Experiment no. 2

Aim: Develop Software Requirement Specification (SRS) document in IEEE format for the Gym Management System.

1. Introduction:

1.1 Purpose

The purpose of this document is to build a GYM Management System which would facilitate a gymming and fitness center to automate its operations of keeping records and store them in the form of a large and user friendly database further facilitating easy access to the personnel.

1.2 Document Conventions

This document uses the following conventions:

- DB for Database
- ER for Entity Relationship
- HTML (HyperText Markup Language): A markup language to create web pages
- CSS(Cascading Stylesheet): Enhance presentation of document written in HTML.
- PHP(HyperText Preprocessor): Server-side scripting language.
- PhpMyAdmin: Application for MySQL Database Management.

1.3 Intended Audience

This project is a prototype for the Gym management system and it is restricted within the college premises. This has been implemented under the guidance of college professors. This project is useful for the Gym management team and as well as to the Members.

1.4 Project Scope

The purpose of building the GYM Management system is to automate the manual processes which were in existence till now like:
manual process of registration, manual setting of workouts and training programs, manual transaction, manual encoding of attendance, manual inventory of equipment and lastly the generation of reports.

Gym Management System provides a system which handles the personal information of the customers of the gym with utmost care and ensures a proper environment throughout their tenure at our GYM.

1.5 References

https://krazytech.com/projects/sample-software-requirements-specificationsrs-report-airline-database#:~:text=A%20Software%20Requirements%20Specification%20

2. Overall Description

2.1 Product Perspective

- Automating the existing system.
- Reducing time taken to enter member and staff data.
- Making the member data easily accessible.
- Speeding up operations like easy payment options.
- To centralize the management of the gym and fitness center.
- Reduce data loss in the manual system already in place.
- Reduce the cost of maintenance of the gym and data storage and reduce the space occupied by the files being used.
- Make data retrieval easy and reduce time wasted when manually searching for data.
- It also helps the users in reducing the carbon footprint as the amount of paper used in the company reduces.
- Reduce data redundancy. Redundancy is the repetition of similar data in the system. Redundancy occurs when data is updated so there occurs more than one copy of data I which consumes a lot of space.

2.2 Product Functions

The major feature of Gym Management System is:

There will be a common login/registration page for all users, after successful login/registration there will be different permissions set for all users like the Admin, Trainers and finally the Members.

The GYM management system stores the following information:

Member details: The details of the members including their name, purpose, contact details, body type, assigned trainer and the batch.

Trainer details: The details of the trainers including their name, contact details, experience.

Membership types: It includes the type of memberships available in the gym like premium,

Batch details: It includes the bath details like start and end time.

Equipment details: It includes equipment type and the trainer associated with the equipment.

2.3 User classes and Characteristics

The Users of this GYM Management system would be divided into three categories viz. Admin, Trainers and Members

The admin would be the managing authority of this GYM Management system who would be responsible for all the operations of the GYM Management system. The trainers would specifically look after the requirements of each and every member of the GYM. Members would be able to check their membership status and all the other factors associated with their membership.

- For Admin
  After successful login, they can manage the gym by managing the following :
  gym batches, facilities, packages, trainers, payments, users and all the operations of the entire gym management system. Admin has the privilege to access anyone's information.
- For Trainer
  After successful login,they can create diet charts of the members, add workout plans, and view the members.
- For Member
  They are either going to register or will already have registered through the online system. After successful login, they can apply for the memberships, view workouts and make payments. They even have the options like their attendance display, fee payment, change batch/trainer request etc. Also,Members can review the trainer and the diet plans.

2.4 Operating environment

Operating environment for the GYM Management system is as listed below:

- Client/server system
- Operating system: Windows.
- database: SQL database
- Platform: HTML, CSS, PHP

2.5 Design and Implementation constraints

- The information of all the members and the trainers must be stored in a database that is accessible by the website.
- MS SQL Server will be used as SQL engine and database. The Gym Management System is running 24 hours a day.
- Users may access from any computer that has Internet browsing capabilities and an Internet connection. Users must have their correct usernames and passwords to enter into their online accounts and do actions.

3. External Interface Requirements

3.1 User Interfaces

- Front-end software: HTML, CSS, JavaScript, PHP
- Back-end software: SQL

3.2 Hardware interfaces

- Windows.
- A browser which supports CSS, HTML & Javascript.

3.3 Software interfaces

Following are the software used for the Gym Management System application.

Software used	Description
Operating system	We have chosen Windows operating system for its best support and user-friendliness.
Database	To save the member records, membership details we have chosen the PhpMyAdmin database.
XAMPP	To implement the project we have chosen PHP language for its more interactive support.

3.4 Communication interfaces

This project supports all types of web browsers. We are using simple electronic forms for the user registration, adding diet chart plans etc.

4. System features

Access rights:

There will be a common login/registration page for all users, after successful login/registration there will be different permissions set for all users according to them they can perform functions which are listed below:

- For Admin
  After successful login, they can manage the gym by managing the following :

gym batches, facilities, packages, trainers, payments, users and all the operations of the entire gym management system. Admin has the privilege to access anyone's information.

- For Trainer
  After successful login,they can create diet charts of the members, add workout plans, and view the members.

- For Member
  They are either going to register or already registered through the online system. After successful login, they can apply for the memberships, view workouts and make payments. They even have the options like their attendance display, fee payment, change batch/trainer request etc. Also,Members can review the trainer and the diet plans.

5. Non-functional requirements

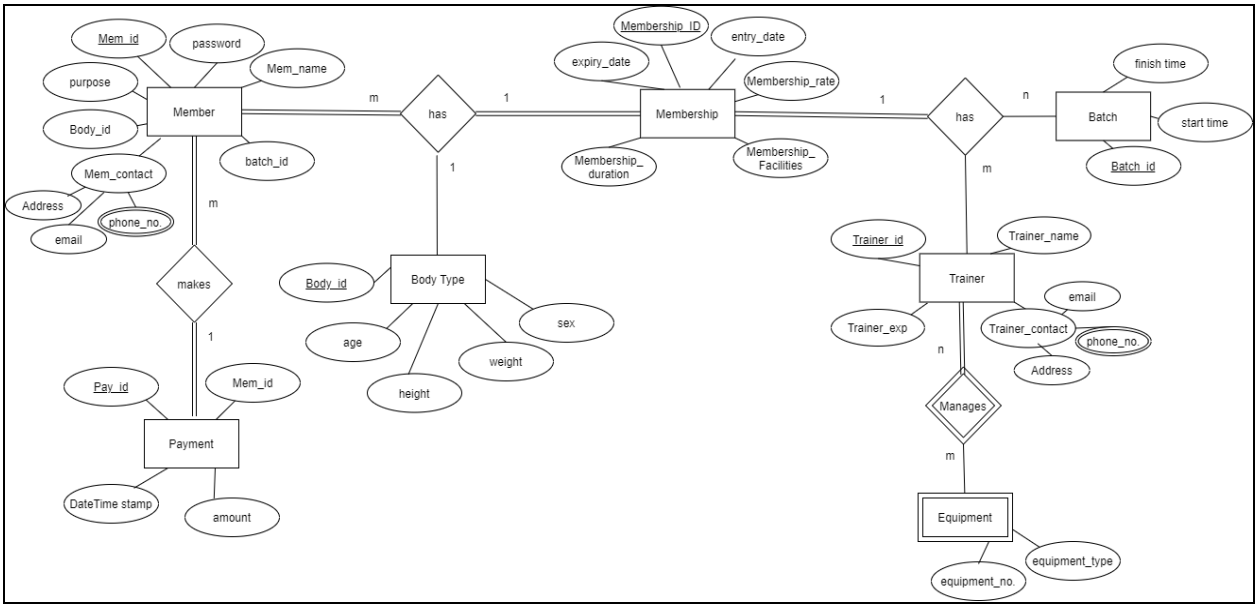
5.1 Performance requirements

The steps involved to perform the implementation of the Gym Management database are as listed below.

1. ER DIAGRAM

The E-R Diagram constitutes a technique for representing the logical structure of a database in a pictorial manner. This analysis is then used to organize data as a relation, normalizing relation and finally obtaining a relation database.

- ENTITIES: Which specify distinct real-world items in an application.
- PROPERTIES/ATTRIBUTES: Which specify properties of an entity and relationships.
- RELATIONSHIPS: Which connect entities and represent meaningful dependencies between them.



2. NORMALIZATION

The basic objective of normalization is to reduce redundancy which means that information is to be stored only once. Storing information several times leads to wastage of storage space and increase in the total size of the data stored.
If a database is not properly designed it can give rise to modification anomalies. Modification anomalies arise when data is added to, changed or deleted from a database table. Similarly, in traditional databases as well as improperly designed relational databases, data redundancy can be a problem. These can be eliminated by normalizing a database.
Normalization is the process of breaking down a table into smaller tables. So that each table deals with a single theme. There are three different kinds of modifications of anomalies and formulated the first, second and third normal forms (3NF) is considered sufficient for most practical purposes. It should be considered only after a thorough analysis and complete understanding of its implications.

5.2 Security requirements

Security systems need database storage just like many other applications. However, the special requirements of the security market mean that vendors must choose their database partner carefully.

5.3 Software quality attribute

- AVAILABILITY: Since we are hosting our project on the server it will be available all the time.
- CORRECTNESS: The system should generate an appropriate report about different activities of the gym and should keep track of all records.
- MAINTAINABILITY: The system should maintain correct details of gym members and the documentation of all the gym.
- USABILITY: The system should satisfy the maximum number of users needs.

6. Future scope

The Future scope of this project will be to deploy this GYM Management system to different GYMs and Fitness centers to cater their needs also to add few functionalities based on the requirements of those GYMs. Also, the review and the customer care section can be added to help them seek their query.