. After performing the selected action, go back to step 7 to display the main menu again.

**SEQUENCE DIAGRAMS**

* **Log in sequence diagram.**

Admin

Destroy token and session from database

Login successfully

Logout from application

Allow user to access the pages

Invalid login details

Allow user to access the internal pages on base of user token and session

Create session in and store in database

Send email to user to change password

Check security question and answer

Check authenticity for access

Provide authorization for access

Valid login details

Check login details

Forgot password

login to page

Authenticate page

verification

Database

Forgot password

Log in page

* **Sequence diagram of Gym Management System.**

List/delete trainer

List/delete package

List/delete facility

Save/update trainer

Save/update package

List/delete gym shift

Save/update facility

Save/update gym shift

List/delete gym

Manage trainer details

Manage package details

Manage facility details

Save /update gym

Manage gym shift details

Add/edit trainer

Add/edit gym

Add/edit gym shift

Add/edit facility

Add/edit package

Manage gym

Login to page

Trainer management

Package management

Facility management

Gym shift management

Gym management

Login success