Sports Club Management System (SCMS)

Equipe

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Summary :

Sports Club Management

The project Sports Club Management System creates a software that stores and manages all the data needed to describe the personal data of the members and their framework within an organization. It includes definition of various levels of hierarchy in an organization, the price structure pertaining to every element in this hierarchy, the description of every member functioning in the club and the overall sports club database which integrates all the elements mentioned above. It has a database administration that has access to the entire database, in regards with viewing and update of information. The exclusive right is implemented using authorized access. Also viewing all data and editing of personal data can be done by any admin, this also using authorized access

Acknowledgements :

The completion of any project involves the efforts of many people. We have been fortunate enough to receive immense help and support from various quarters during the making of this project, and with gratitude, we take this opportunity to acknowledge all those whose guidance and encouragement have helped us succeed.
We are grateful to our professor and guide, Mr. Abdelmoujoud Assabir, for his valuable guidance, timely assistance, and constant support through-out our work.
We are also indebted to the Faculty of Science at Mohammed V University in Rabat for the facilities and support extended to us.
Finally, we would like to express our heartfelt gratitude to all the teaching and non-teaching staff of the Faculty of Science in Rabat, as well as to our friends, for their help, motivation, and support

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HADDOUCHE Oussama

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1 Introduction

1.1 Problem Statement

The Sports Club Management System project deals with registering new members, plans, payments, routine and managing the members for the club. The project has complete access for the crud operations that are to create, read, update and delete the database entries. At first you need to login as this system is totally controlled by the admin/owner and then register the members for the club and check their health status and view the total income per month. Now you can assign different routine to different members and also check the health status which can be viewed and edited too and finally check the payments according to the plan they have chosen. It has a database administration that has access to the entire database, in regards with viewing , updating and deleting the information

1.2 Outcomes/Objectives

The Sports Club Management software is very user friendly and appealing. The Human objective of the system is to maintainand retrieve information about the members and the sports they will play on which day of the week and at what time in the sports club. The system is fairly simple in design and implementation. The main objectives of this system can be summarized as follows :

— Design of a GUI portal for managing theSports Club for the main admin/owner.
— Insertion of member's data, plans and managing of payment and health status.
— Monthly Payment for monthly plan and yearly payment of yearly plan.
— Computerized manipulation and management of member data and id. Easy management of databases of various sections covering key aspects.

1.3 Methodology

The methodology for developing a Sports Club Management System (SCMS) involves a structured approach to ensure efficiency and user satisfaction. First, a comprehensive needs analysis is conducted to identify functional requirements, such as member registration, payment tracking, and scheduling, as well as non-functional requirements, including scalability, security, and performance. Following this, the system design phase involves creating an Entity-Relationship (ER) diagram to model relationships between key entities, normalizing database schemas to reduce redundancy, and designing a user-friendly interface using mockups. In the development phase, the backend is implemented using PHP for server-side logic and MySQL for database management, while the frontend utilizes HTML, CSS, and JavaScript to build a responsive interface. Features such as an admin dashboard, payment automation, and health status tracking are integrated during this phase. The system undergoes rigorous testing, including unit testing for individual modules, integration testing to ensure seamless interaction, and user acceptance testing to gather feedback. Finally, the SCMS is deployed on a local server via XAMPP for initial testing and transitioned to a live server for broader accessibility. This methodology ensures the delivery of a robust, scalable, and user-centric solution for managing sports clubs efficiently

2 Background and Review of Literature

2.1 History of Database Management System

Following the technology progress in the areas of processors, computer memory, computer storage, and computer networks, the sizes, capabilities, and performance of databases and their respective DBMSs have grown in orders of magnitude. The development of database technology can be divided into three eras based on data model or structure : navigational, SQL/relational, and post-relational.

The two main early navigational data models were the hierarchical model, epitomized by IBM's IMS system, and the CODASYL model (network model), implemented in a number of products such as IDMS. The relational model employs sets of ledger-style tables, each used for a different type of entity. Only in the mid-1980s did computing hardware become powerful enough to allow the wide deployment of relational systems (DBMSs plus applications). By the early 1990s, however, relational systems dominated in all large-scale data processing applications, and as of 2015 they remain dominant : IBM DB2, Oracle, MySQL, and Microsoft SQL Server are the top DBMS.

The dominant database language, standardized SQL for the relational model, has

influenced database languages for other data models.

2.2 MySQL

MySQL is an open-source relational database Management System (RDBMS). MySQL is written in C and C++. Its SQL parser is written in yacc, but it uses a home-brewed lexical analyzer. MySQL works on many system platforms, including Linux, macOS, Microsoft Windows, and NetBSD.
MySQL is offered under two different editions : the open source MySQL Community Server and the proprietary Enterprise Server. MySQL Enterprise Server is differentiated by a series of proprietary extensions which install as server plugins, but otherwise shares the version numbering system and is built from the same code base.
Major features that are available in MySQL include :
— A broad subset of ANSI SQL 99
— Extensions, Cross-platform support
— Stored procedures
— Triggers
— Cursors
— Updatable views
— Online DDL when using the InnoDB Storage Engine

2.3 PHP

PHP : Hypertext Preprocessor (or simply PHP) is a general-purpose programming language originally designed for web development. It was originally created by Rasmus Lerdorf in 1994 ; the PHP reference implementation is now produced by The PHP Group.

PHP code may be executed with a command line interface (CLI), embedded into HTML code, or used in combination with various web template systems, web content management systems, and web frameworks.

2.4 XAMPP

XAMPP is a free and open-source cross-platform web server solution stack package developed by Apache Friends, consisting mainly of the Apache HTTP Server, MariaDB database, and interpreters for scripts written in PHP and Perl.

XAMPP's ease of deployment means a XAMPP stack can be installed quickly and simply on an operating system by a developer, with the advantage that a number of common add-in applications such as WordPress and Joomla ! can also be installed with similar ease using Bitnami.

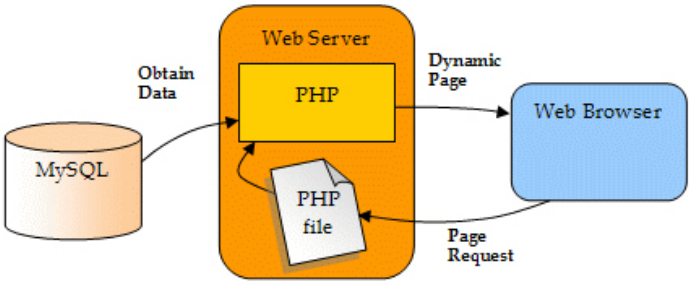

FIGURE 2 – Web Server

3 Requirements

3.1 Software Specification

— Operating System : Windows 2000/XP/Vista
— Front End : HTML & CSS
— Database : MySQL
— Server : XAMPP
— Design Tool : PHP

3.2 User Characteristics

Every user :
— Should be comfortable with basic working of the computer
— Must have knowledge of English
— Must carry a login ID and password used for authentication
— The GUI is restricted to English
— Login ID and password used for identification of administrator. There is no facility for a guest login.

4 System Design and Implementation

Systems design is the process or art of defining the architecture, components, modules, interfaces, and data for a system to satisfy specified requirements. One could see it as the application of systems theory to product development.
This Project is implemented using XAMPP, which is proven to be a very efficient tool in the field of PHP programming. It is done under Windows10 platform. PHP programming language is used to implement the entire code. Interface to the program is provided with the help of MySQL.
The Sports Club management project deals the adding new Sports Club plans and managing the members for the Sports Club. The project has complete access for the

CRUD operations that are to create, read, update and delete the database entries. At first you need to login as this system is totally controlled by the admin/owner and then register the members for the club and check their health status and view the total income per month. Now you can assign different routine to different members and also check the health status which can be viewed and edited too and finally check the payments according to the plan they have chosen. It has a database administration that has access to the entire database, in regards with viewing and deletion of information.

4.1 USE CASE

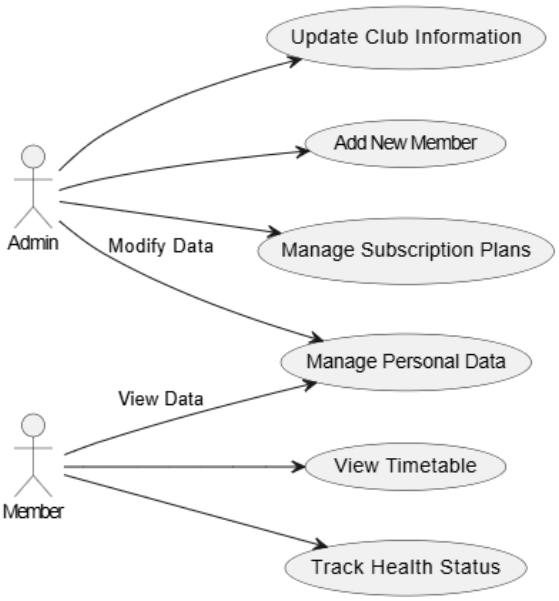

FIGURE 3 – Use case digramm

4.2 CLASS Diagram

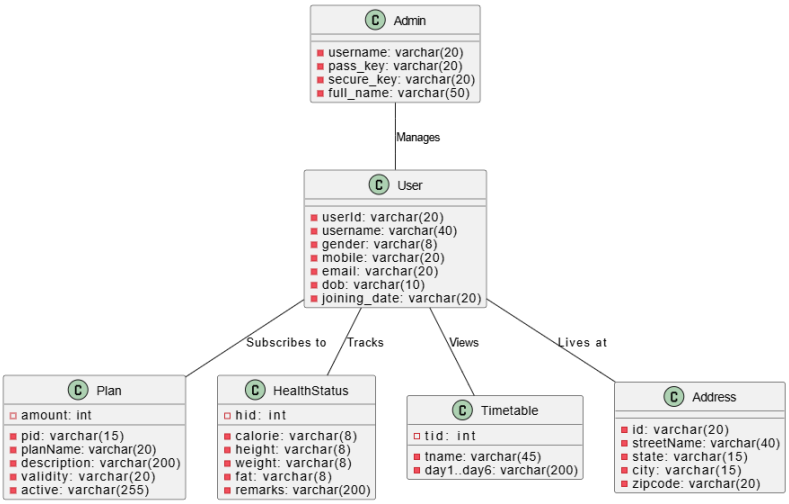

FIGURE 4 – Class digramm

4.3 Sequence Diagram

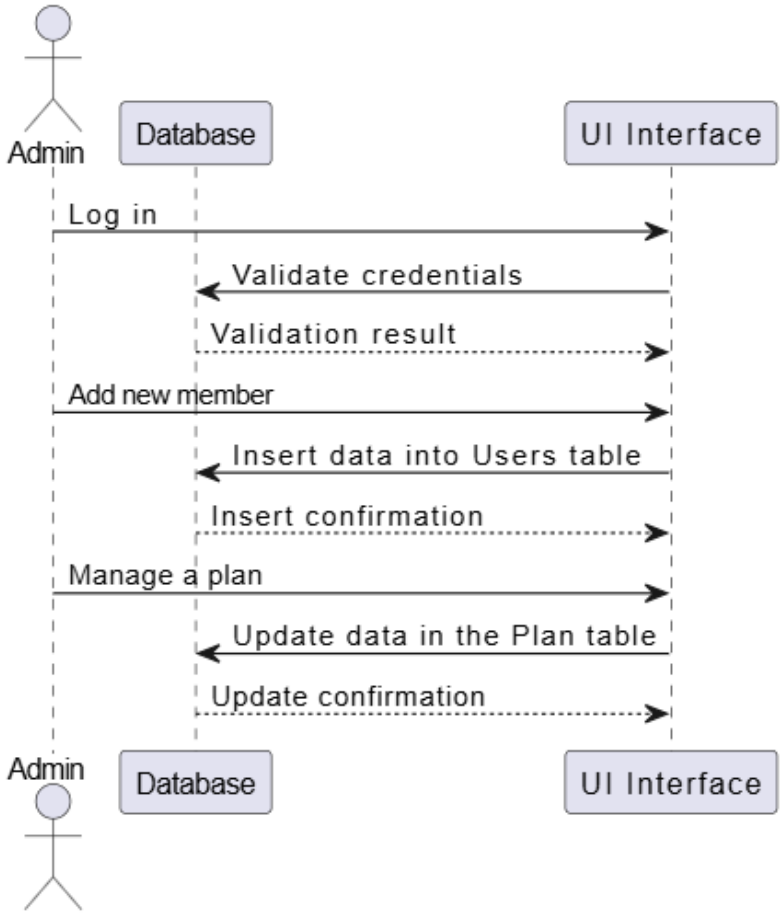

FIGURE 5 – Sequnce digramm

5 Results

5.1 Registration Page

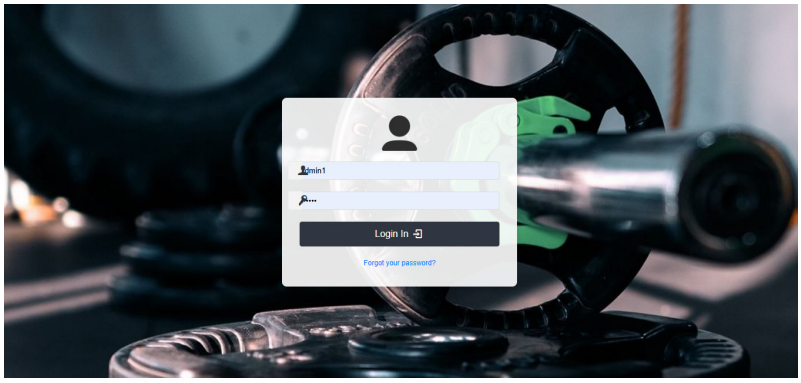

FIGURE 6 – Registration Page

5.2 Homepage

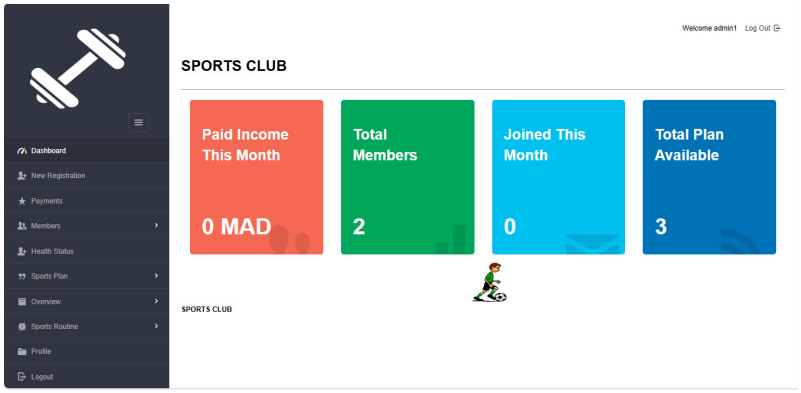

FIGURE 7 – Homepage

5.3 Add new membre

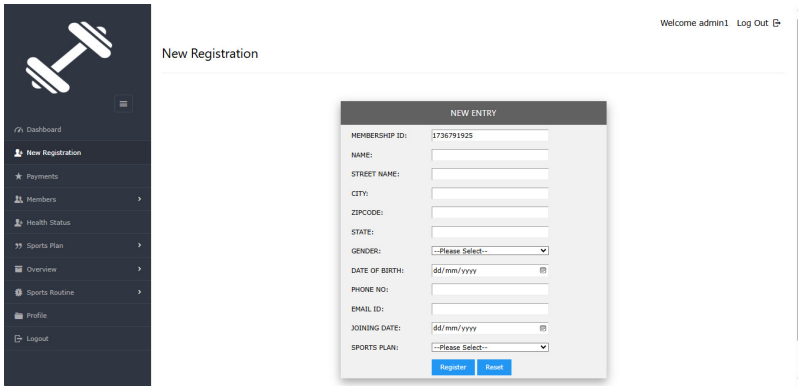

FIGURE 8 – ADD Page

5.4 Payment Page

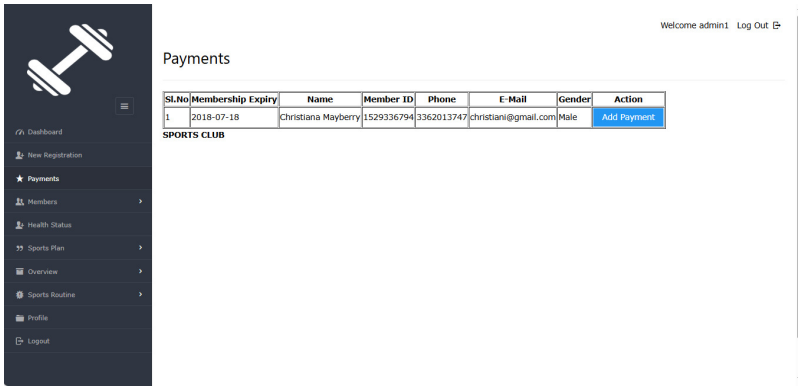

FIGURE 9 – Payment page

5.5 Edit Member

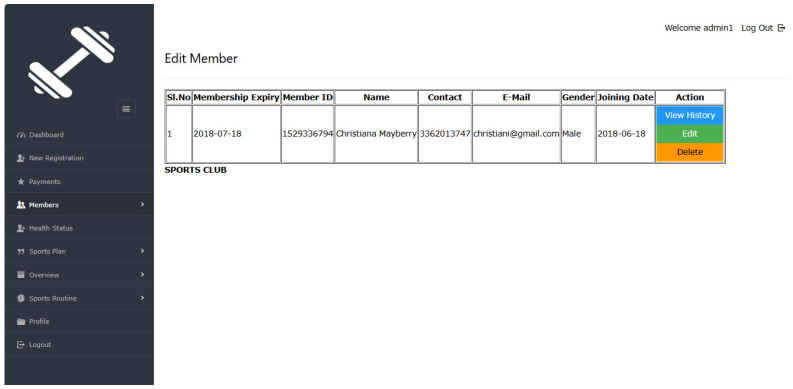

FIGURE 10 – Edit Page

6 Conclusion

Planned approach toward working : The maintenance of Sports Club will be well planned and organized. The data will be stored efficiently with optimal disk space consumption in data stores which will help in retrieval of information as well as its storage under resource constraints.

Accuracy : The level of accuracy in the proposed system will be higher. All operations would conform to integrity constraints and correctness, and it will be ensured that whatever information is received at or sent from the center is accurate.

Reliability : The reliability of the proposed system will be high due to the above-mentioned reasons. This comes from the fact that only the data which conforms to the accuracy clause would be allowed to commit back to the disk. Other properties like transaction management and rollback during system or power failure, etc., get automatically taken care of by the SQL systems, which is undoubtedly an excellent choice of the DBMS system. Properties of atomicity, consistency, isolation, and data security are intrinsically maintained.

7 Future Enhancement

No redundancy : In the proposed system, it will be ensured that no repetition of information occurs, neither on a physical storage nor on a logical implementation level. This economizes on resource utilization in terms of storage space. Also, even in case of concurrent access, no anomalies occur, and consistency is maintained. In addition to all this, principles of normalization have been endeavored to be followed.

Immediate retrieval of information : The main objective of the proposed system is to provide a quick and efficient platform for retrieval of information. Queries allowed by the database will ensure efficient search capabilities.

1. Oracle Database MySQL PL/SQL 101 - Christopher Allen (Oracle Press)
2. Fundamentals of Database Systems, Seventh Edition - Elmasri Navathe
3. `https://stackoverflow.com/questions/26236028/xampp-connect-to-SQL-server`
4. `https://www.tutorialspoint.com`
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