# VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI

## GOVERNMENT ENGINEERING COLLEGE HASSAN

## DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

### A MINI PROJECT REPORT ON

# "GYM MANAGEMENT SYSTEM"

Submitted in partial fulfillment of fifth semester Database Management System LABORATORY WITH MINI PROJECT (18CSL58) in Computer Science and Engineering.


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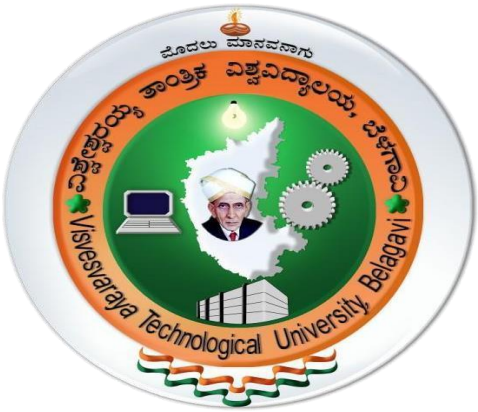


# 2021-2022

## CERTIFICATE

This is to certify that **Bhavya HR, USN:4GH19CS010, KARUN KUMAR M N USN:4GH19CS024,** and **RAJESH K USN:4GH20CS408** has satisfactorily implemented the mini project titled "GYM MANAGEMENT SYSTEM" in fifth semester DBMS Laboratory with mini project (18CSL58) as per the requirements of **Visvesvaraya Technological University, Belagavi** for the academic year 2021- 2022.

| | | |
|---|---|---|
| **Mrs. Priyanka H L,** B. E, MTech. | **Dr. Basavaraju T G,** B.E, MTech, PhD. | **Mr. Annaiah H,** B.E, MTech |
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**External Viva Name and Signature of Examiner with**

**date**

# DECLARATION

We, **BHAVYA H R, KARUN KUMAR M N** and **RAJESH K** students of fifth semester B.E**, GOVERNMENT ENGINEERING COLLEGE, Hassan** bearing USN **4GH19CS010, 4GH19CS024 and 4GH20CS408** respectively, hereby declare that the project entitled **"GYM MANAGEMENT SYSTEM"** has been carried out by us under the supervision of our Guide, **Mr. ANNAIAH H**, **B.E., MTech, Assistant Professor, Dept. of CS&E, GEC Hassan and** Mrs**. PRIYANKA H L**, **B.E., MTech,** Assistant Professor, Dept. of CS&E, GEC Hassan, have submitted in partial fulfilment of the requirements for the award of the Degree of B.E in CS&E by the Visvesvaraya Technological University, Belagavi during the academic year 2020-2021**.**

**This report has not been submitted to any other Organization/University for the award of degree or certificate.**

**Date:**
**Place: Hassan**

**Project Associates:**
Bhavya HR
Karun Kumar MN
Rajesh K

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**PROJECT ASSOCIATORS**

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# ABSTRACT

This project "**Gym Management System**" is solution fitness centres to manage the customers in an easier and more convenient way. The administrator, is able to view all the members of fitness centre as well as their details. The basic structure of the system as follows

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This project is a computer-based program and it manages the gym members, the personel and the inventory. This system also maintains the client details, to provide the valuable reports regarding the progress of the gym member.

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# CHAPTER 1

## INTRODUCTION

Gym Management Application With Inbuilt Chatbot.

- made using python(tkinter)
- database MYSQL(Workbench)

Gym management system is a type of software used to store, access and maintain the data of the employees and gym goers of the respected gym.The data may includes the personal details of gym goers, employees, feez structure of gym goers.All these are stored in database and facilitate users to access the permitted data through the interface.

### OVERVIEW

It is a language used to interrogate and process data in a relational database. Originally developed by IBM for its mainframes, SQL commands can be used to interactively work with a database or can be embedded within a script or programming language as an interface to a database. Programming extensions to SQL have turned it into a full-blown database programming language, and all major database management systems (DBMSs) support it. ANSI standardized SQL.

But most DBMSs have some proprietary enhancement, which if used, makes SQL non-standard. Moving an application from one SQL database to another sometimes requires tweaking, the age-old problem in this business!

The present scenario in the gyms is that the records are kept by writing in a file on the paper. Every management task is done manually. This creates a system unreliable and confusing to keep the correct track of the records.

The maintenance of the system like this is hardly required until it needs to change any part of the system. The information about the various things contained in the system are like members, trainers, equipment can get by just a few clicks unlike the paper documents required the serious reading for such information.

It helps in creating the various batch according to their preference or if they want a particular trainer. It made easy to generate the reports of various operations performed in the gym are like paying the fee it can be stored and later evaluated and get the list of members who did not pay the fee.

# CHAPTER 2

## PROJECT FEATURES & OBJECTIVES

### About the Project:

**Gym Management System** developed using python is an excellent solution for gyms with a large/growing number of members, or ones serving elite clientele. This solution helps to identify the user and manage their timely memberships.

In its working, each member is issued a membership card which is valid for a fixed number of gym sessions, or for a particular period of time, or a combination of the two, totally based on the payment policy. Once the time-frame or number of sessions expire, the machine notifies the member about the payment of renewal.

Hence, the system reduces hassle and any chances of quarrels between the members and the gym management. It can also generate multiple reports like monthly, weekly, daily, session wise.

### Working

1. This project stores information of gym members and you can update add or delete the member
2. Fees page features the fee details of the employee you can generate the amount of bill also
3. Developer page features the details of the developer
4. Help page features the chatbot which can help you with your queries

### Objectives:

1. Add payment areas.
2. Add members to gym.
3. Add different employee of gym.
4. View different gyms
5. View payment areas.
6. View members to gym.
7. View admin of gym.
8. Update and delete different values of gyms, payments made, gym member’s details and employee’s information.

# CHAPTER 3

## DESIGN & CONNECTIVITY

LOGIN: The admin and the members have their own unique login portal.
REGISTRATION: The admin can register his details through the register portal.
FEEZ DETAILS: The admin will maintain the feez details of the gym goers (members). EMPLOYEE DETAILS: The admin can also maintains the employee details.

## SCHEMA DIAGRAME

REGISTER

| Fname | Lname | Email | Contact | SequrityQ | SequrityA | Password |
|---|---|---|---|---|---|---|

GYM MEMBER

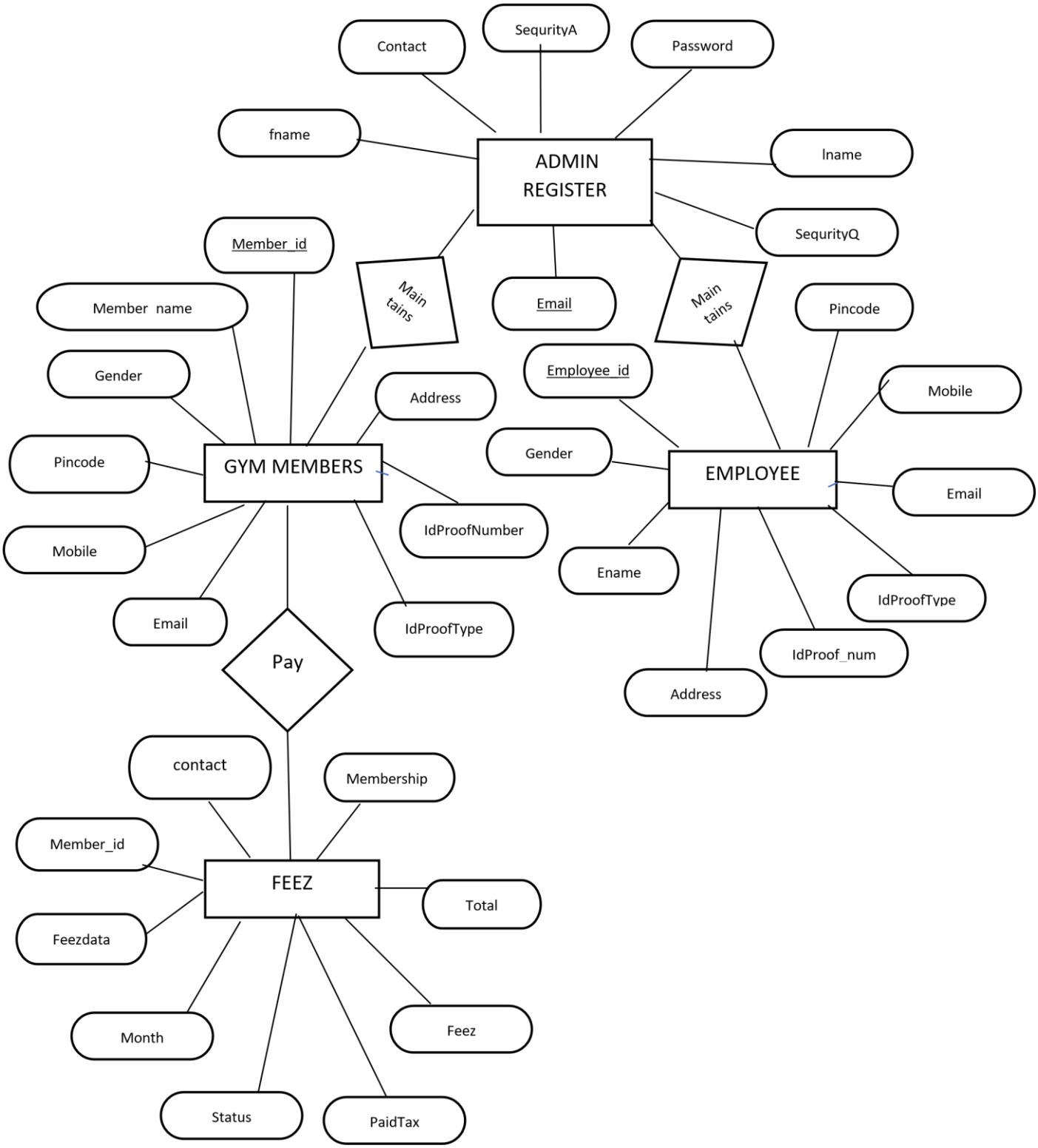
| Mem_id | Mem_name | Gender | Pincode | Mobile | Email | Address | IdProofType | IdProofNum |
|---|---|---|---|---|---|---|---|---|

EMPLOYEE

| Emp_id | Ename | Gender | Address | Pincode | Email | Mobile | IdProofType | IdProof_num |
|---|---|---|---|---|---|---|---|---|

| Mem_id | Contact | Membership | Month | Status | Feezdata | PaidTax | Fee | Total |
|---|---|---|---|---|---|---|---|---|

## ER DIAGRAME OF GYM MANAGEMENT SYSTEM



# CHAPTER - 4

## Test cases:

Software testing is a critical element of software quality assurance and represents the ultimate review of specification, design and coding. Testing presents an interesting of a system using various test data. Preparation of the test data plays a vital role in the system testing. After preparation the test data, the system under study is tested those test data. Errors were found and corrected by using the following testing steps and corrections are recorded for future it is already for implementation. references. Thus, series of testing is performed on the system before it is already for implementation.

## System Testing:

Software testing is a critical element of software quality assurance and represents the ultimate review of specifications, design and coding. The testing phase involves the testing of system using various test data; Preparation of test data plays a vital role in the system testing. After preparation the test data, the system understudy is tested.Those test data, errors were found and corrected by following testing steps and corrections are recorded for future references. Thus, a series testing is performed on the system before it is ready for implementation.

The various types of testing on the system are:

- Unit testing
- Integrated testing
- Validation testing
- Output testing
- User acceptance testing

## Unit testing

Unit testing focuses on verification effort on the smallest unit of software design module. Using the unit test plans. Prepared in the design phase of the system as a guide, important control paths are tested to uncover errors within the boundary of the modules. The interfaces of each of the modules under consideration are also tested. Boundary conditions were checked. All independent paths were exercised to ensure that all statements in the module are executed at least once and all error-handling paths were tested. Each unit was thoroughly tested to check if it might fall in any possible situation. This testing was carried out during the programming itself. At the end of this testing phase, each unit was found to be working satisfactorily, as regarded to the expected out from the module.

## Integration Testing

Data can be across an interface one module can have an adverse effect on another's sub function, when combined may not produce the desired major function; global data structures can present problems. Integration testing is a symmetric technique for constructing tests to uncover errors associated with the interface. All modules are combined in this testing step. Then the entire program was tested as a whole.

## Validation Testing

At the culmination of integration testing, software is completely assembled as a package. Interfacing errors have been uncovered and corrected and final series of software test-validation testing begins. Validation testing can be defined in many ways, but a simple definition is that validation succeeds when the software functions in manner that is reasonably expected by the consumer.

Software validation is achieved through a series of black box tests that demonstrate conformity requirement. After validation test has been conducted, one of two conditions exists.

- The function or performance characteristics confirm to specification that are accepted.
- A validation from specification is uncovered and a deficiency created.

Deviation or errors discovered at this step in this project is corrected prior to completion of the project with the help of user by negotiating to establish a method for resolving deficiencies. Thus the proposed system under consideration has been tested by using validation testing and found to be working satisfactorily.

## Output Testing

After performing the validation testing, the next step is output testing of the proposed system, since a system is useful if it does not produce the required output in the specific format required by them tests the output generator displayed on the system under consideration. Here the output is considered in two ways: - one is on screen and the other is printed format. The output format on the screen is found to be correct as the format was designed in the system design phase according to the user needs. As far as hardcopies are considered it goes in terms with the use requirement. Hence output testing does not result any correction in the system.

## User Acceptance Testing

User acceptance of the system is a key factor for success of any system. The system under consideration is tested for use reacceptance by constantly keeping in touch with prospective system

# Normalization and De Normalization

## Normalization

Database Normalization is a technique of organizing the data in the database. Normalization is a systematic approach of decomposing tables to eliminate data redundancy(repetition) and undesirable characteristics like Insertion, Update and Deletion Anomalies. It is a multi-step process that puts data into tabular form, removing duplicated data from the relation tables.

Normalization is used for mainly two purposes, Eliminating redundant(useless) data. Ensuring data dependencies make sense i.e. data is logically stored.

1. **Update anomaly**: In the above table we have two rows for employee Rick as he belongs to two departments of the company. If we want to update the address of Rick then we have to update the same in two rows or the data will become inconsistent. If somehow, the correct address gets updated in one department but not in other then as per the database, Rick would be having two different addresses, which is not correct and would lead to inconsistent data.

2. **Insert anomaly**: Suppose a new employee joins the company, who is under training and currently not assigned to any department then we would not be able to insert the data into the table if emp_dept field doesn’t allow nulls.

3. **Delete anomaly**: Suppose, if at a point of time the company closes the department D890 then deleting the rows that are having emp_dept as D890 would also delete the information of employee Maggie since she is assigned only to this department.

## Denormalization

**Denormalization** is a strategy used on a previously-normalized database to increase performance. In computing, denormalization is the process of trying to improve the read performance of a database, at the expense of losing some write performance, by adding redundant copies of data or by grouping data. It is often motivated by performance or scalability in relational database software needing to carry out very large numbers of read operations. Denormalization differs from the unnormalized form in that denormalization benefits can only be fully realized on a data model that is otherwise normalized.

## First Normal Form (1NF)

For a table to be in the First Normal Form, it should follow the following 4 rules:

1. It should only have single(atomic) valued attributes/columns. 2. Values stored in a column should be of the same domain
3. All the columns in a table should have unique names.
4. And the order in which data is stored, does not matter.

## Second Normal Form (2NF)

For a table to be in the Second Normal Form,

1. It should be in the First Normal form.
2. And, it should not have Partial Dependency.

## Third Normal Form (3NF)

A table is said to be in the Third Normal Form when,

1. It is in the Second Normal form.
2. And, it doesn't have Transitive Dependency.

## Boyce and Codd Normal Form (BCNF)

**Boyce and Codd Normal Form** is a higher version of the Third Normal form. following conditions must be satisfied:

1. R must be in 3rd Normal Form
2. and, for each functional dependency ( $X \rightarrow Y$ ), X should be a super Key.

# CHAPTER - 5

## OUTPUT SNAPSHOTS

### 5.1 Admin login

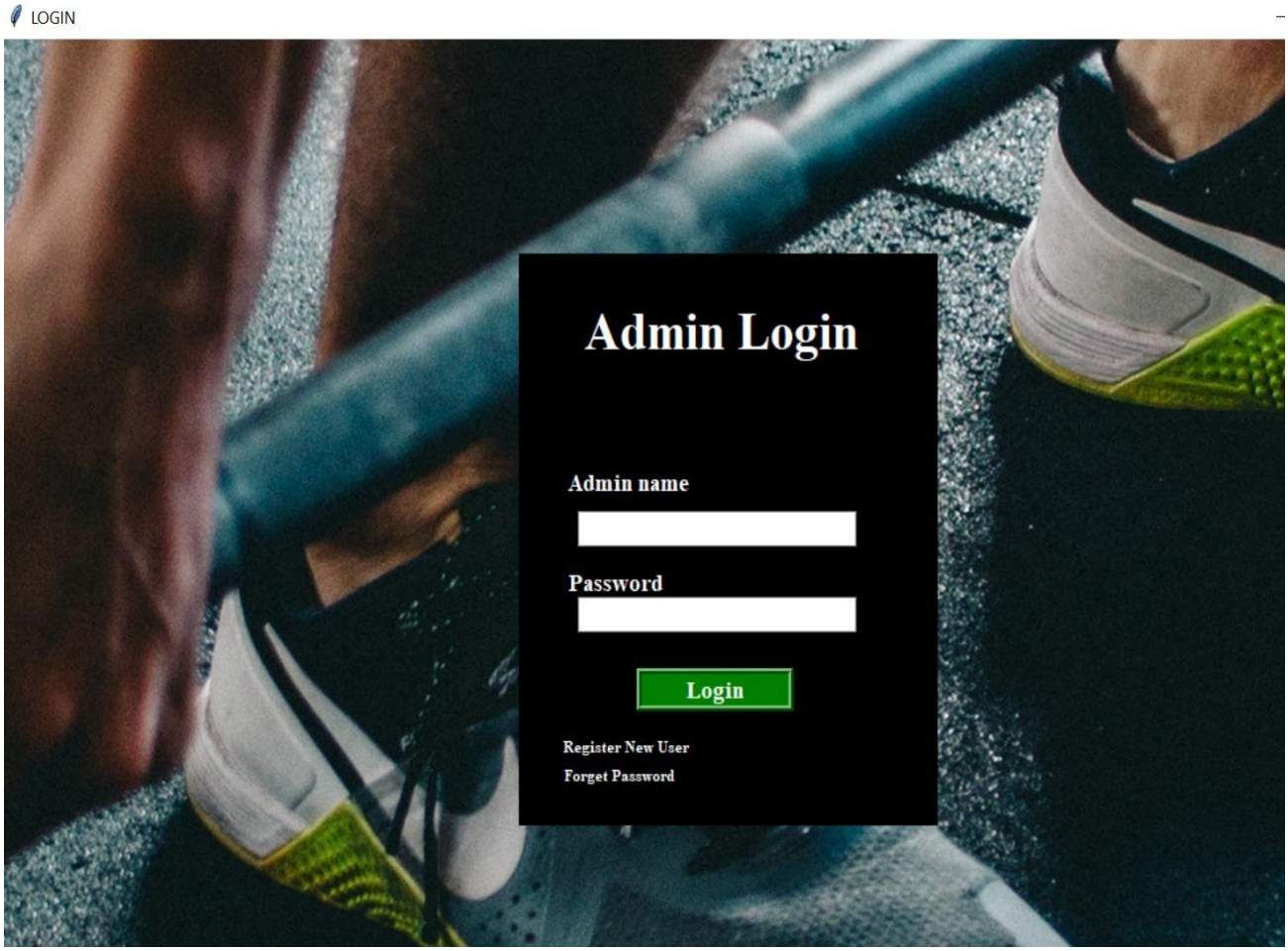



**Figure 5.1**

## 5.2 New Registration

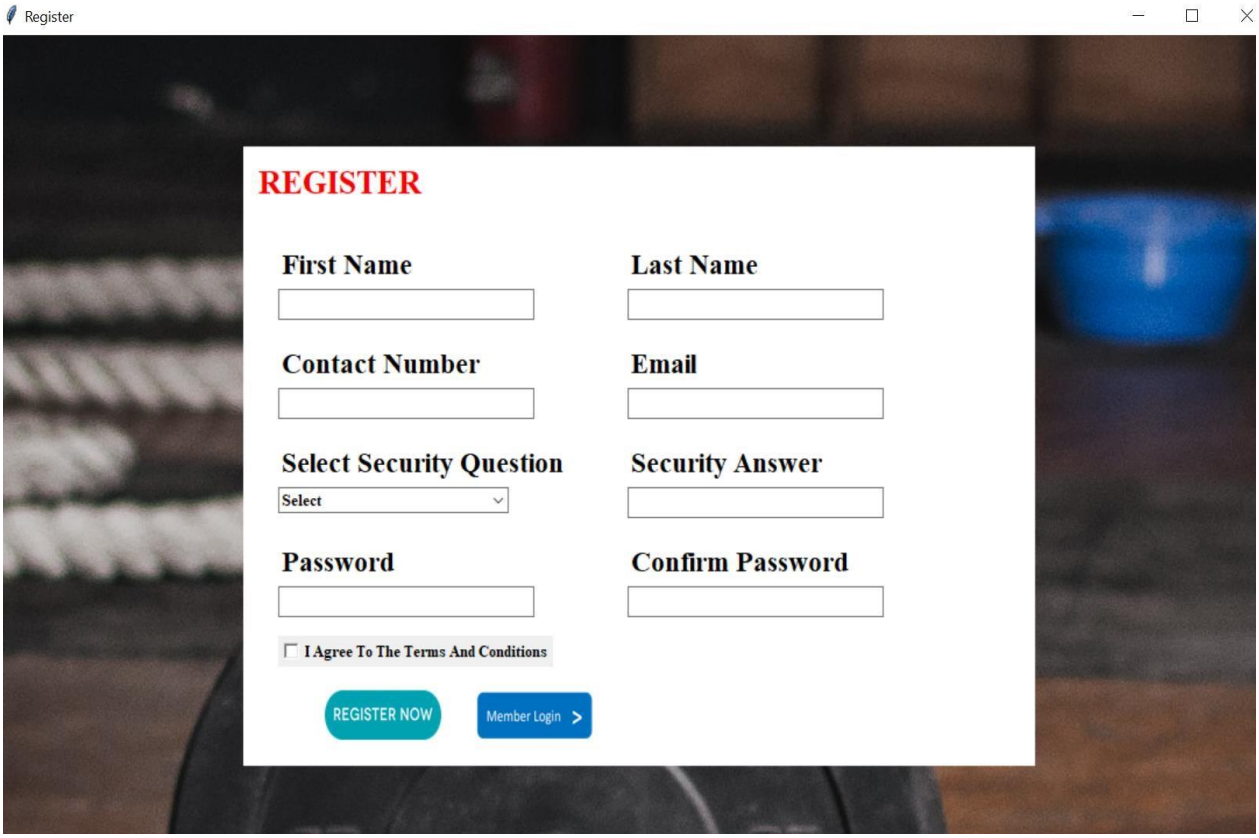



**Fig 5.2**

## 5.3 Home page

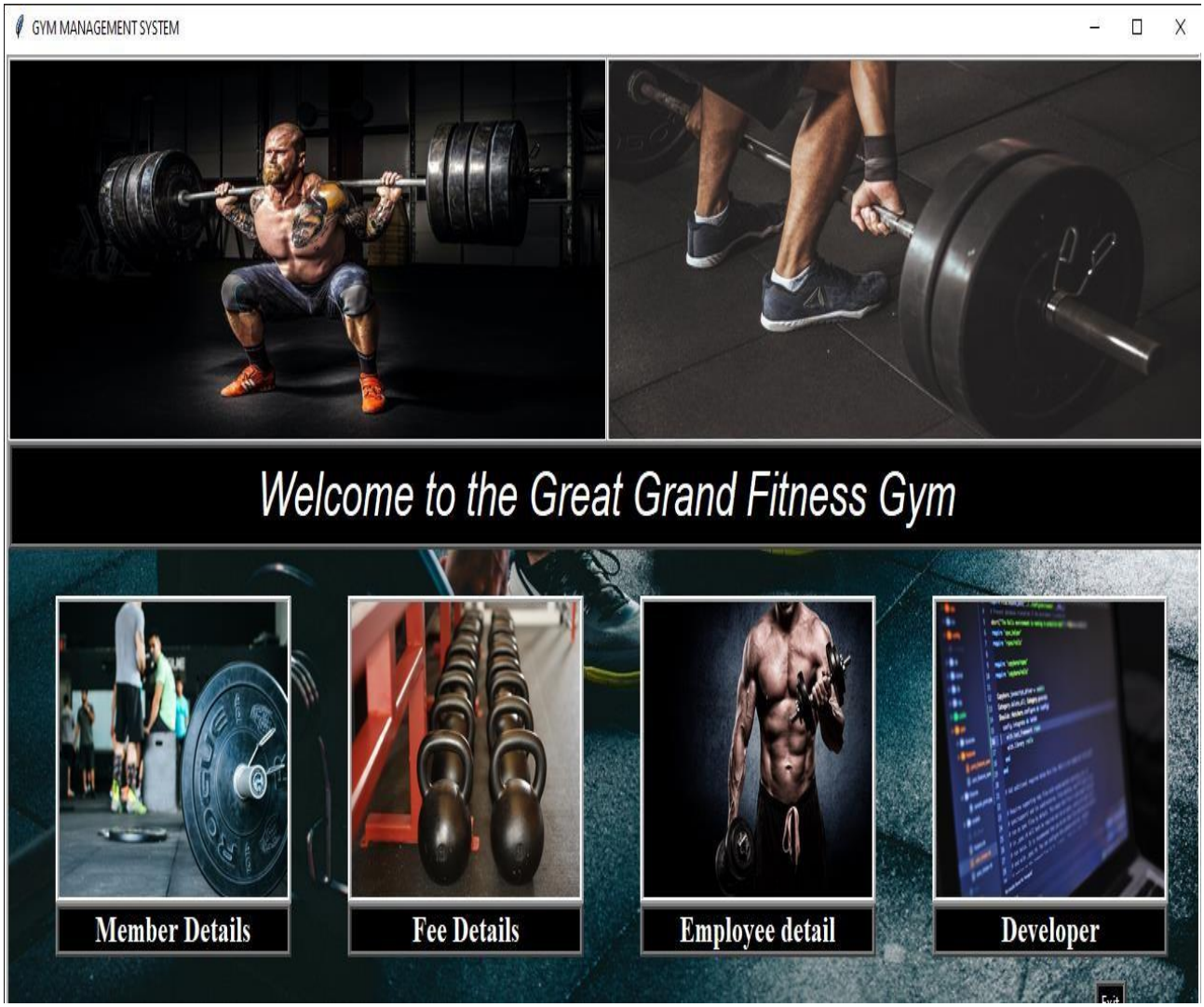



**Fig 5.3**

## 5.4 Employee details

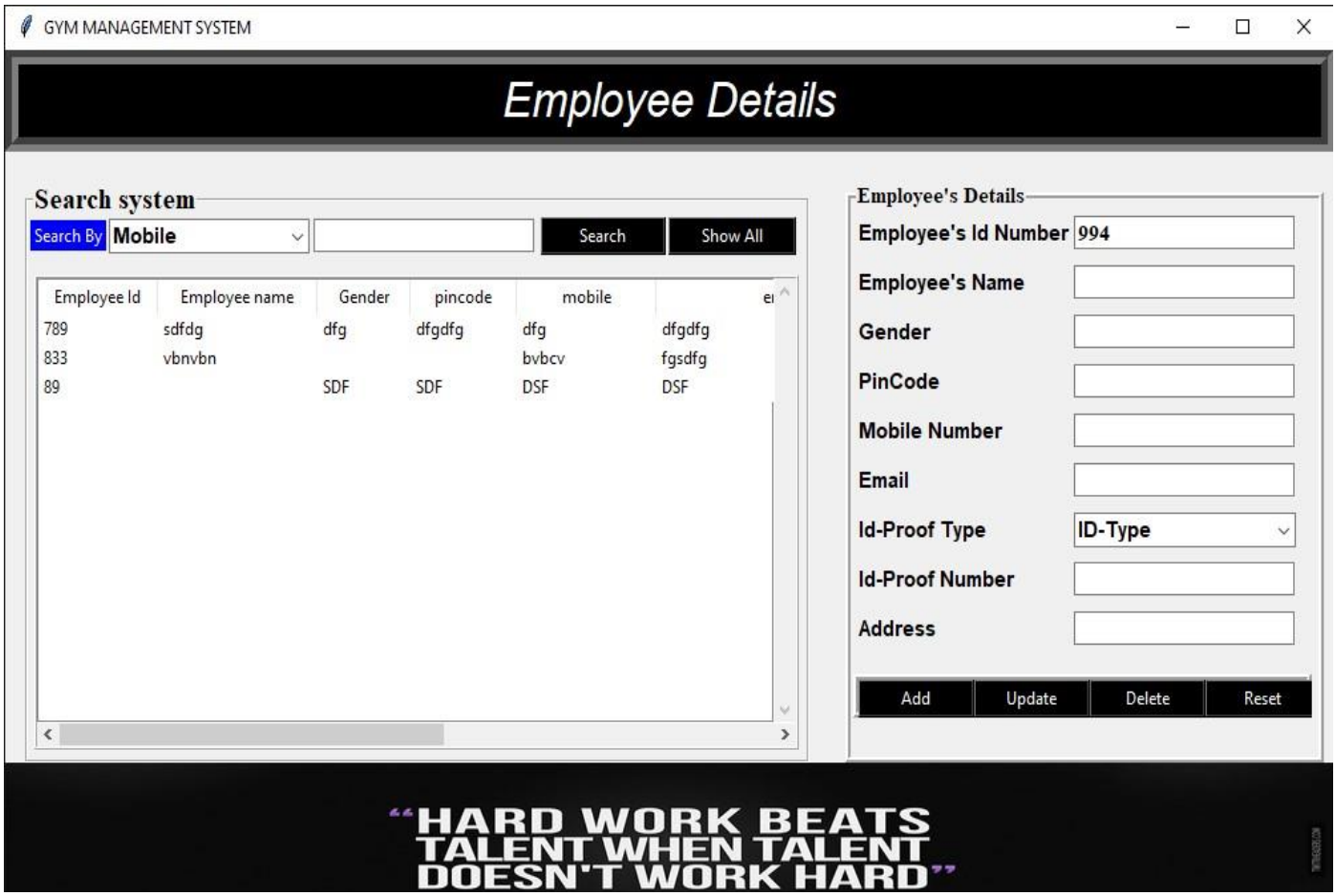



**Fig 5.4**

## 5.5 Members details

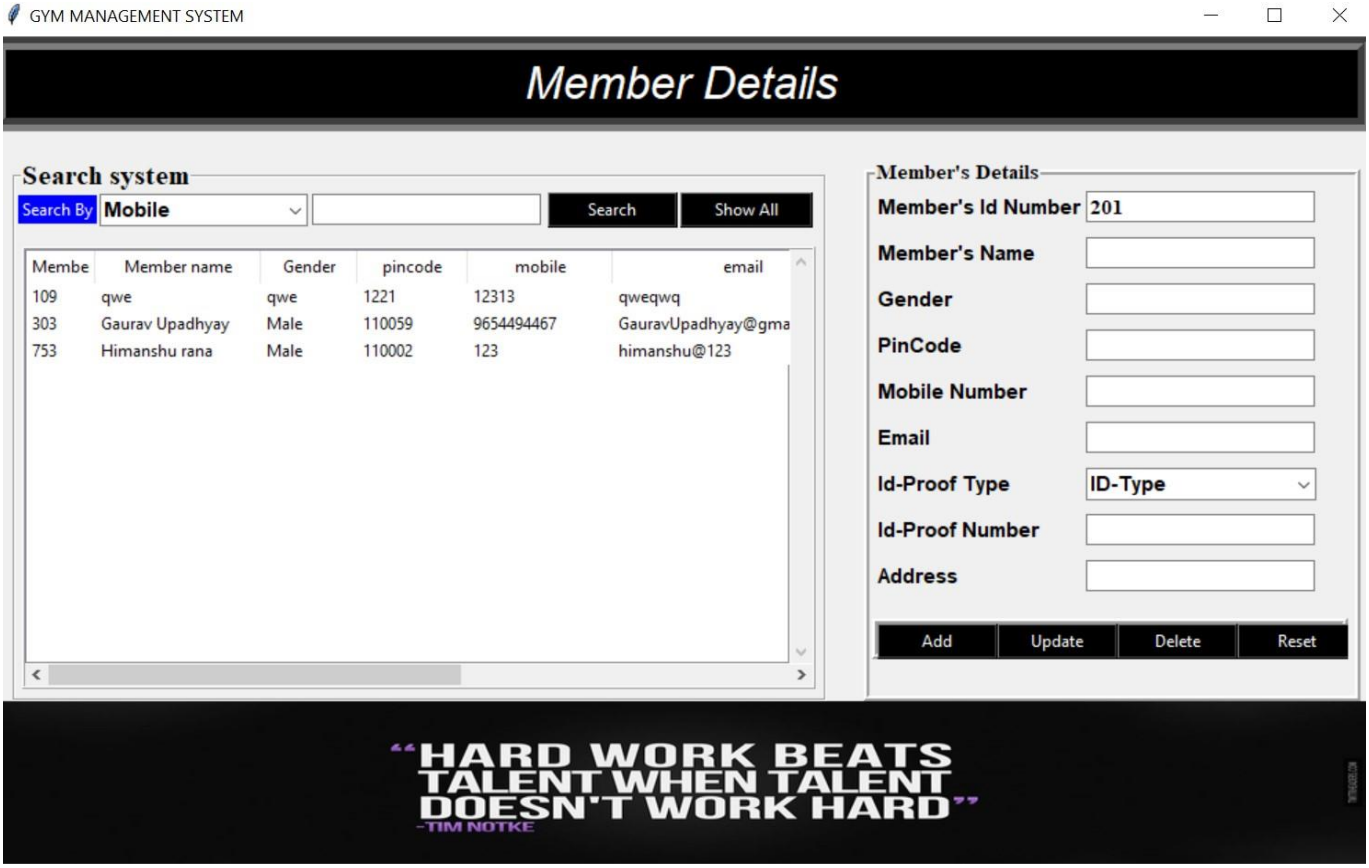



**FIG 5.5**

## 5.6 Member fees details

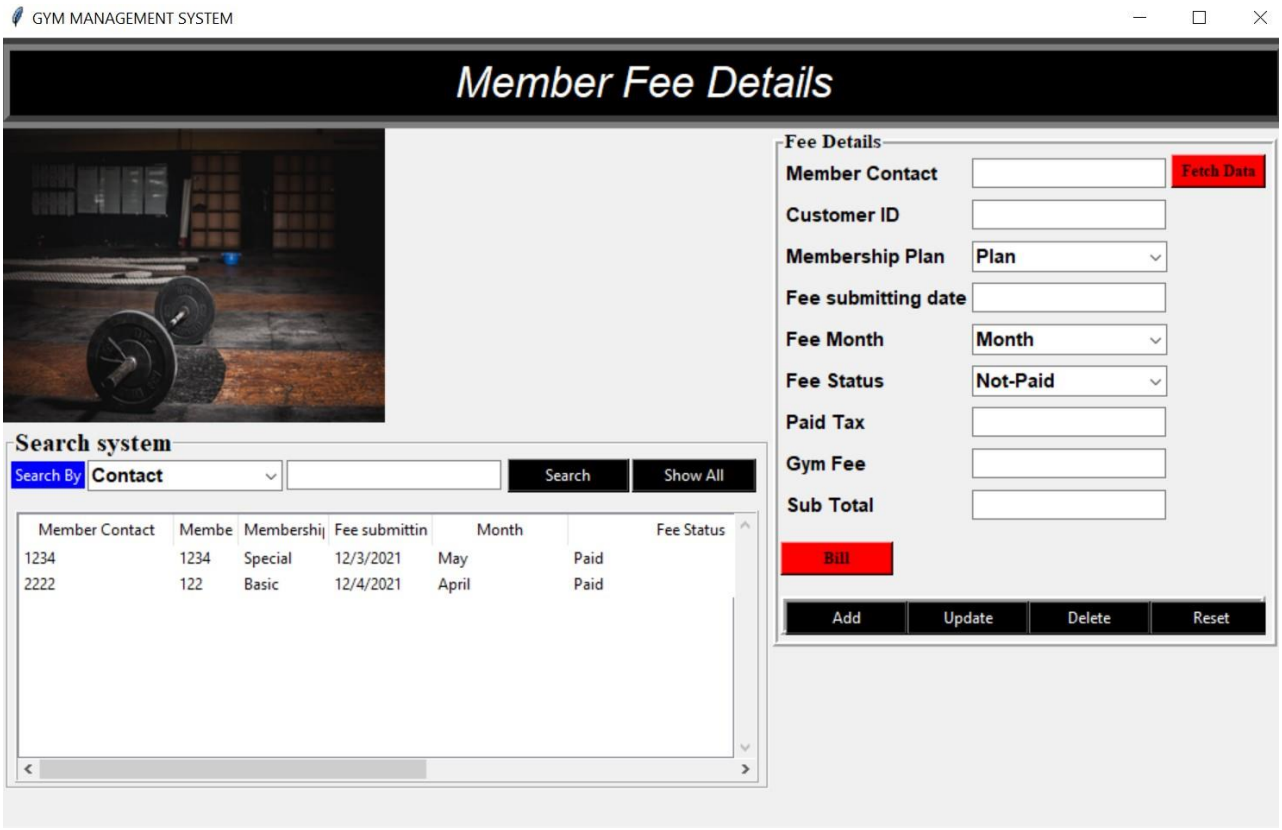



**Fig 5.6**

# CHAPTER – 6

## SYSTEM REQUIREMENTS

**Software and requirements**:

- Operating system – Windows XP or higher
- Python 2.x/3.x Tkinter (front-end)
- SQL server - MySQL (back-end)

**Hardware requirements**:

- RAM – 2GB or more
- Processor – Intel Pentium 4 or higher
- Hard disk – 40GB or higher
- External devices – Not required

# Installation

The Code is written in Python 3.7.0. If you don't have Python installed you can find it here. If you are using a lower version of Python, you can upgrade using the pip package, ensuring you have the latest version of pip. To install the required packages and libraries, run this command in the project directory after cloning the repository: Use the package manager pip to install requirements file.

- pip install -r requirements.txt
- python manage.py makemigrations
- python manage.py migrate
- python manage.py createsuperuser
- python manage.py runserver

# CHAPTER – 7

## FUTURE SCOPE

- Real time chat BOT option for members and trainers, so that members can directly enquiry theirs trainer on any time through the chat BOT.
- Automated Fitness suggestion by enquiring the condition of the health.
- Video conversation option for trainer and members.
- Online payment through face recognition.
- Barcode generation for membership card and using this, members can take entry to gym.
- Finger print matching for taking entry to gym

# CHAPTER 8

## CONCLUSION

While developing this project we have learnt a lot about python ,MySQL and working with database management, we have also learnt how to make the application user-friendly (easy to use and handle) by hiding the complicated parts of it from the users.

During the development process, we studied carefully and understood the criteria for making a software more demanding, we also realized the importance of maintaining a minimal margin for errors.Identification of the drawback of the existing system leads to the designing of computerized system that will be compatible to the existing system which is more user friendly and more GUI oriented.

To conclude the description about the project, developed using PYTHON(Tkinter) and SQLSERVER is based on the requirement specification of the user and the analysis of the existing system , with flexibility for future enhancement

# REFERENCES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