Project Selected: Gym Management System

Description:

The Gym Management System is designed to manage all operations within a fitness facility.

Classes:

Gym Management (Class: Gym):

The Gym class will oversee the entire system and act as the entry point (Login menu) for both members and staff. It manages the login and sign-up menu process by using credentials and directing the user to the correct menu based on their access level. Members will be guided to their account options, while staff will be taken to the management system tool. A Submenu will be used for both members and staff, so that members can change between the menus (Payment, Account, and Log out), for staff they will see options for (Inventory Management, Class Management, and User management (Member and Staff)) The gym class will be linked to Member, Staff, Inventory, Class, and Facility to ensure that the user can access the correct functions depended on their roles.

- Manage Core Systems Components: The Gym class will oversee and manage the entire system
- Display the main menu for the rest of the classes and menu options
- Provide access to members login, staff login, payments, and inventory/equipment management

Member (Class: Member):

The member class will represent all customers of the gym and will store their details such as their Name, Username, Password, and membership type. All this information will be stored in a 2D array, making it easier to save information and to make any changes to it. Members can sign up for an account or login with their credentials (already a member), they can make updates to their personal information (Account Information menu) to view their account and change their password or their membership type, to either upgrade, downgrade, renew, or cancel it. Canceling their membership will not delete their account, but they will lose their access to facilities and other benefits. In the 2D array by their name, the membership type will be set to Null or something that we can use to keep track of who has an activate membership. This class will be linked to Membership, Payment, Class, and Schedule classes.

- Stores basic information of the customers
- Will have assign membership Id and membership Type. This can be edited by staff (Add/Edit/Remove)
- Access to Membership Menu and Payment menu, freely allow to manage their accounts to some accord.

Staff (Class: Staff):

The staff class will represent all employees of the facility, storing their information in a 2D array as well. Such as their name, role, username, and password. Staff log in with their credentials and gain access to the management features based on their role, such as between manager and a regular staff member. Staff will be able to update this information by changing their password. ONLY the manager should be allowed to change a Staff personal information like their name and to add or remove a staff from this array. This class will be linked to Member, Schedule, Inventory, and class classes, making it the central to managing the gym's operations.

- Array List of all employees at the Facility.
- Implement Staff Access Control (Ex. Manager, Crew, etc).
- Manage Staff Information including Adding/Editing/Removing Schedule, Add/Remove Staff or Members from their list

Class (Class: Class):

This class allows gym members to book/register for their own classes that are available (classes that are not full or not yet scheduled). Gym members can also cancel their enrollment if they wish. They should be able to see how many spots are left in the class and if there is room in that class. While gym members can see how many spots are available, they are not able to see who specifically signed up for those spots, but staff members have that access. Staff members can see the class roster of each class, they can enroll/dis-enroll gym members, add/delete classes, and will be able to change class times as well. There will be specific time periods for classes to take place, and this will allow staff members to manage the ongoing classes. Overall this class will handle class management actions including booking, cancellation, roster updates, and schedule medication for staff. This is linked to Staff, Members, Schedules, Gym, Facilities.

Example:

8:30am to 10:30am - - - Yoga, Zumba

10:45am - 12:15pm - - - Cycling

[Lunch for Staff Instructors]

1:00pm - 2:00pm - - - Yoga

2:15pm - 4:15pm - - - Wall Climbing, Cardio

4:30pm - 6:30pm - - - Zumba,

6:45pm - 8:45pm - - - Running Club

[End of all Classes]

Depending on how many time slots and rooms are available, a limited number of classes can take place. (This class will also correspond to the Facility:class)

- Access to Class Schedule that will open up a menu that offers different fitness classes (Ex. Yoga, Zumba, Cycling, etc.)
- Must have access to Schedule Class to manage booking and availability
- Allow members to register/book for classes

Inventory (Class: Inventory):

Staff can create new inventory items by entering details such as the product/equipment names, ID, and quantity, which are all being saved in a 2D array. This data can be updated to adjust the stock amount or modify descriptions. Items can be deleted from the data that is no longer being sold, or equipment is damaged. It allows staff to add, edit, remove, and view inventory items, ensuring proper stock management and product availability. This will update the stock availability as well for members when they buy products. This is linked to Gym, Staff, Facility, Class, and payment.

- Menu Option to manage gym products and equipment.
- Allow Staff to manage Inventory (Add/Edit/Remove) any products or equipment
- List will include Supplements Items that can be purchased (Protein Powder, Creatine, Pre-workout supplements, etc)

Membership (Class: Membership):

Different Membership types can be created with information such as its duration, cost, and benefits. Staff can read membership details to verify member eligibility and active status. Membership can be updated with upgrading or downgrading tiers, changing payment methods, or canceling it entirely, meaning to delete the membership from the Members Information but will still show until it expires. It manages membership creation, updates, cancellations, and renewals, connecting directly with Member accounts to control access level. This is linked to Staff, Members, Gym, Payment, and facility.

- Different Tiers of Memberships (MembershipType)
  o Basic Tier: Access to Gym Area (About $10-20)
  o Black Pass: Access to Gym Area, Resting Area with additional amenities, and Book Fitness Classes (About $40)
- Members are freely allowed to manage their membership such as upgrading, canceling, or renewing.

Facility (Class: Facility):

This is a submenu, of only few options for both staff and members. Both can only see buttons for Gym and Classes, allowing them to visit those menus. Depending on which menu they are on, the button will be grayed out, letting them know they are on that page and to avoid creating

duplicate menus. Representing physical gym areas and provides access points to Inventory (for staff) and Class Schedules(Both staff and member). This is linked to Staff, Member, Inventory, Gym, and Payment.

- Represent all physical areas withing the Gym (Including Main Gym Area, Resting Area, and the Classes Area)
- Access to Inventory Menu for staff to manage the inventory with their login
- Access to Schedule Menu for Members to book/cancel a class with their login

Payment (Class: Payment):

Payment menu will allow payments to be created when processing member dues, class fees, or other transactions. Both Staff and Members can read payments history, however only Staff are allowed to delete this information. Both Staff and Members can update payments information such as changing payment methods or editing information. This class will handle all payment processing, updates, viewing of payment history, and generates receipts when payments are completed. This is linked to Receipt, Staff, Member, Gym, and Membership.

- Payment menu with a variety of options of paying for members (Cash, Credit, debit, etc.)
- Handle the Payment calculation changes when necessary (When paying with Cash)
- Access to Receipt Class, allowing it to print out a receipt if member wants one

Receipt (Class: Receipt):

Receipts will be created automatically whenever payment is processed. However, an option will be given if you want to view this receipt but will be saved in receipt history for future references. Both Members and Staff are able to view these information details. Staff are able to delete receipt history, if a duplicate exists. It manages creation, viewing, and deletion of receipts, linking directly with the Payment class. This class links with the payment, Member, Staff, Inventory, and Membership.

- Prints out Receipt of purchase from after the payment class was successful.
- Give option to whether to print (display) a receipt. (Save Paper)

Schedule (Class: Schedule):

Schedule menu will show two different tables, one for staff hours and one for the classes time, location, etc. Staff Hour schedule will show up for staff members to make necessary changes, if an employee is calling off, calling in sick, or if the employee is picking up a shift. Staff can also make changes to the Classes Schedule such as the Class time, Class Name, and Class Location. Members will only be able to see the Classes Schedule to see available Times and opening spots. It should manage both staff and class schedules, being updated by staff and view-only for members, besides booking or canceling a class. This is linked to the Class, Staff, Members, Membership, Gym, and Facility.

- Connected with Staff and Class, as it will have two lists.
- List Management:
    o Staff Schedules (Work Hours / Shifts)
    o Class Schedules (Available Times / Opening)