

**Declaration**

We, the students of Software engineering(Plymouth) of NSBM Green University, hereby declare that the project work entitled “Smart Gym Management System” is a record of an original work done by us under the guidance of our \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*, Senior Lecturer. School of Computing.

**Acknowledgements**

It gives us enormous pleasure to submit the project report on “Smart Gym Management System”. Our report won’t be possible without contribution of few people. We would like to express our gratitude & respect to our honorable teacher and project \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* for his constant guidance, advice, encouragement & every possible help in the overall preparation of this report. We would also like to express our excessive thanks to our team mates for the excellent support in completing our project.

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**Abstract**

Any business that does not have a online application is missing out on one of the most powerful marketing tools available to them. The main reason that it is important for businesses to have an online application is how people are likely to find you. These days most people will go online and research products and companies before they make a purchase. For this reason of dependency on online, we developed this application for a gymnasium in which customer can get all information about the gymnasium and he/she can access or enroll at the gym via online.

Usually, the client uses MS Excel or paper, and maintains their records, however it is not possible them to share the data from multiple system in multi user environment, there is lot of duplicate work, and chance of mistake. When the records are changed they need to update each and every excel file. The Smart Gym Management System eliminates most of the limitations of the existing software. **Increasing efficiency and effectiveness, automation, accuracy, user-friendly interface, information availability, communication capacity, maintenance, cost reduction makes our system smarter than the existing system.**

**\*\*** We integrate some new and prominent features along with all the necessary features. Some of them are user login by face recognition, webcam integration, using Twilio SMS API for phone number verification.\*\*

**CONTENT**

**Introduction**

We all know health is a wealth. We do not need a fancy car, big apartment, a doctor degree without a health. Being healthy is a first thing we need to keep in mind. Because most of time our attitude depends on how we feel. Being healthy and fit gives us energy to do anything. Physical fitness is very necessary for a healthy and tension free life. Physical fitness includes diet, exercise and sleep. These three basic things have their own importance in each individual's life and everyone should be sensible with regard to these for a healthy life

**Objectives**

The objectives of this study are summarized below:

* The main objective of the project is to design and develop a user friendly efficient computerized Gym Management System.
* An accurate system without any data redundancy.
* Secured data storage for Authority end.
* Secure the user ends data by providing each user’s own personal credentials.
* A flexible system which can maneuver the customer-staff relationship in an effective manner.
* To provide better graphical user interface.
* Computerization can be helpful as means of saving time & money.

**Theoretical Background**

We have done a project on Gym Management and database management \***and transactions. This system is proposed to be an automate database management & transactions. This stores employee, member, payroll, receipts, and products information**. \*It also provides the facility of search & advanced search for searching the records efficiently & immediately. This system provides data storing & report generation with graphical user interface (GUI).

**\*\*.1 System Study**

It is always necessary to study and recognize the problems of existing system, which will help in finding out the requirements for the new system. System study helps in finding different alternatives for better solution.

The project study basically deals with different operations:

1. 1: Data Gathering
2. 2: Study of Existing System
3. 3: Analyzing Problems
4. 4: Studying various documents
5. 5: Feasibility study for further improvements
6. Following are the steps taken during the initial study

Initially, we collected all the information, which they wanted to store. Then we studied the working of the current system which is done manually. We noted the limitation of that system which motivated them to have new system. With the help of these documents we got basic ideas about the system as well as input output of the developed system. The most important thing is to study system thoroughly. Here we are studying both existing system and proposed system so that advantages & disadvantages of both the systems can be understood. The first task was identifying how system can be computerized. Some analysis and projections was done regarding changes to be made to the existing system. The new developed system for Gym Management is simple without complexities.

**2.2 Existing System**

An Existing system refers to the system that is being followed till now. The gym is working manually. The current system is time consuming and also it is very costly, because it involves a lot of paperwork. To manually handle the system was very difficult task. But now-a-days computerization made easy to work. The following are the reasons why the current system should be computerized:

* To increase efficiency with reduced cost.
* To reduce the burden of paper work.
* To save time management for recording details of each and every member and employee.
* To generate required reports easily.

**\*\*.3 Proposed System**

The online gym management system is user-friendly application. This automated system makes all functionality easier for both owners and customers. It is very simple in design and to implement. The system requirements are very low. System resources and the system will work in almost all configurations.

It has the following objectives:

* **Enhancement**: The main objective of Smart Gym Management System is to enhance and upgrade the existing system by increasing its efficiency and effectiveness. The software improves the working methods by replacing the existing manual system with the computer based system.
* **Automation**: The Smart Gym Management System automates each and every activity of the manual system and increases its throughput. Thus the response time of the system is very less and it works very fast.
* **Accuracy**: The Smart Gym Management System provides the uses a quick response with very accurate information regarding the users etc. Any details or system in an accurate manner, as and when required.
* **User-Friendly**: The software Smart Gym Management System has a very user-friendly interface. Thus the users will feel very easy to work on it. The software provides accuracy along with a pleasant interface. Make the present manual system more interactive, speedy and user friendly.
* **Availability**: The transaction reports of the system can be retried as and when required. Thus, there is no delay in the availability of any information, whatever needed, can be captured very quickly and easily.
* **Maintenance Cost**: Reduce the cost of maintenance.

**Entity Relationship Diagram**

An entity-relationship diagram (ERD) is a graphical representation of an information system that shows the relationship between people, objects, places, concepts or events within that system. In software engineering an ER model is commonly formed to represent things that a business needs to remember in order to perform business processes. Consequently, the ER model becomes an abstract data model that defines a data or information structure that can be implemented in a database, typically a relational database. An ER model is typically implemented as a database. In a simple relational database implementation, each row of a table represents one instance of an entity type, and each field in a table represents an attribute type. In a relational database a relationship between entities is implemented by storing the primary key of one entity as a pointer or "foreign key" in the table of another entity. There is a tradition for ER/data models to be built at two or three levels of abstraction. Note that the conceptual-logical-physical hierarchy below is used in other kinds of specification, and is different from the three schema approach to software engineering.

**Future Work**

The project has been developed in a very short period of time and all efforts have been taken so that this project is very efficient in its execution there still exists some scope of improvement in our project. The following lists some of the enhancement that can be added incorporate into the project. Application of the project can be done more attractively. Database management and all maintenance module can be updated which helps the administrator. More security measures can be taken. There are also few features which can be integrated with this system to make it more flexible. Below list shows the future points to be consider.

* Improve this application as a **Mobile application**
* Face recognition system
* Finger print matching for taking entry to gym.
* Video conversation option for trainers and members.
* Automated Fitness suggestion by enquiring the condition of the health

**Conclusion**

The “SMART GYM MANAGEMENT SYSTEM” is successfully designed and developed to fulfilling the necessary requirements, as identified in the requirements analysis phase. The old manual system was suffering from a series of drawbacks. The present project has been developed to meet the aspirations indicated in the modern age.