CHAPTER 1

INTRODUCTION

1.1 GENERAL INTRODUCTION

In the past years, the world has expressed a sustained interest in fitness as an essential part of overall health and wellness. People all over the world are making changes, both small and large, to eat healthier, exercise more, and improve their mental health. This is a cloud based Integrated software for complete Health Club management with features like

Membership Management, Marketing Management, Reservations Management, Automatic Attendance Tracking, Event Management, virtual trainer and helpdesk, Class Management and auto class scheduling.

This project aims to automate health club management system, for example the admission process in gyms and selecting a trainer is difficult. Sometimes it is difficult to get a desired slot timing. Being healthy is the first thing to be kept in mind because most of the time our attitude depends on how we feel. It is hard to get admission in health club when slots are full. This health club management system will help to overcome such problems by booking the desired slot online and pay fees by electronic money transfer. In this health club system, there is 3 entity namely, Admin, Member, and Trainer. Admin can login using credentials. Admin can manage packages by adding cost, discount and deleting old packages. Admin can manage member details by adding, updating and deleting. Admin can view the package details of an individual member. Admin can also view the member's attendance taken by the trainer. Members can login using credentials. They can view their profile and list of trainers. They can also view the package and payment details. Attendance management is done using AI, it works with both face recognition and biometric system. This system marks

attendance from multiple locations with a cloud stored database. They can make payments via card details. A trainer can log in using credentials. They get notified by upcoming classes that have been already scheduled for the members .It also manages the staff operations in the health club with ease. Dynamic employee scheduling, commission programs, and notifications for trainers and class instructors to help keep employees organized

A pre-trained chatbot which can handle all day today activities with clients and will guide users through different workouts and also provide a suitable diet chart to be followed as per the selected fitness goal. The chatbot will also present different exercise routines based on the intensity level the user chooses and is comfortable with. All general enquiries related to all branches is also possible through this system Can book and enquire about available slots for special activities like pool, yoga etc.

Reception desk will have a club kiosk capable of handling club membership management and registration. A great solution for clubs with 24/7 access controls for client acquisition at any time with the help of virtual assistant. Members can operate the kiosk either by using text or voice, according to their preferences.

Automated Notification system to staff and clients with this automation module, admin can communicate special offers, class schedules, payment confirmations, contract due dates, and can automate the sign-up process via the client portal for more member convenience.

1.2 GOAL OF THE PROJECT

The main goal of this project is to provide an overall solution which could cover most of the health club management that are done manually at present, and improve the efficiency and make it automated with the help of AI.

- Virtual training in the club according to the level of the members
- Attendance tracking using biometrics and face detection
- Online reservation
- Automated Notification system to staff and clients about the scheduling
- Reception desk will have a club kiosk capable of handling club membership management and registration(voice bot, chat bot)
- Payment automation and giving payment alerts to the client
- 24/7 access controls for client acquisition at any time with the help of virtual assistant.

CHAPTER 2

2. LITERATURE STUDY

2.1 STUDY OF SIMILAR WORK

2.1.1 Existing System

Most of the existing operations in health clubs are manual now. No proper integrated ERP system is available for health clubs with complete control over asset management, member portal , chatbot, booking, attendance, forecast reports etc. Besides they don't have any control over their customer details. Most of the health clubs even don't have a systematic process flow. Some available features of existing software's are listed below.

Gym software should also enforce key fee structures such as no-show penalties, late fees and costs for cancellations. An important component of existing management software is the ability to create contracts and waivers digitally. Paper documents are a thing of the past; digital documents help your gym to streamline signups and legal considerations. Management software should link seamlessly with your website and online presence. Online sales portal allows interested parties to fill application form anytime 24 hours a day, 7 days a week using Google doc's .Performance tracking allows members to stay in touch with their goals and chart progress over time. Athletes can have immediate and continual access to their progress, from assessing past performance to anticipating future results. Optimal functionality in health club management software is key to running health club and its required operations successfully. It should offer a comprehensive solution for gym owners as well as the athletes and coaches who interact with it.

2.1.2 Drawbacks of Existing system

No virtual help desk available in the existing system. If it has a virtual help desk customers will get round the clock support and marketing processes become more efficient and simple. No face recognition/biometric integrated automatic attendance management system is available in the current software.

Virtual trainers are also not available in existing systems. Virtual training facility with a pre-trained chatbot might give 24/7 guidance to customers. Retention intelligence is not available for predicting fresh insights on how many gym members may be expected to leave a Health club at any given time.

Auto guided customer registration is also not available, this might attract more users and make admissions easier. Facility for recurrent payment reminders and auto payment collection link generation and notification is not available in existing softwares

CHAPTER 3

OVERALL DESCRIPTION

3.1 PROPOSED SYSTEM

This is a cloud based Integrated software for complete Health Club management with features like Membership Management, Marketing Management, Reservations Management, Automatic Attendance Tracking, Event Management, virtual trainer and helpdesk, Class Management and auto class scheduling. Virtual training is enabled using a pre-trained chatbot which can handle all day today activities with clients and will guide users through different workouts and also provide a suitable diet chart to be followed as per the selected fitness goal. The chatbot will also present different exercise routines based on the intensity level the user chooses and is comfortable with. Virtual training and help desk is a major feature of this application. This is a pre trained chatbot/voice bot which can handle all day today enquiries and can give guidance for users. Bot will assist users to create personalized meal plans based on their food preferences, budget, and schedule. Assess diet and nutritional goals with the help of an online calorie calculator. Chatbot will create personalised meal plan for each user in seconds. People joining the gym often face the issue of being unacquainted with the types of equipment and various exercises they should be doing to achieve the desired goal. Be it losing fat, building muscle or improving endurance, every fitness goal requires a different set of workout plan and nutrition diet to be followed. The chatbot can guide users through different workouts and also provide a suitable diet chart to be followed as per the selected fitness goal. The chatbot can also present different exercise routines based on the intensity level the user chooses and is comfortable with. The user can also choose from different exercise routines based on different target areas like arms, legs, etc. Images, gifs, and videos can also be used in the chatbot conversation to clearly illustrate and explain the exercises to the users. Virtual helpdesk will help to generate more leads by collecting health club visitors' emails or phone

numbers. All general enquiries related to all branches is also possible through this system. Can book and enquire about available slots for special activities like pool, yoga etc. More productivity, more guest satisfaction, more direct sales are the key features. Revenue streams are automatic and reliable with recurring payments set up for all fitness membership dues. Members can log in to check their dues and can select option to make payment using online. Such process removes manual intervention and reduces errors of fee collection management. Members can view historical fee payments and can download receipts whenever required. With the automation module, admin can communicate special offers, class schedules, payment confirmations, contract due dates, and can automate the sign-up process via the client portal for more member convenience. Reception desk will have a club kiosk capable of handling club membership management and registration. A great solution for clubs with 24/7 access controls for client acquisition at any time with the help of virtual assistant. Forecasting reports enable salespeople to get better visibility over their pipelines, qualify leads more accurately, and see how close they are to hitting their targets. Sales managers can use reports to motivate and manage their people.

Automatic Attendance Tracking system works with both attendance management using face recognition and biometric system. This system marks attendance from multiple locations with a cloud stored database. Integrate biometrics and face identification attendance system with software and control access of members. Can maximize staff efficiency instead of arranging one appointment after another with the gym members and trainers. At the same time empower members to book their own appointments at fingertips and the trainers to manage their schedules with Book Appointment Feature. Manage the staff operations in the health club with ease. Dynamic employee scheduling, commission programs, and notifications for trainers and class instructors to help keep employees organized.

3.2 FEATURES OF PROPOSED SYSTEM

- 24/7 access controls for client acquisition at any time with the help of virtual assistant.
- Virtual training is available for members of the health club
- Payment automation
- Automated attendance of the members are tracked using biometric and face recognition
- Club kiosk can be communicated through voice bot and chat bot
- Staff and members get automated notification about the Scheduling
- Slot can be reserved online according to members choice
- Time tracking of resources can be done eg: treadmill
- Staff schedule management according to scheduled
- Chatbot will also present different exercise routines based on the intensity level the user chooses and is comfortable with.

3.3 FUNCTIONS OF PROPOSED SYSTEM

Virtual training is enabled using a pre-trained chatbot which can handle all day today activities with clients and will guide users through different workouts and also provide a suitable diet chart to be followed as per the selected fitness goal. The chatbot will also present different exercise routines based on the intensity level the user chooses and is comfortable with.

This is a cloud based Integrated software for complete Health Club management with features like Membership Management, Marketing Management, Reservations Management, Automatic Attendance Tracking, Event Management, virtual trainer and helpdesk, Class Management and auto class scheduling. . It is hard to get admission in health club when slots are full. This health club management system will help to overcome such problems by booking the desired slot online and pay fees by electronic money transfer.

Reception desk will have a club kiosk capable of handling club membership management and registration. A great solution for clubs with 24/7 access controls for client acquisition at any time with the help of virtual assistant. Attendance is managed using biometric and face recognition.

This Business Intelligence module is powered by machine learning algorithms. This will deliver fresh insights on how many gym members may be expected to leave a Health club at any given time. This data is based on club member actions taken, their preferences, and how similar members behave.

Automated notification is send to each members about the schedule and accordingly staff will also get the notification about the schedules. Available free time slot will be shown for better online reservation.

Revenue streams are automatic and reliable with recurring payments set up for all fitness membership dues. Automatically alerts the members of the health club about the payment.

Manage the staff operations in the health club with ease. Dynamic employee scheduling, commission programs, and notifications for trainers and class instructors to help keep employees organized

3.4 REQUIREMENT SPECIFICATIONS

System analyst tasks to a variety of persons to gather details about the business process and their opinions of why things happen as they do and their ideas for changing the process. These can be done through questionnaires, details investigation, observation, collection of samples etc. As the details are collected, the analyst study the requirements data to identify the features the new system should have, including both the information the system produce and operational features such as processing controls, response times, and input output methods.

Requirement specification simply means, “Figuring out what to make before you make it”. It determines what people need before you start developing a product for them. Requirement definition is the activity of translating the information gathered in to a document that defines a set of requirements. These should accurately reflect what consumer wants. It is an abstract description of the services that the system should provide and the constraints under the system must operate. This document must be written for that the end user and the stake holder can understand it.

The notations used for requirements definition should be based on natural languages, forms and simple intuitive diagrams. The requirements fall into two categories: functional requirements and non-functional requirements.

The requirements of specification of the proposed system are as follows:

- Minimum time needed for various processing
- Better service

- Faster response time

- User friendly

3.5 FEASIBILITY ANALYSIS

The prime objective of feasibility study is to ensure that the problem is worth to be solved. At the stage a cost benefit is performed to assertion that the benefit from the system will over rule association with the whole analysis, design and development of the new system. As important outcome of the preliminary investigation determining whether the system required is feasible.

Steps in Feasibility Analysis

Feasibility Analysis involves eight steps:

- Form a project team and appoint a project leader.

- Prepare a system flow chart

- Enumerate potential candidate system.

- Describe and identify characteristics of candidate systems.

- Describe and evaluate performance and cost effectiveness of each candidate systems.

- Weight system performance and cost data.

- Select the best candidate system.

Prepare and report final project directive and management

- Technical Feasibility
- Operational Feasibility
- Economic Feasibility
- Behavioural Feasibility

3.5.1 Technical Feasibility

The main objective of feasibility study is to test the technical, social and economic feasibility of developing a system. Investing the existing system in the area under investigation and generating ideas about the new system does this. Feasibility study has been done to gather required information. Data was gathered and checked for completeness and accuracy. Analysing the data involved identification of the components of the system and their interrelationship and identified the strength and weakness of the system.

This "Automated health club management system" is developed by using Python and MySQL. So the technical part of this project is very secure. Maintainability and productivity is also high. So " Automated health club management system" is technically feasible.

3.5.2 Operational Feasibility

"Automated health club management system" there is no difficulty in implementing the system. The proposed system is effective, user friendly and functionally. The user of the system must be completely aware of the internal working of the system so that the users will not face any problems running the system. System design provides the procedural details necessary for implementing the system recommended in the feasibility study.

3.5.3 Economical Feasibility

Economic is used for evaluating the effectiveness of the system. This project is economically feasible because the project can be completed in few months. The cost and the benefits associated with the candidate system was considered. This feasibility checks whether the system can be developed with the available funds.

The “Automated health club management system " does not require enormous amount of money to be developed. This can be done economically if planned judicially, so it is economically feasible. The cost of project depends upon the number of requirements that are used required.

3.5.4 Behavioural Feasibility

The behavioural feasibility depends upon whether the system performed in the expected way or not. The system proposal according to it workability, impact on organization, ability to meet user’s need and effective use of resources.
"Automated health club management system" is behaviourally feasible because it overcome the problem faced by the factories it uses the resources effectively and is very user friendly and also it satisfies the user needs.

CHAPTER 4

OPERATING ENVIRONMENT

4.1 HARDWARE REQUIREMENTS

Processor : Intel i5 6th gen

RAM : 8 GB ddr

Hard Disk : 256 GB SSD

Drives : CD-ROM, C-type port, USB 3.1*2 port

Display Size : 15” Color Monitor

Screen Resolution : 1920*1080 Pixel

Keyboard : Wireless Enabled Logitech Keyboard

Mouse : Wireless Enabled Logitech Mouse

Monitor : Touch Capacity LED Monitor

Dedicated Graphics Card : Nvidia GeForce GTX 1050 4GB DDR5

Camera : 8 Megapixel Full HD 1.8f lens

Extra : Wi-Fi Adapter, Bluetooth Adapter

4.2 SOFTWARE REQUIREMENTS

Operating System : Windows/Ubuntu

Programming Language : Python

IDE	:	Pycharm, Visual Studio Code,Open CV
Scripting Languages	:	HTML, CSS, Javascript
Web Browser	:	Google Chrome, FireFox
Front-End	:	Python , Django
Back-End	:	My SQL

4.3 TOOLS AND PLATFORMS

4.3.1 Python

Python has a design philosophy that emphasizes code readability, notably using significant whitespace. It provides constructs that enable clear programming on both small and large scales. Python is an interpreter, object-oriented, high-level programming language with dynamic semantics. Its high-level built in data structures, combined with dynamic typing and dynamic binding; make it very attractive for Rapid Application Development, as well as for use as a scripting or glue language to connect existing components together. Python is simple, easy to learn syntax emphasizes readability and therefore reduces the cost of program maintenance. Python supports modules and packages, which encourages program modularity and code reuse.

The python interpreter and the extensive standard library are available in source or binary form without charge for all major platforms, and can be freely distributed.

Python is used in many applications:

- Web and Internet Development
- Scientific and Numeric

- Education

- Desktop GUIs

- Business Applications

Python is mostly preferred for image processing than MATLAB. The scientific Python ecosystem is maturing fast and Python is an appealing alternative, because it's free, open source, and becoming ever more powerful. The common differences between the two tools are:

- Easy programming language: Python was created to be a generic language that is easy to read, while MATLAB started as a matrix manipulation package to which a programming language was added.
- Powerful: It's easier than other languages to transform the ideas into code. Further, Python comes with extensive standard libraries, and has a powerful data types such as lists, sets and dictionaries. These really help to organize the data.

- Portability: Because Python is for free, the code can run everywhere. Further, it works on Windows, Linux, and OSX.

- Class and function definitions: Functions and classes can be defined anywhere. In one file as many functions and classes can be designed.

- Great GUI toolkits: With Python a front-end for the application that looks good and works well can be created. Any of the major GUI toolkits like Wxor Qt. Pyzo comes with PySide (a wrapper for Qt) can be chosen.

What can Python do?

- Python can be used on a server to create web applications.

- Python can be used alongside software to create workflows.

- Python can connect to database systems. It can also read and modify files.

- Python can be used to handle big data and perform complex mathematics.

- Python can be used for rapid prototyping, or for production-ready software development

Why Python?

- Python works on different platforms (Windows, Mac, Linux, Raspberry Pi, etc).
- Python has a simple syntax similar to the English language.

- Python has syntax that allows developers to write programs with fewer lines than some other programming languages.
- Python runs on an interpreter system, meaning that code can be executed as soon as it is written. This means that prototyping can be very quick.

- Python can be treated in a procedural way, an object-orientated way or a functional way.

- The most recent major version of Python is Python 3, which we shall be using in this tutorial. However, Python 2, although not being updated with anything other than security updates, is still quite popular.

Features of Python:

1) Easy to Learn and Use

Python is easy to learn and use. It is developer-friendly and high-level programming language.

2) Expressive Language

Python language is more expressive means that it is more understandable and readable

3) Interpreted Language

Python is an interpreted language i.e. interpreter executes the code line by line at a time. This makes debugging easy and thus suitable for beginners.

4) Cross-platform Language

Python can run equally on different platforms such as Windows, Linux, Unix and Macintosh etc.

So, we can say that Python is a portable language.

5) Free and Open Source

Python language is freely available at official web address. The source-code is also available.

Therefore, it is open source.

6) Object-Oriented Language

Python supports object-oriented language and concepts of classes and objects come into existence.

7) Extensible

It implies that other languages such as C/C++ can be used to compile the code and thus it can be used further in our python code.

8) Large Standard Library

Python has a large and broad library and prvides rich set of module and functions for rapid application development.

9) GUI Programming Support

Graphical user interfaces can be developed using Python.

10) Integrated

- It can be easily integrated with languages like C, C++, JAVA etc.

- In this tutorial Python will be written in a text editor. It is possible to write Python in an Integrated Development Environment, such as Thonny, Pycharm, Netbeans or Eclipse which are particularly useful when managing larger collections of Python files.

Python Syntax compared to other programming languages

- Python was designed for readability, and has some similarities to the English language with influence from mathematics.

- Python uses new lines to complete a command, as opposed to other programming languages which often use semicolons or parentheses.

- Python relies on indentation, using whitespace, to define scope; such as the scope of loops, functions and classes. Other programming languages often use curlybrackets for this purpose.

4.3.2 MySQL

MySQL is the most popular Open Source Relational SQL Database Management System. MySQL is one of the best RDBMS being used for developing various web based software

applications. MySQL is developed, marketed and supported by MySQL AB, which is a Swedish company. This tutorial will give you a quick start to MySQL and make you comfortable with MySQL programming. MySQL is

Released under an open-source license. So you have nothing to pay to use it. MySQL is customizable. The open-source GPL license allows programmers to modify the MySQL software to fit their own specific environments.

Features of MySQL

- Relational Database Management System (RDBMS) - MySQL is a relational database management system.

- Easy to use - It is easy to use. You have to get only the basic knowledge of SQL. You can build and interact with MySQL with only a few simple SQL statements.
- Secure - MySQL consist of a solid data security layer that protects sensitive data from intruders. Passwords are encrypted in MySQL.

- Free to download - MySQL is free to use and you can download it from MySQL official website

- Scalable - MySQL can handle almost any amount of data, up to as much as 50 million rows or more. The default file size limit is about 4 GB. However, you can increase this number to a theoretical limit of 8 TB of data.

4.3.3 Django

Django is a Python-based free and open-source web framework that follows the modeltemplateview (MTV) architectural pattern. It is a high-level Python Web framework that encourages rapid development and clean, pragmatic design. Built by experienced developers, it takes care of much of the hassle of Web development, so you can focus on writing your app without needing to reinvent the wheel.

Why Django ?

A web framework is a collection of modular tools that abstracts away much of the difficulty–and repetition–inherent in web development. For example, most websites need the same basic functionality: the ability to connect to a database, set URL routes, display content on a page, handle security properly, and so on. Rather than recreate all of this from scratch, programmers over the years have created web frameworks in all the major programming languages: Django and Flask in Python, Rails in Ruby, and Express in JavaScript among many, many others.

Django inherited Python's "batteries-included" approach and includes out-of-the box support for common tasks in web development:

- user authentication
- templates, routes, and views
- admin interface
- robust security
- support for multiple database backends
- and much more.

Features of Django

- Ridiculously fast - Django was designed to help developers take applications from concept to completion as quickly as possible.
- Reassuringly secure - Django takes security seriously and helps developers avoid many common security mistakes.
- Exceedingly scalable - Some of the busiest sites on the Web leverage Django's ability to quickly and flexibly scale.
- Framework Support − Django has built-in support for Ajax, RSS, Caching and various other frameworks.

- Administration GUI − Django provides a nice ready-to-use user interface for administrative activities.
- Development Environment − Django comes with a lightweight web server to facilitate end-to-end application development and testing.

4.3.4 Open CV

Open CV (Open Source Computer Vision Library) is an open source computer vision and machine learning software library. Open CV was built to provide a common infrastructure for computer vision applications and to accelerate the use of machine perception in the commercial products. The library has more than 2500 optimized algorithms, which includes a comprehensive set of both classic and state-of-the-art computer vision and machine learning algorithms. These algorithms can be used to detect and recognize faces, identify objects. classify human actions in videos, track camera movements, track moving objects, extract 3D models of objects, produce 3D point clouds from stereo cameras, stitch images

together to produce a high resolution image of an entire scene, find similar images from an image database, remove red eyes from images taken using flash, follow eye movements, recognize scenery and establish markers to overlay it with augmented reality, etc. Open CV has more than 47 thousand people of user community and estimated number of downloads exceeding 14 million. It has C ++, Python, Java and MATLAB interfaces and supports Windows, Linux. Android and Mac OS. Open CV leans mostly towards real-time vision applications and takes advantage of MMX and SSE instructions when available. A full-featured CUDA and Open CL interfaces are being actively developed right now. There are over 500 algorithms and about 10 times as many functions that compose or support those algorithms. Open CV is written natively in C++ and has a template interface that works seamlessly with STL containers.

28

4.3.5 Keras

Keras is a deep learning API written in Python, running on top of the machine learning platform TensorFlow. It was developed with a focus on enabling fast experimentation. Being able to go from idea to result as fast as possible is key to doing good research. Keras is a powerful and easy-to-use free open source Python library for developing and evaluating deep learning models. Keras contains numerous implementations of commonly used neural-network building blocks such as layers, objectives, activation functions, optimizers, and a host of tools to make working with image and text data easier to simplify the coding necessary for writing deep neural network code.

4.3.5 Sklearn

Scikit-learn (Sklearn) is the most useful and robust library for machine learning in Python. It provides a selection of efficient tools for machine learning and statistical modeling

including classification, regression, clustering and dimensionality reduction via a consistence interface in Python. This library, which is largely written in Python, is built upon NumPy,SciPy and Matplotlib. Extensions or modules for SciPy care conventionally named SciKits. As such, the module provides learning algorithms and is named scikit-learn. The vision for the library is a level of robustness and support required for use in production systems. This means a deep focus on concerns such as ease of use, code quality, collaboration, documentation, and performance. Although the interface is Python, c-libraries are leverage for performance such as NumPy for arrays and matrix operations, LAPACK, LibSVM and the careful use of Python.

CHAPTER 5

DESIGN

5.1 SYSTEM DESIGN

System design is a reduction of an entire system by studying the various operations performed and their relationships within the system and the requirements of its success. One aspect of design is defining the boundaries of the system and determining whether or not the candidate system should consider other related system. System can be defined, as an orderly grouping of interdependent components can be simple or complex.

The idea of the systems has been most practical and necessary in computerizing the interrelationships and integration of operations, especially when using computers. Thus it's a way of thinking organizations and their problems. An organization consists of several interrelated and interlocking components.

The most creative and challenging phase of the system life cycle is system design. The term design describes a final system and the process by which it is developed .It refers to the technical specifications that will be applied in implementing the candidate system .It also includes the construction of programs and program testing.

The first step in the system design is to determine how the output is to be produced and in what format. Samples of the output and the inputs are also presented .In the second step, input data and master files are to be designed to meet requirement of the proposed output .The processing phase's system's objectives and complete documentation.

Finally details related to justification of the system and an estimate of the impact of the candidate system on the user and organization are documented and evaluated by management as a step towards implementation. The final report prior to the implementation phase includes procedure flow chart, record lay outs, and a workable plan for implementing the KDMS system.

System design has two phases:

- ❖ Logical
- ❖ Physical

The logical design reviews the present physical system, prepares the input and output and also prepares a logical design walk- through .We have to deal with how to take entries required and whether and how to process the user data. Also we have to deal with how to present the data in an informative and appealing format .This design also involves the methodology to store, modify and retrieve data from the data base as per the requirement. Physical design maps out the details of the physical system, plans the system implementation, devices a test and implementation plan and new hardware and software. We have to decide how and where to store the input data and how to process it so as to present it to the user in an easy, informative and attractive manner .A major step in the design is the preparation of input and output report in a form acceptable to the user .In this a data entry operator can feed the relevant details asked by the system for a particular task as input.

Module Description

ADMINISTRATION (Admin) module

Admin module is the important module which can access all modules in the integrated health club management system and handles staff management, user management, equipment management and billing. Admin can add new staff to system by entering their details such as name, block, address, email, phone number, date of birth and salary. Details of existing staff can be edited whenever necessary. By monitoring the existing staff, inefficient staff can be deleted. Admin can block the non-productive staff or unblock productive staff from the health club management system. When a registration request arrives to the system from a new user admin can either approve or reject those request. Invoices can be manually send

or view by the admin and can also auto schedule invoices for the users. Using staff id, admin can view the attendance of the staff and the details of login time, logout time, total hours and salary. Admin can view attendance of each user and their class schedules from the admin panel. Peak time (rush time of the health club management system) and normal time of the system can viewed. Admin can send offers regarding discount/special programs and notifications to all or selected users in the health club management system. New equipment's can be added with their name, type and building id and can view existing equipment or delete faulty/unused equipment's inside health club and mark location of each equipment. Employee salary management can be executed like edit hourly wages and view average wages earned, wages earned for a time period. Admin can send notification to staff/members or schedule notification to staff/members. Status of each member can be viewed and admin can edit the recurring payments of member's. Bills are calculated and viewed for the details like bill id, amount, discount etc.

Virtual training and help desk using voicebot/chatbot

User bot

A pre-trained chatbot which can handle all today activities with the clients and will guide users through different workouts and also provide a suitable diet chart to be followed as per the selected fitness goal. Using google voice to text convertor voice to text conversion is implemented and google text to voice convertor text to voice conversion is implemented. New user registration is carried out through voice assisted or chat interface. User can ask doubts and suggestion to chatbot. With the help of dialog flow reply from the bot is generated. Using bot classes can be scheduled or scheduled classes can be rescheduled. Text chat and voice chat shifting option is available in the bot. Using voicebit/chatbot system can check availability of specific

trainers and get their contact details. User can view payment history through bot and can pay fee online.

Admin section for training

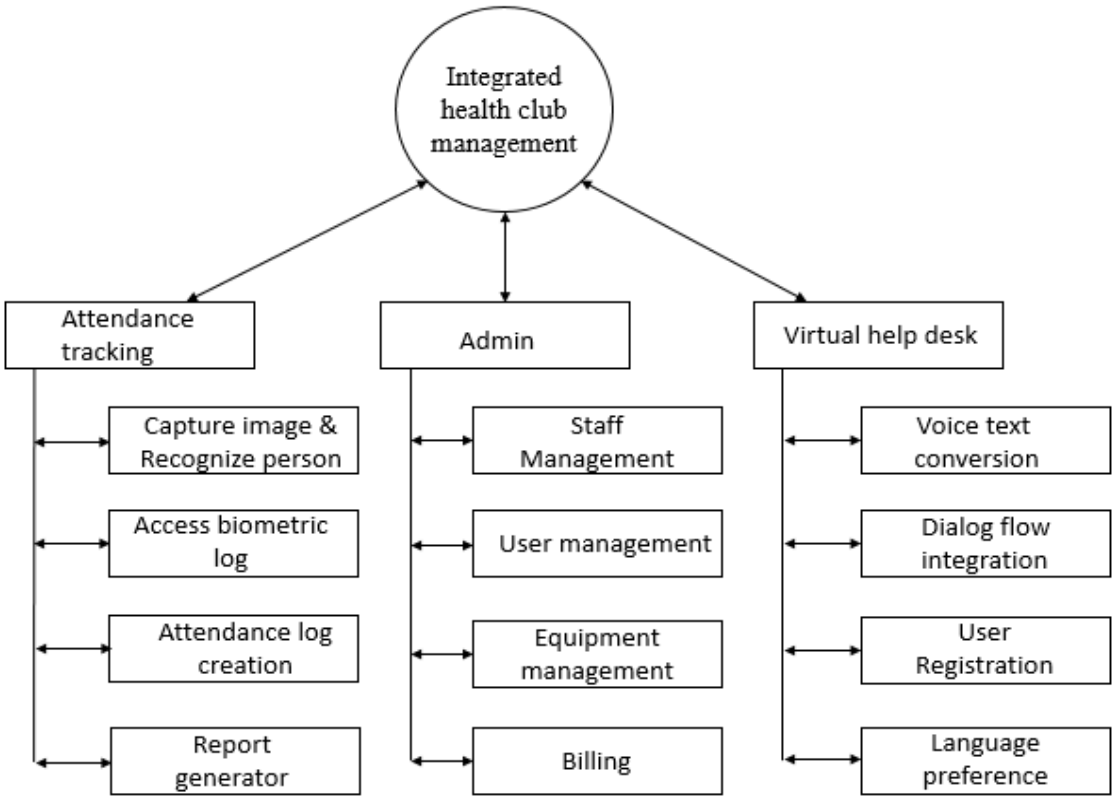
Admin can train the bot using the training interface and can add static questions and dynamic using available api interface. Language preferences in the health club management system can be set or change accordingly by the admin. Admin can allow users or block the users through chatbot.

Attendance tracking module

Attendance tracking module integrate biometrics and face identification attendance system with software and control access of members. This module can fetch attendance from biometric modules and mark logs. And also can fetch attendance using face recognition using openCV. Attendance tracking module can generate auto billing based on attendance and can send report or invoices to the members.

A Convolution Neural Network (CNN) is a Deep Learning algorithm which can take in an input image, assign importance to various aspects/objects in the image and be able to differentiate one from the other. The pre-processing required in a CNN is much lower as compared to other classification algorithms. While in primitive methods filters are hand engineered, with enough training, CNN have the ability to learn these filters/characteristics

System diagram



5.1.1 Data Flow Diagram

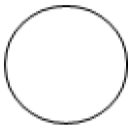
A data flow diagram is a graphical technique that depicts information flow and transforms that are applied as data move from input to output. The DFD is used to represent increasing information flow and functional details. A level 0 DFD also called fundamental system model represents the entire software elements as a single bible with input and output indicated by incoming and outgoing arrows respectively.

The DFD is one of the most important tools used by the system analyst. It can be used for the visualization of data processing. DFD provides a graphical representation of the flow of data through an information system. DFD illustrates how data is processed by a system in terms of inputs and outputs. It is a picture of system processing and flow without excessive concern for details.

The DFD showing the top level of the system is called “Context Diagram”. It should be overview including basic inputs, processes and outputs. Then it is exploded in to more detailed lower level diagram that shows additional features of the system.

The purpose of DFD is to provide a semantic bridge between users and system developers. The diagrams are graphical, eliminating thousands of words, logical representations, modeling what system does; hierarchical, showing system at any level of details; and Jargon less, allowing user interaction and reviewing.

Data Flow Diagrams Notations

Process: 

Input/output:

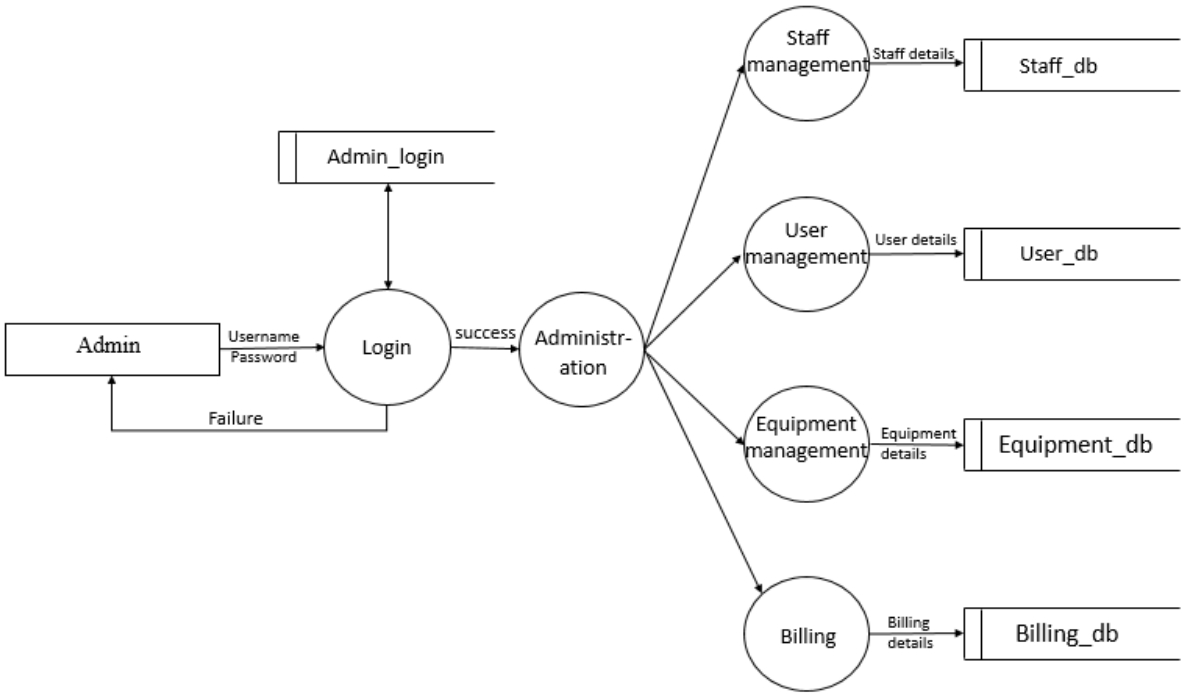
Flow of direction:

Database/File:

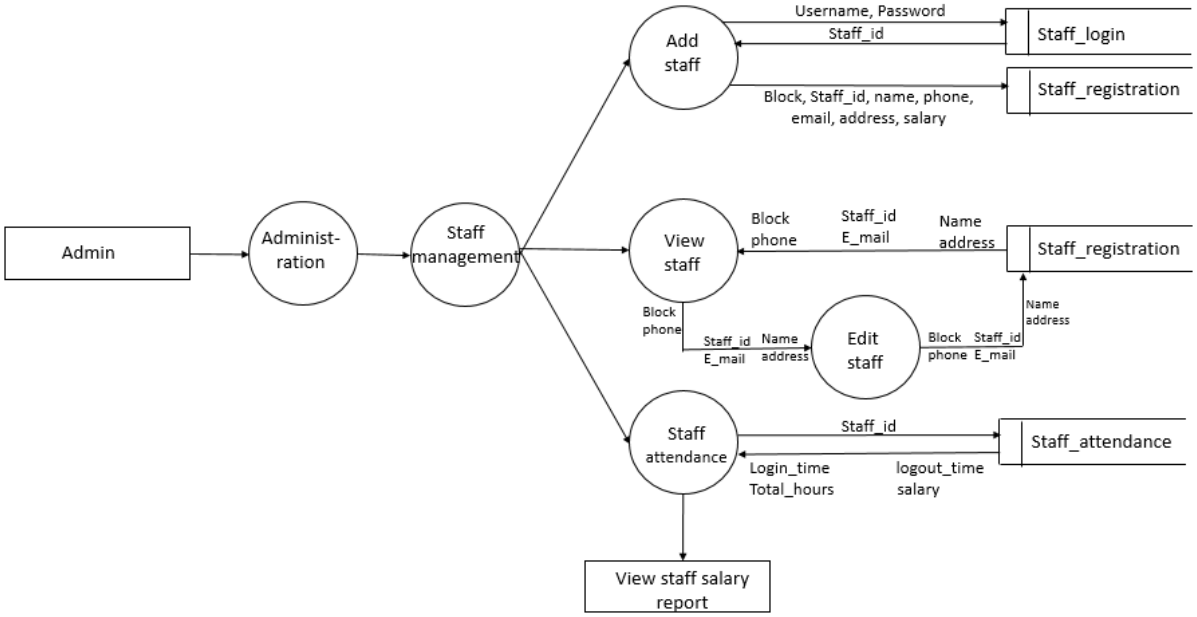
5.1.2 DFD

Level 0 (context level)

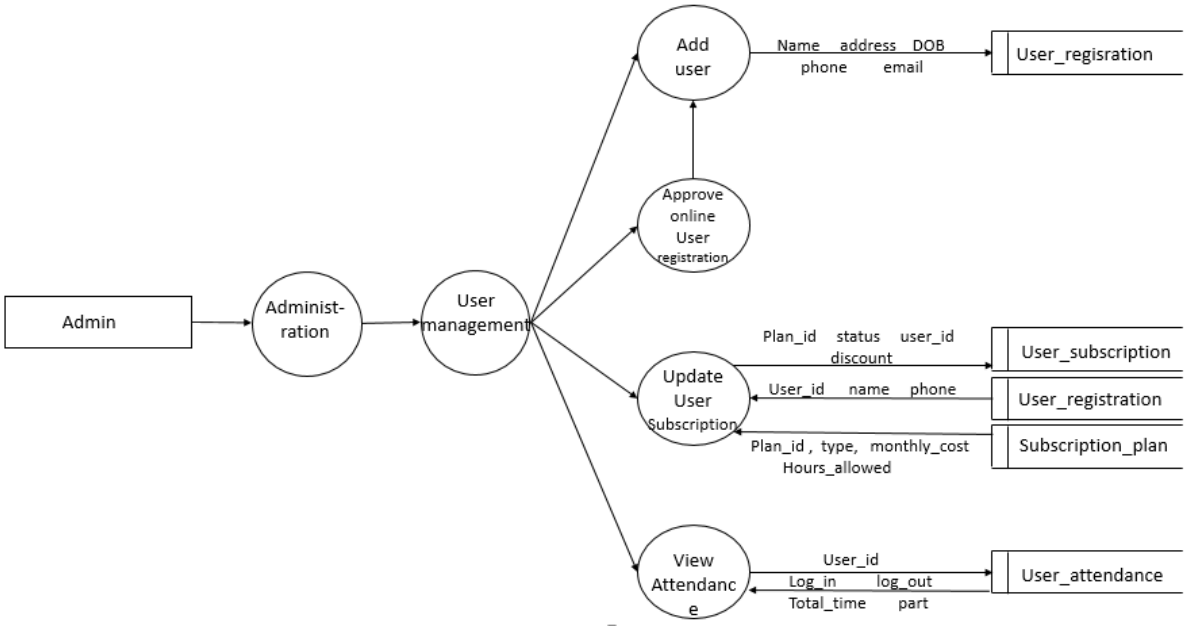
Level 1 for Admin



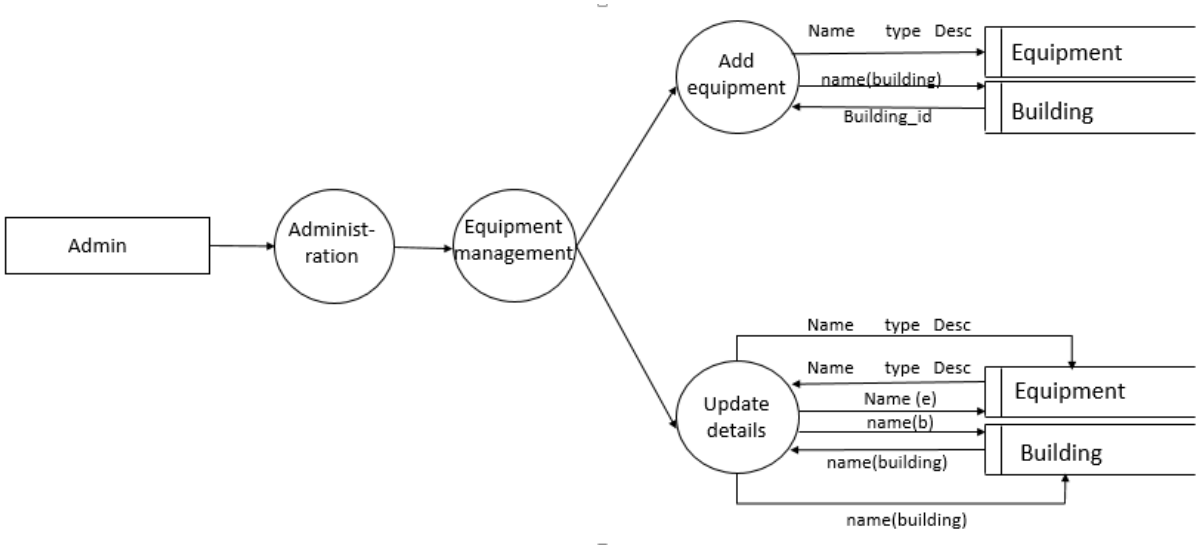
Level 1.1 for Admin (staff management)



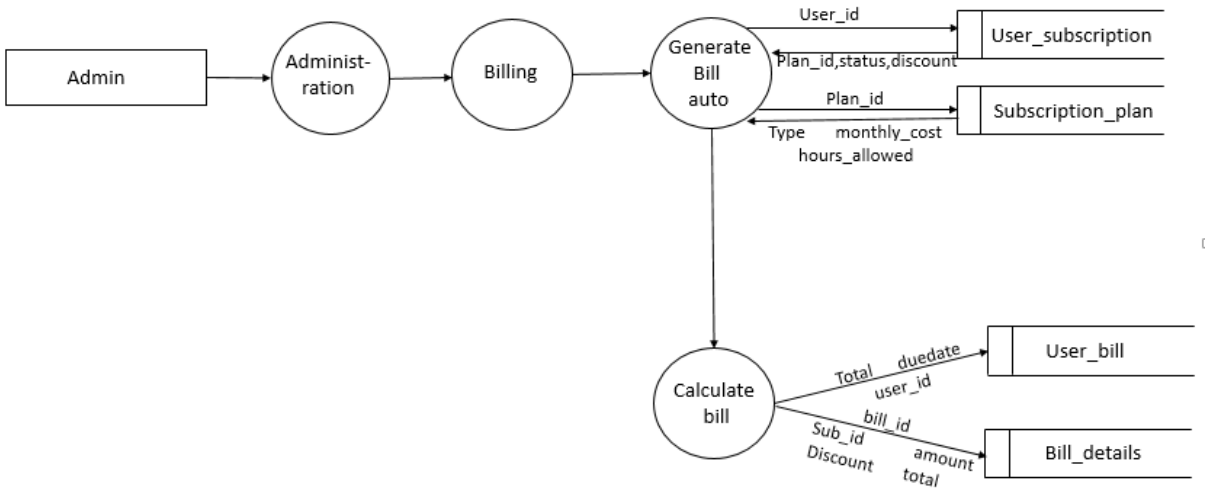
Level 1.2 for Admin (user management)



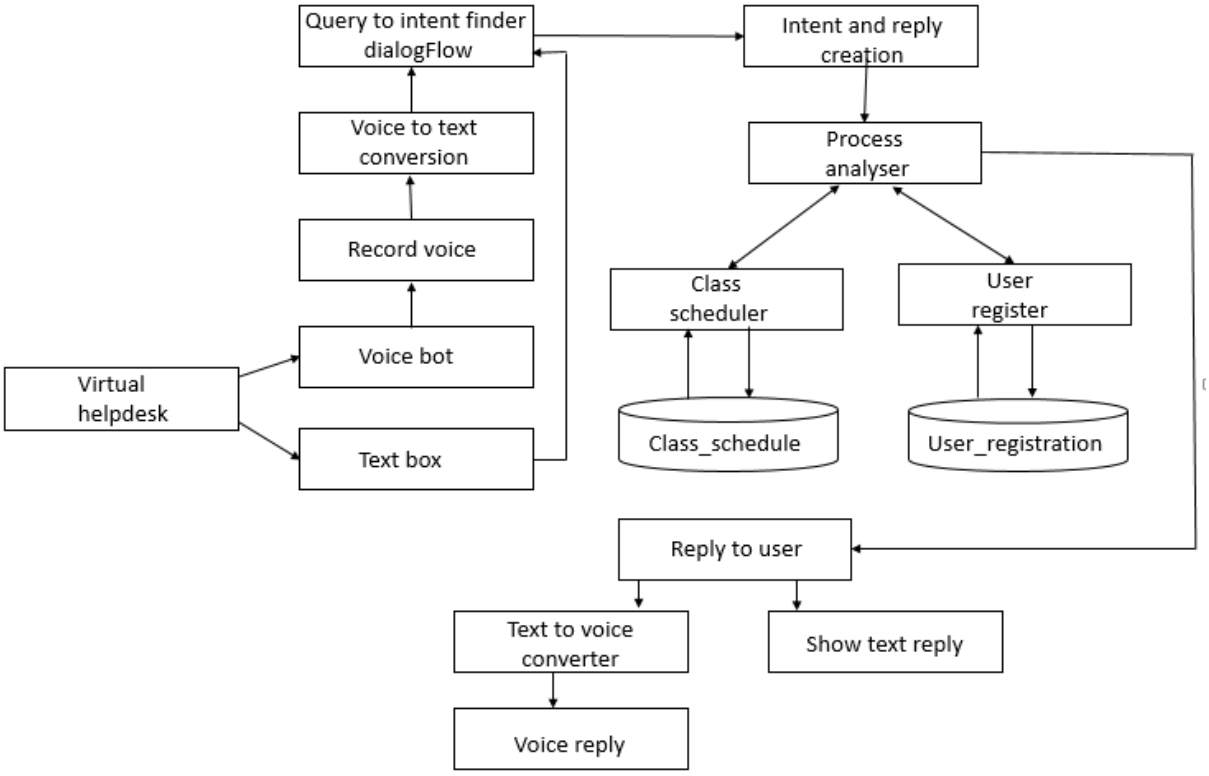
Level 1.3 for Admin (Equipment management)



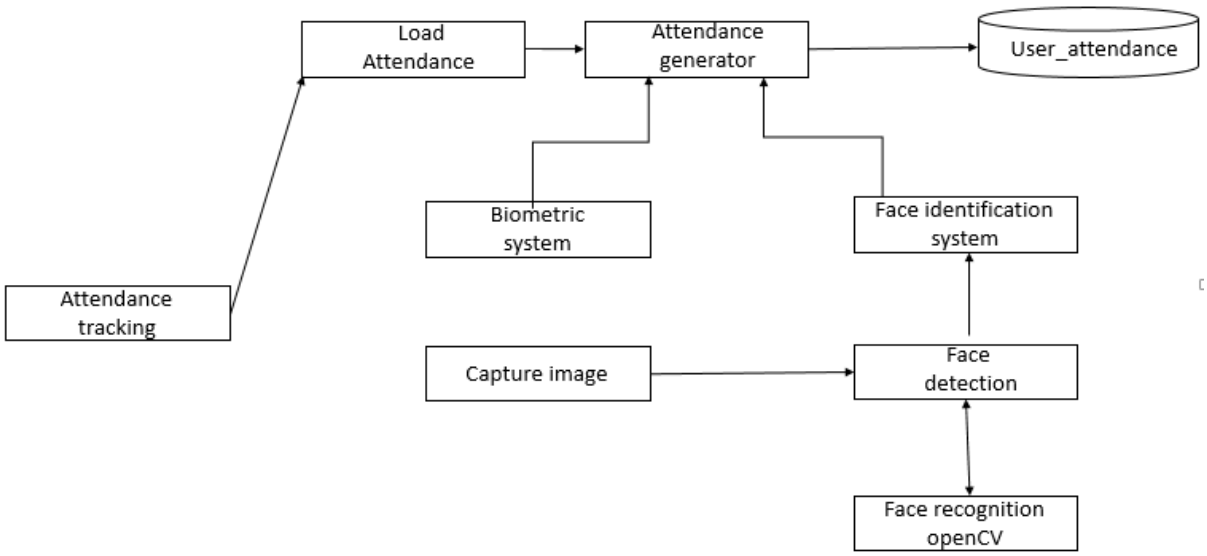
Level 1.4 for Admin (Billing)



Block diagram for virtual helpdesk



Block diagram for attendance tracking



5.2 DATABASE DESIGN

Table 5.1

Table name: Admin_login			**primary key: Admin_login_id**	
Description : details of admin login				
Field	**Datatype**	**Size**	**Constraints**	**Description**
Admin_login_id	Integer	11	Primary key	Id of admin login
Username	Varchar	15		Username of admin
Password	Varchar	15		Password of admin

Table 5.2

Table name:staff_login			**primary key:Staff_id**	
Description: details of staff login				
Field	**Datatype**	**Size**	**Constraints**	**Description**
Staff_id	Integer	11	Primary key	Id of staff
Type	Varchar	15		Type of staff
Username	Varchar	15		Username of staff
Password	Varchar	15		Password of staff

Table 5.3

Table used: staff_login

Table name: staff_registration			**primary key:Staff_reg_id**	
Description : details of staff egistration				
Field	**Datatype**	**Size**	**Constraints**	**Description**
Staff_reg_id	Integer	11	Primary key	Id of staff registration
Staff_id	Integer	11	Foreign key	Id of staff
Block	Varchar	10		Block of staff
Name	Varchar	30		Name of staff
Phone	Varchar	15		Phone no of staff
Email	Varchar	40		Email id of staff
Address	Text			Address od the staff
Salary_hour	Double			Salary hours of staff

Table 5.4

Table used:staff_login

Table name:user_registration			**primary key:User_id**	
Description: details of user registration				
Field	**Datatype**	**Size**	**Constraints**	**Description**
User_id	Integer	11	Primary key	Id of user

Name	Varchar	15		Name of the user
Address	Varchar	30		Address of user
Phone	Varchar	15		Phone no of user
Email	Varchar	20		Email of user
Dob	Date			Date of birth of user

Table 5.5

Table used: staff_login , user_registration

Table name: class_schedule			**primary key:Schedule_id**	
Description: details of schedule				
Field	**Datatype**	**Size**	**Constraints**	**Description**
Schedule_id	Integer	11	Primary key	Id of the schedule
User_id	Integer	11	Foreign key	Id of the user
Staff_id	Integer	11	Foreign key	Id of the staff
Start time	Datetime			Schedule's start time
End time	Datetime			Schedule's end time
Type	Varchar	15		Type of the schedule

Table 5.6

Table name: building			**primary key:building_id**	
Description: details of building				
Field	**Datatype**	**Size**	**Constraints**	**Description**
Building_id	Integer	11	Primary key	Id of the building
Name	Varchar	30		Name of the block
Number	Integer	11		Number of block

Table 5.7

Table used: building

Table name: equipment			**primary key:Equipment_id**	
Description: details of equipment				
Field	**Datatype**	**Size**	**Constraints**	**Description**
Equipment_id	Integer	11	Primary key	Id of the equipment
Name	Varchar	40		Name of the equipment
Type	Varchar	15		Type of equipment
Building_id	Integer	11	Foreign key	Id of building
Desc	Text			Descriptions

Table 5.8

Table used: user_registration

Table name: user_bill			**primary key:Bill_id**	
Description : details of user bill				
Field	**Datatype**	**Size**	**Constraints**	**Description**
Bill_id	Integer	11	Primary key	Id if the bill
User_id	Integer	11	Foreign key	Id of the user
Total_amount	Double			Total amount to be paid
Due_date	Double			Due date of the payment
Paid_amount	Double			Details of paid amount

Table 5.9

Table used:building

Table name:subscription_plan			**primary key:Plan_id**	
Description: details of subscription plan				
Field	**Datatype**	**Size**	**Constraints**	**Description**
Plan_id	Integer	11	Primary key	Id of plan
Type	Varchar	15		Type of plan
Building_id	Integer	11	Foreign key	Id of building
Monthly_cost	Double			Monthly cost plan
Hours_allowed	Double			Allowed hours details

Table 5.10

Table used:subscription_plan,user_registration

Table name: user_Subscription			**primary key:User_subscription**	
Description : details of user subscription				
Field	**Datatype**	**Size**	**Constraints**	**Description**
User_subscription_id	Integer	11	Primary key	Id of user subscription
Plan_id	Integer	11	Foreign key	Id of plan
Status	Varchar	50		Status subscription
Discount	Double			Discount available
User_id	Integer	11	Foreign key	Id of user

Table 5.11

Table used:user_bill, user_registration

Table name :bill_details			**primary key: Bill_details_id**	
Description: details of bill				
Field	**Datatype**	**Size**	**Constraints**	**Description**
Bill_details_id	Integer	11	Primary key	Id of bill details
Bill_id	Integer	11	Foreign key	Id of bill
User_sub_id	Integer	11	Foreign key	Id of user
Amount	Double			Total amount
Discount	Double			Discount available
Total	Double			Total sum up

Table 5.12

Table used: staff_login

Table name:staff_attendance			**primary key:Staff_attendance_id**	
Description: details of staff attendance				
Field	**Datatype**	**Size**	**Constraints**	**Description**
Staff_attendance_id	Integer	11	Primary key	Id of staff attendance
Staff_id	Integer	11	Foreign key	Id of staff
Log_in time	Datetime			Login time of staff
Log_out time	Datetime			Logout time of stff
Total hours	Double			Total hours worked
Salary	Double			Salary of staff

Table 5.13

Table used :user_registration

Table name:user_attendance			**primary key: User_attendance**	
Description: details of user attendance				
Field	**Datatype**	**Size**	**Constraints**	**Description**
User_attendance	Integer	11	Primary key	Details of user attendance
User_id	Integer	11	Foreign key	Id of user
Log_in	Datetime			Login details of user
Log_out	Datetime			Logout details of user
Total_time	Double			Total time user used
Part	Varchar	15		Part of user

5.2 Input Design

Input designing is the basic theory to be considered during system study. The input media used in the system is the keyboard. Details are entered in the system through different data entry screens. The system is designed in a user-friendly manner. Appropriate error messages are displayed when a false data is entered. Design of the system is web-oriented and is highly interactive to the users. The user interface design is very important for any application. The interface design defines how the software communicates within itself, to system that interpreted with it and with human who use it. The interface design is very good. The user will fall into an interactive software application.

The input design is the process of converting the user-oriented description of inputs into a programmer-oriented specification. The objective of input design is to create an input layout that is easy to follow and prevents the user from committing errors. It covers all phases of input, right from the creation of initial databases to the actual data entry into the system. The input design is the link that ties the system into the world of its users. Hence, lays its importance in the design phase. The input design makes sure that while entering data, the end-users understand the format in which the data is to be entered so that it is accepted by the system, the data values that are mandatory for the system to function, the order in which transactions need to be processed etc.

The goal designing input data is to make the automation as easy and free from errors as possible. Input design, involves determining the record media, method of input, speed of capture and entry to the system. The main objectives that are guiding as in the input stages are:

- Controlling the amount of inputs
- Avoiding inordinate delay
- Controlling errors

- Avoiding extra steps
- Keeping the process simple
- To achieve highest level accuracy.

5.3 Output Design

Output refers to the results and information that are generated by the system. Here determine information to be present, decide layout and select output medium, arrange presentation of information in accepted format of column headings and pagination are specified. Output design plays a major role in providing the user with the required format. The major function of the output is to convey information and so its layout and design are careful considerations. Information must be carefully considered to the needs of the user. Standards for printed output suggest giving each output a name or title, providing a sample of the output layout, and specifying the procedure for providing the accuracy of the output data.

The output devices to consider depends on the compatibility of the devices with the system, response time requirement and printed quality required. 27 The design output form, attention is given to proper identification and wording, readability and use, composition and layout, order of data items and clarity of instructions. A well-designed form with clarity stated captions should be self-instructing. An organizations form must be centrally controlled for efficient handling. Computer output is the most important and direct information source to the user. Output design is a process that involves designing necessary outputs in the form of reports that should be given to the users according to the requirements. Efficient, intelligible output design should improve the systems relationship with the user and help in decision making. Since the reports are directing referred by the management for taking decisions and to draw conclusions they must be designed with almost care and the details in the reports must be simple, descriptive and clear to the user/ so while designing output the following things are to be considered.

- Determine what information to present.
- Arrange the presentation of information in an acceptable format.
- Decide how to distribute the output to intend receipts.
- Depending on the nature and future use of output required, they can be displayed on the monitor for immediate need and for obtaining the hardcopy.
- Efficient and intelligent output design should improve system relation with the user and help in decision making that is, this makes system user friendly to be displayed or printed as per the user's choice.

Process	Input design	Output design
Login Page for admin	Enter user name, Password	Show home page
Login Page for Staff	Enter user name, password	Show home page
Add staff	Enter staff details	Staff added successfully
Edit staff	Select staff and edit	Edit completed
View staff	Select staff management and click view staff details	Show staff and its details
Add user	Enter user details	User added successfully
Update user subscription	Enter subscription details	User subscription updated
View user attendance	Select user management and click user attendance details	Show user attendance details
Add equipment	Enter equipment details	Equipment added successfully
Update equipment	Enter equipment details	Equipment details updated

5.4 Program Design

i. Admin

Step 1: Start

Step 2: Once logged in the admin has the privilege to staff management, user management, equipment management and billing.

Step 3: In staff management admin can add new staff, edit staff, view staff attendance and View staff salary report.

Step 4: In user management admin can add user, approve new user, update user subscription and view user attendance.

Step 5: In equipment management admin can add equipment, update equipment, location of equipment, delete equipment.

Step 6: In billing admin can calculate bill and auto generate bill.

Step 7: Stop

ii. Virtual help desk

Step 1: Start

Step 2: Virtual help desk can convert voice to text and vice versa.

Step 3: Virtual help desk can manage shifting option and availability of trainer.

Step 4: Virtual help desk can manage new user registration, schedule/reschedule of classes.

Step 5: Virtual help desk can view payment history.

Step 6: In virtual help desk, admin can train the bot, add static and dynamic question, can set language preferences, block/unblock users.

Step 7: Stop.

iii. Attendance tracking

Step 1: Start

Step 2: Attendance tracking can fetch attendance from biometric and mark log.

Step 3: Attendance tracking can also fetch attendance using face recognition using openCV.

Step 4: Can combine all attendance logs and automatically prepare attendance report.

Step 5: Attendance tracking can manage auto billing based on attendance.

Step 6: Attendance tracking can send report or invoices to the members.

Step 7: Stop

CHAPTER 6

FUNCTIONAL AND NON-FUNCTIONAL REQUIREMENTS

6.1 FUNCTIONAL REQUIREMENTS

A functional requirement document defines the functionality of a system or one of its subsystems. It also depends upon the type of software, expected users and the type of system where the software is used. Functional user requirements may be high-level statements of what the system should do but functional system requirements should also describe clearly about the system services in detail. A function is nothing but inputs, its behavior, and outputs. It can be a calculation, data manipulation, business process, user interaction, or any other specific functionality which defines what function a system is likely to perform. Functional software requirements help you to capture the intended behavior of the system. This behavior may be expressed as functions, services or tasks or which system is required to perform. Functional

Requirements should include the following things:

- Trainers should with his/her credentials provided by admin for doing any activity.
- Each member should register to this system for auto identification.
- If blocked users are trying to login, it should be denied.
- Equipment's of the health club should be listed and mark location of that equipment.
- It should clearly define who will be allowed to create/modify/delete the data in the system
- Face should be clearly visible (no mask) in the system for attendance marking.

6.2 NON-FUNCTIONAL REQUIREMENTS

A non-functional requirement is a requirement that specifies criteria that can be used to judge the operation of a system, rather than specific behaviours. Non-functional requirements are “system shall be requirement ". Non-functional requirements are often called qualities of a system. Other terms for non-functional requirements are "constraints", "quality attributes”, “quality goals", "quality of service requirements" and "non-behavioural requirements. Some of the non-functional requirements are mentioned below i. Usability: The system shall have a clean interface with only needed features, clear terminology and tool tips wherever necessary. Warnings or alerts shall be specified in clear way. ii. Efficiency: The system shall respond to different searches being conducted like searching particular equipment, search free slot, etc. in a very fast way. iii. Portability: The system shall be independent of the specific technological platform used to implement it. iv. Reliability: Reliability defined as a measure of the time between failures occurring in a system (measure show frequently the system fails), so that the system shall operate without any failure for a particular period of time v. Availability: Availability measures the percentage of time the system is in its operational state so that the system shall be available for use 24 hours per day and 365days per year. iv. Security requirements: trainers should be authorized by admin

CHAPTER 7

TESTING

Software testing is critical element of software quality assurance and represents the ultimate review of specifications, design and code generation. System testing is the stage of implementation, it is aimed for ensuring that the system works accurately and efficiently before live operations commences. Testing is a purpose of executing a programme with intend of finding errors.

i. Preparing a test case that has high probability of finding undiscovered errors.
ii. Testing to erase out all kinds of bugs from the program. Before going for testing, first we have to decide the type of test. For this impact system, unit testing is carried out. And the following things are taken to consideration. To ensure that information properly places in and out of the program.

7.1 Testing Strategies

An engineered product can be tested in one of these two ways. These testing strategies include:

- Black box testing
- White box testing

White box testing

White-box testing is a method of testing the application at the level of the source code. White-box testing (also known as clear box testing, glass box testing, and

transparent box testing, and structural testing) is a method of testing software that tests internal structures or workings of an application, as opposed to its functionality. In white-box testing an internal perspective of the system, as well as programming skills, are chooses inputs to exercise paths through the code and determine the expected outputs.

Black box testing

Black-box testing is a method of software testing that examines the functionality of an application without peering into its internal structures or workings. This method of test can be applied virtually to every level of software testing: unit, integration, system and acceptance. It is sometimes referred to as specification-based testing.

7.2 Unit Testing

In this testing we test each module individually and integrate the overall system. Unit testing focuses verification efforts on the smaller unit of software design in the module. This is also known as module testing. The modules of the system are tested separately. The testing is carried out during programming stage itself. In these testing steps each module is found to work satisfactorily as regarding to the expected output given by the user. It is very easy to find errors and debug the system. In this project, after coding each module have to be individually tested to determine whether they are coded correctly so that they satisfy the requirements in the specifications and execute effectively as individual units was tested and run individually. . In this project unit testing can be applied to check each functionality of the health club Management system.

7.3 Integration Testing

Data can be lost across and interface; one module can have an adverse effect on other sub functions when combined, may not produce the desired major functions. Integrated testing is the systematic testing for constructing the uncovered errors within the interface. This testing was done with sample data. The need for integrated test is to find the overall system performance. According to this project, using integrated test plan prepared in the design phase of system developed as a guide, the integration test was carried out.

7.4 Validation Testing

Validation testing can be defined in many ways but a simple definition is the validation succeeds when software function in manner that can be reasonably accepted by the customer. After validation test have been conducted one of the two possible conditions exists: The function or performance characteristics confirmed to specification and accepted. A deviation from specification is uncovered and deficiency list is created. In this project, validation testing is done with all forms. All forms are validated completely. Name should contain only alphabets. In case of contact numbers and other numbers should contain only numeric values. The validation checking also includes boundary checking for variable fields. The “Integrated health club Management system” to validate the username and password of login page.

7.5 System Testing

Software testing is critical element of software quality assurance and represents the ultimate review of specifications, design and code generation. System testing is the

stage of implementation, it is aimed for ensuring that the system works accurately and efficiently before live operations commences. Nothing is complete without testing, as it is vital success of the system.

Testing Objectives:

There are several rules that can serve as testing objectives, they are

- Testing is a process of executing a program with the intent of finding an error
- A good test case is one that has high probability of finding an undiscovered error.
- A successful test is one that uncovers an undiscovered errors.

A test case is a specification of the inputs, execution conditions, testing procedure, and expected results that define a single test to be executed to achieve a particular software testing objective, such as to exercise a particular program path or to verify compliance with a specific requirement. Test cases underlie testing that is methodical rather than haphazard. A battery of test cases can be built to produce the desired coverage of the software being tested. Formally defined test cases allow the same tests to be run repeatedly against successive versions of the software, allowing for used to design test cases. The tester effective and consistent regression testing.

Sl. no	Test case	Input Expected	Output	Result
1	Login page (Admin)	Correct username and password	Home page	Pass
2	Login page (staff)	Correct username and password	Home page	Pass
3	Add staff	Enter block, staff id, name, phone, email, address, salary	Staff added successfully	pass
4	View staff attendance	Enter staff id	Display staff attendance details	Pass
5	Edit staff	All fields entered correctly	Staff details updated	Pass
6	Add user	Enter name, dob, address, phone, email	User added successfully	Pass
7	Update user subscription	All fields entered correctly	Display user subscription	pass
8	View user attendance	Enter user id	Display user attendance	Pass
9	Add equipment	Enter name ,type ,building id	Equipment added successfully	Pass
10	Update equipment	All fields entered correctly	Display equipment	Pass

CHAPTER 8

RESULT AND DISCUSSION

8.1 Results (Salient Features)

The main motivation and objective of this system is to provide a solution to reduce the inconvenience in finding a unique diet for the user. Enabling the user experiencing a friendly user interface. Systematic handling of the schedules in such a way is a key to increasing its manageability and its competence. The proposed system incorporated with the following features.

✓ Human effort can be reduced.

✓ Improved efficiency.

✓ Easy access to the machine related descriptive/static data

✓ Easy access to the machine related documents

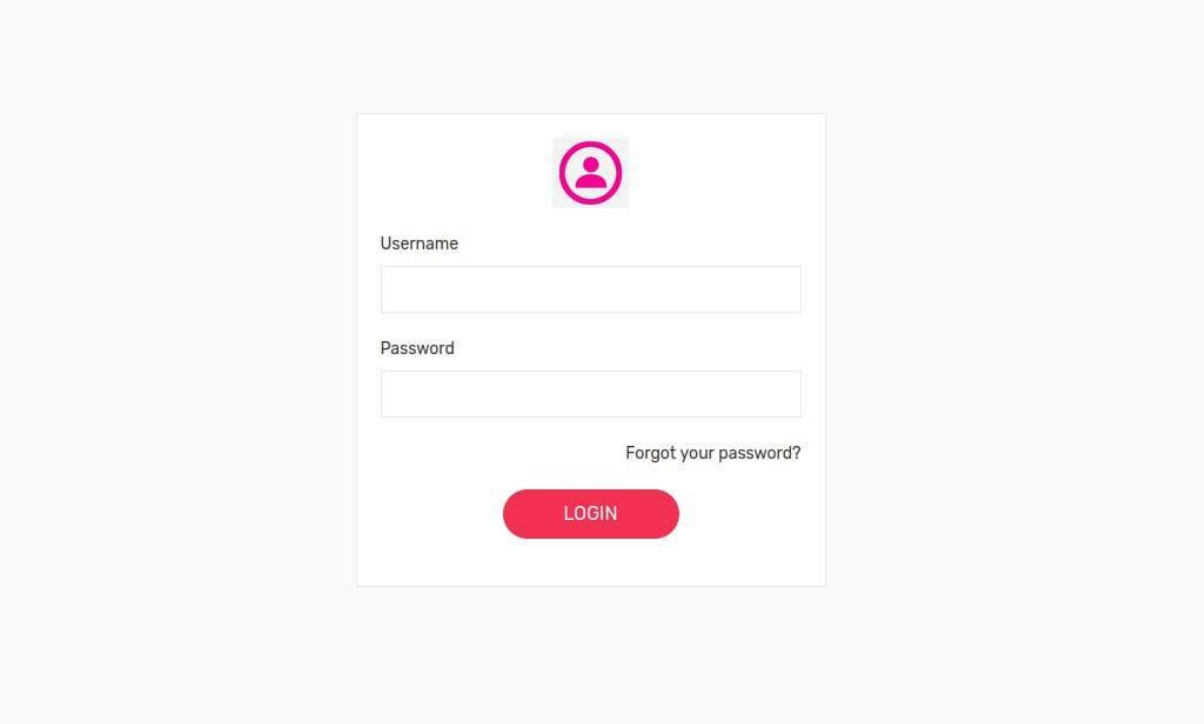
✓ Efficient management of the relationship between the main asset and its sub-components, modules and parts

✓ Dynamic tracing of the status of maintenance, depending on whether the maintenance action is planned or performed.

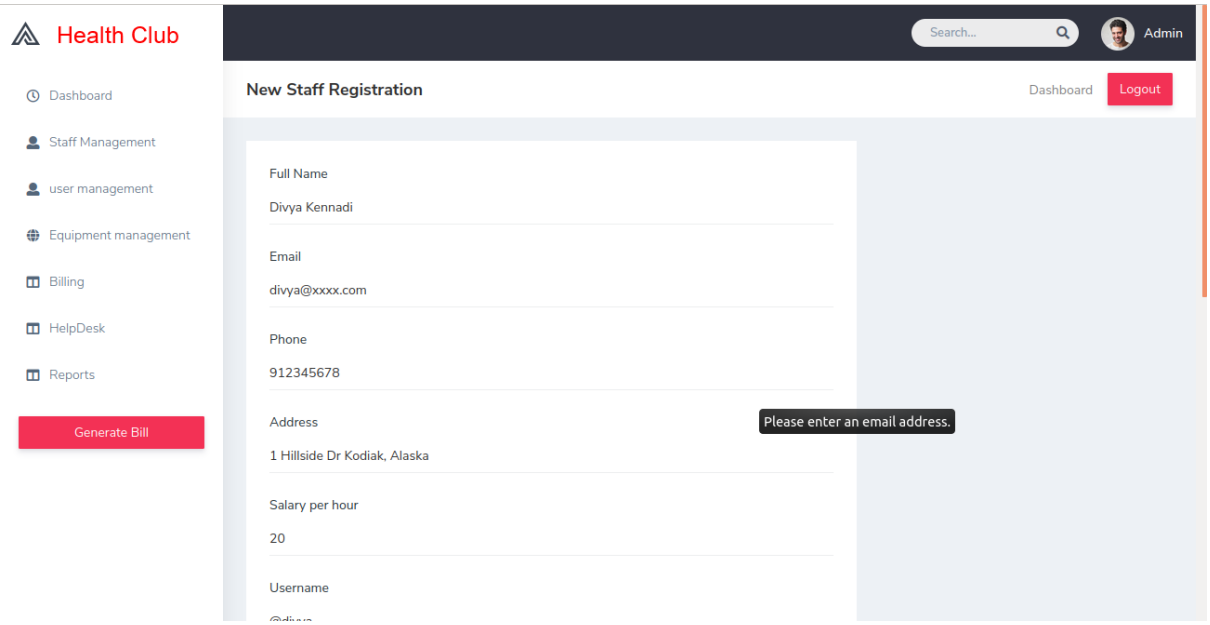
✓ The user can easily extract the list of the machines included in an inspection

8.2 Screen shots

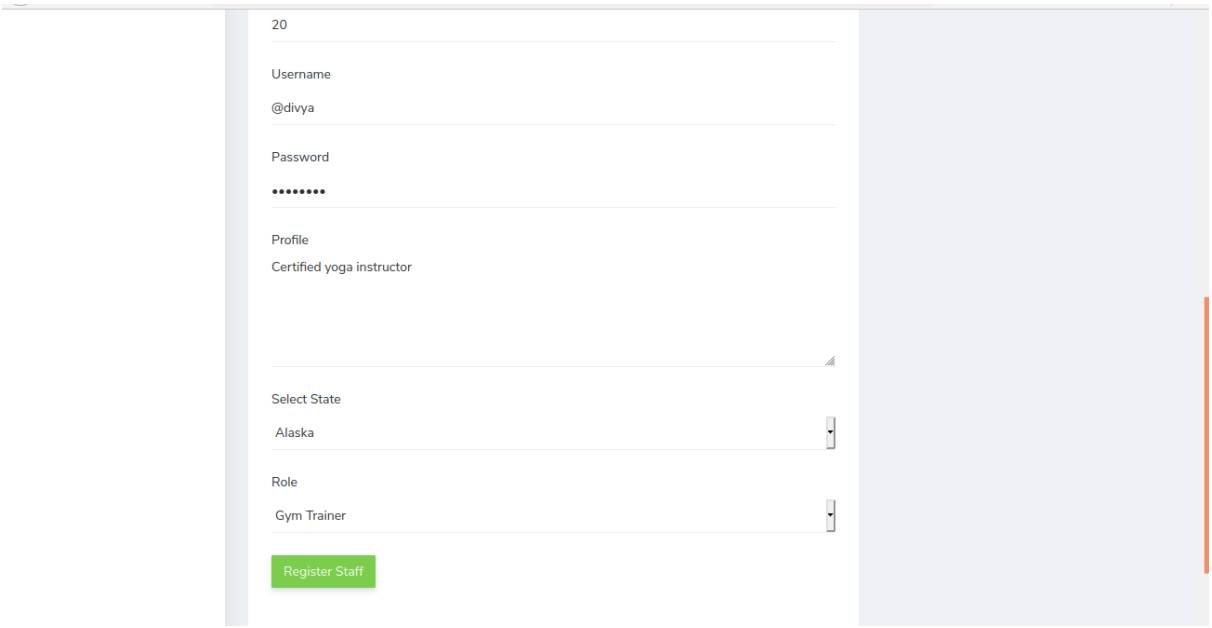
I. ADMIN LOGIN



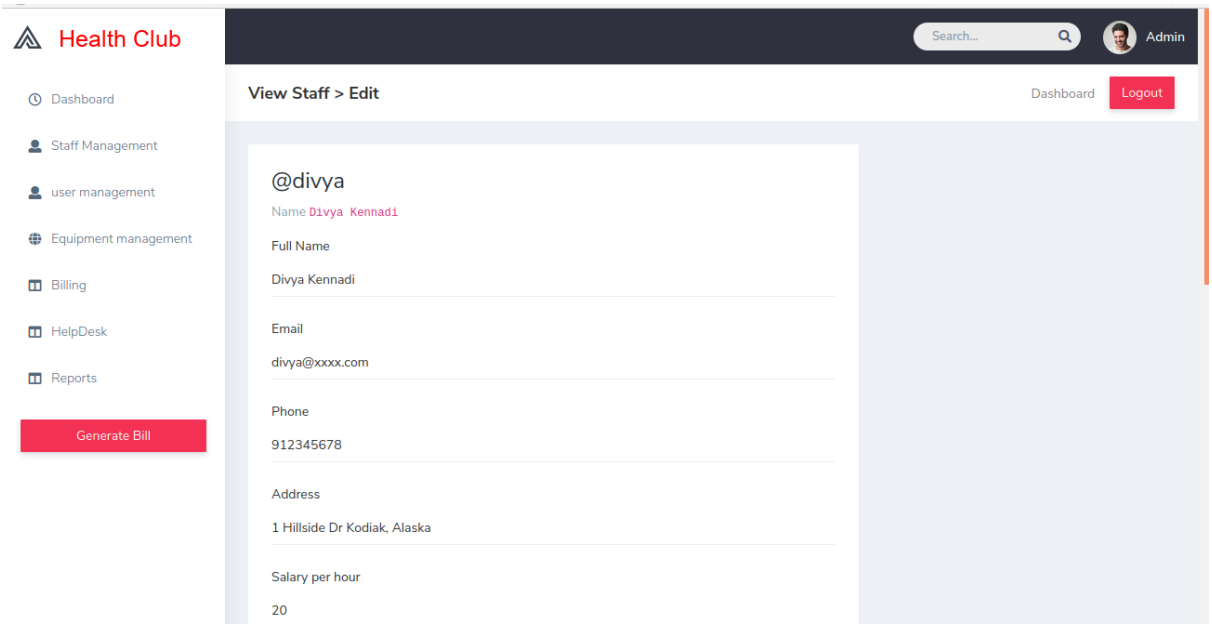
II. NEW STAFF REGISTRATION 1



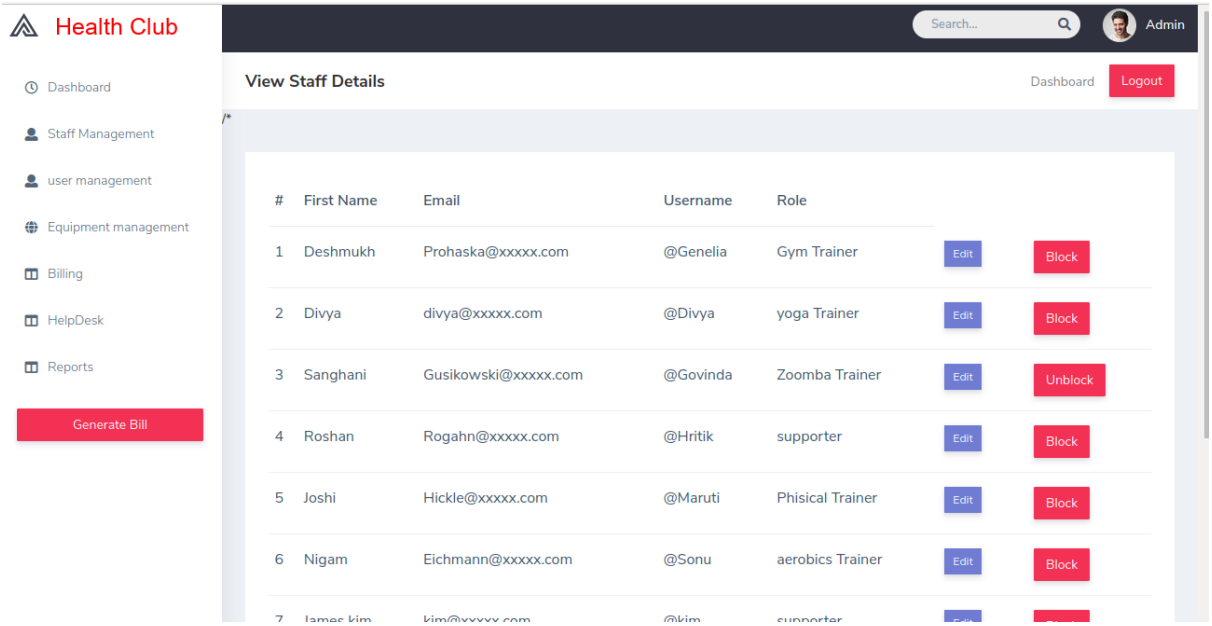
III. NEW STAFF REGISTRATION 2



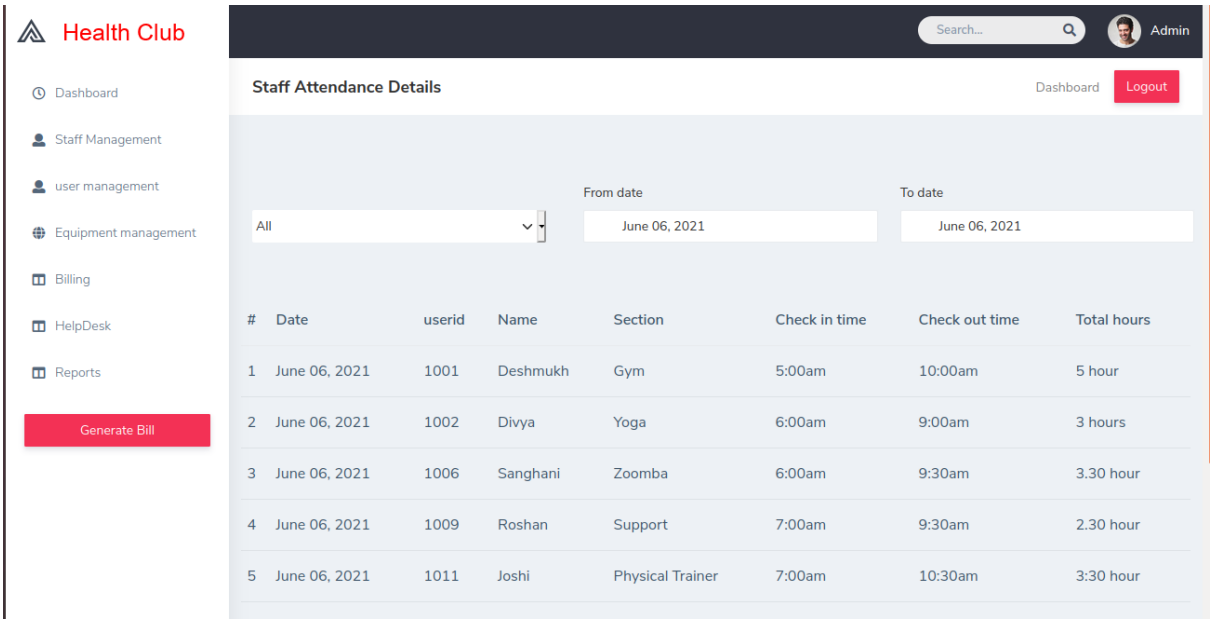
IV. EDIT STAFF



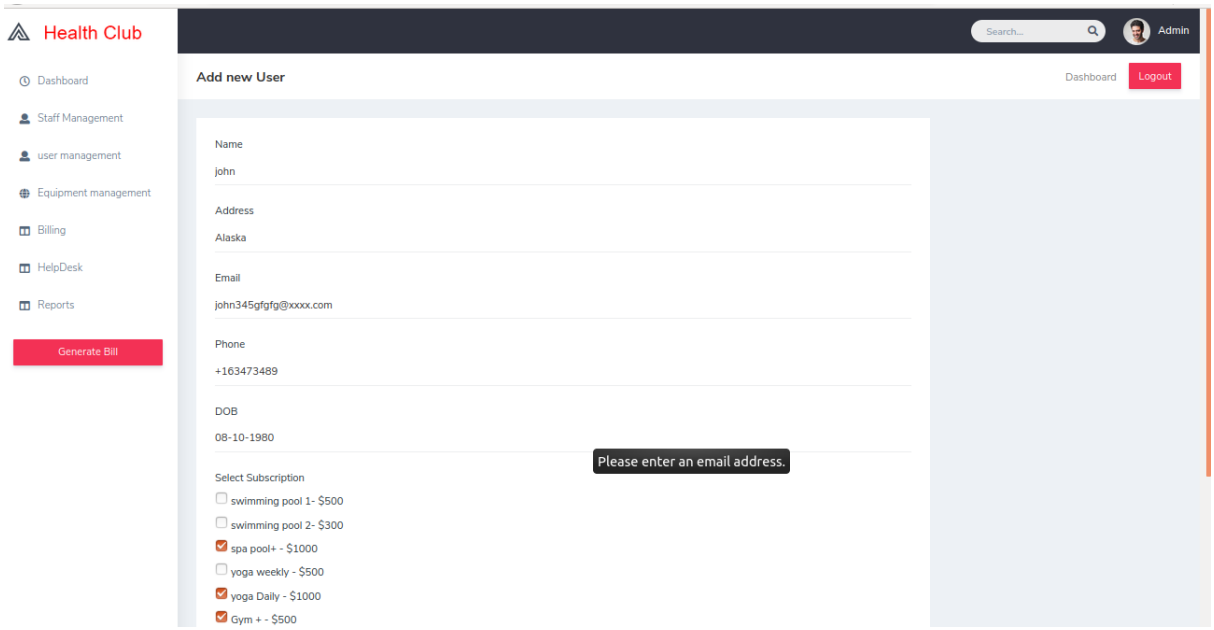
V. VIEW STAFF DETAILS



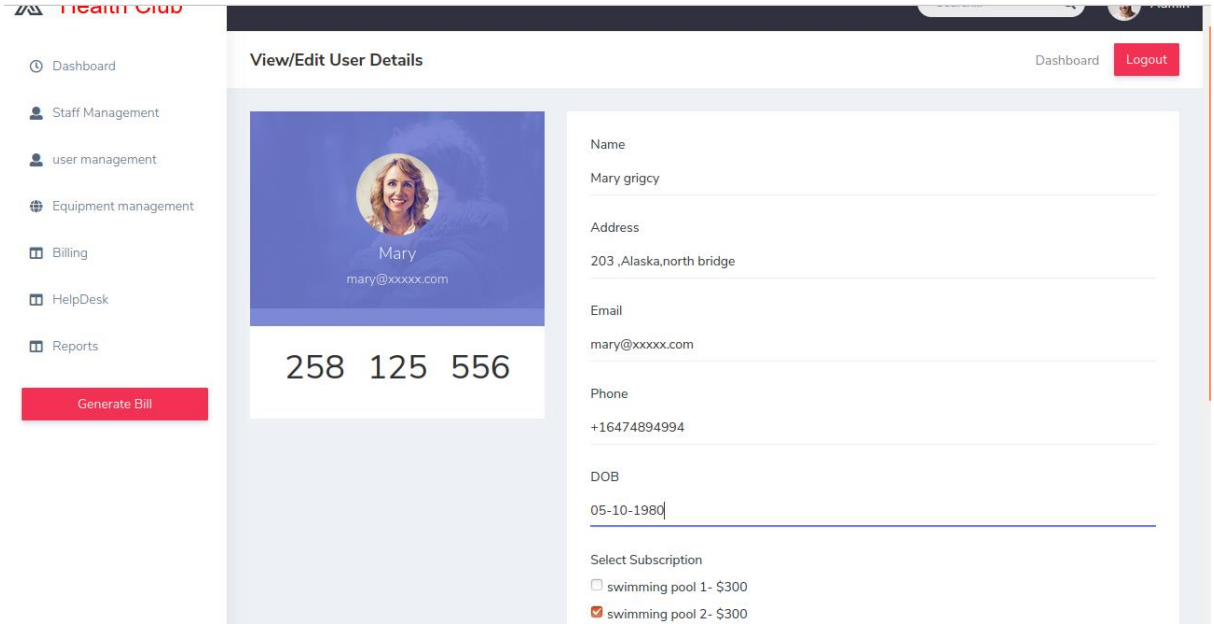
VI. STAFF ATTENDANCE



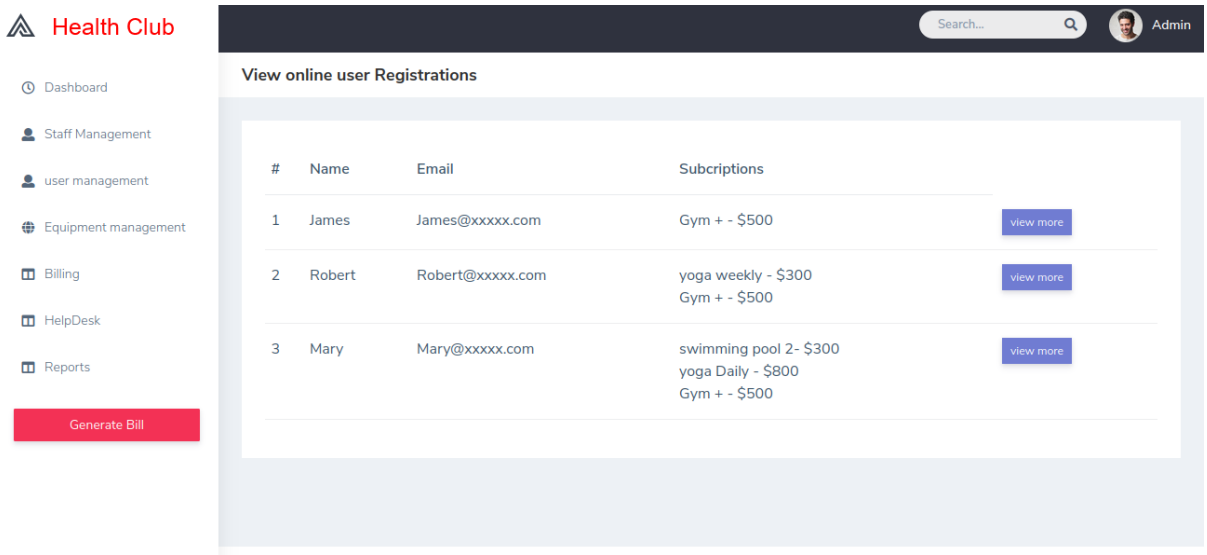
VII. ADD USER



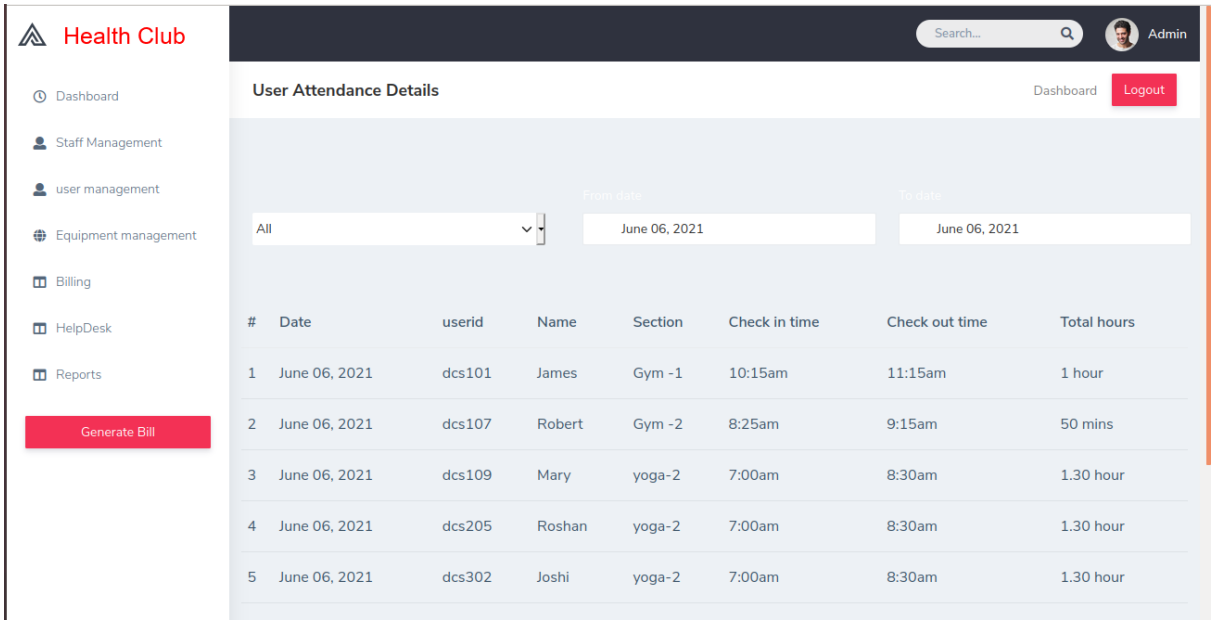
VIII. VIEW OR EDIT USER DETAILS



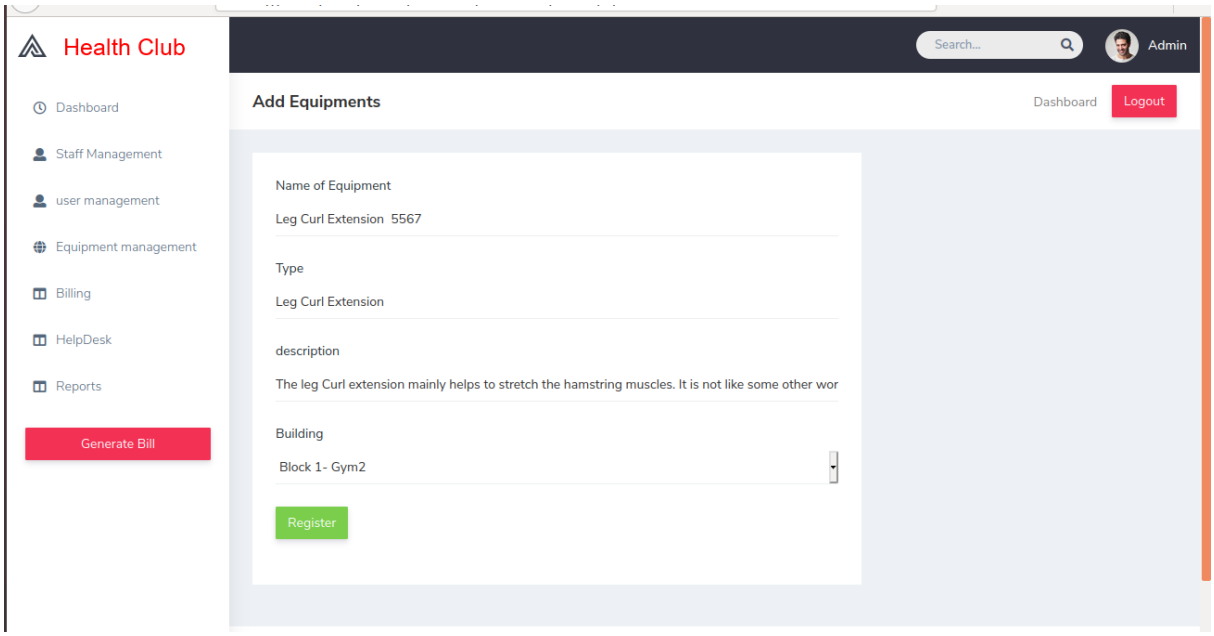
IX. VIEW ONLINE USER REGISTRATION



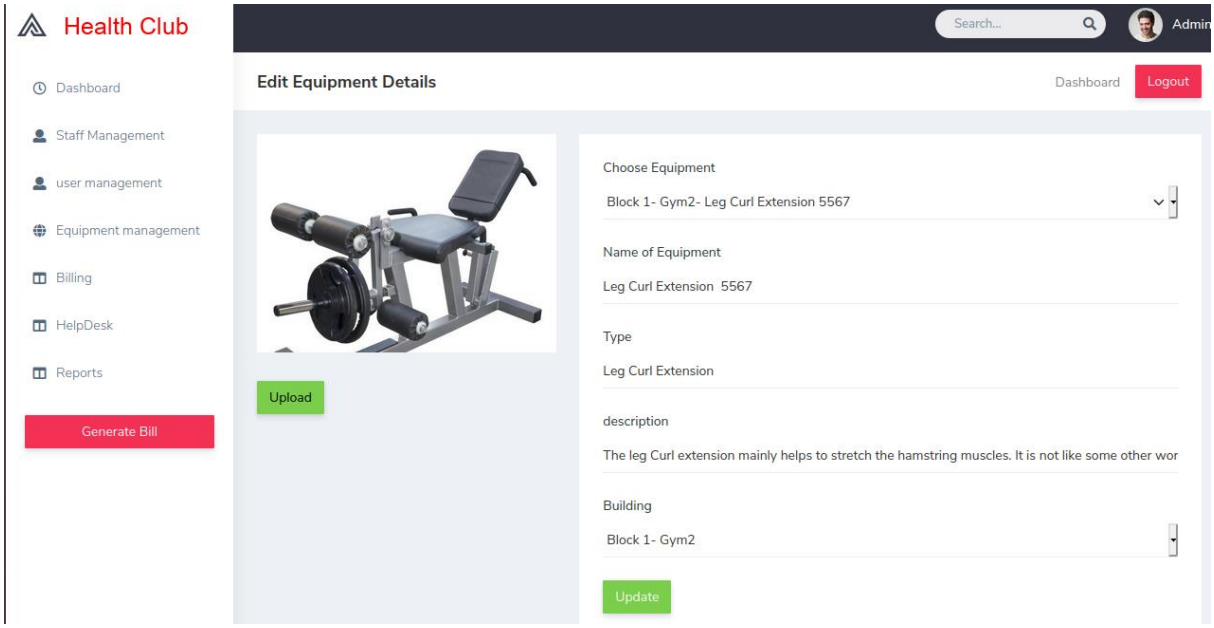
X. USER ATTENDANCE



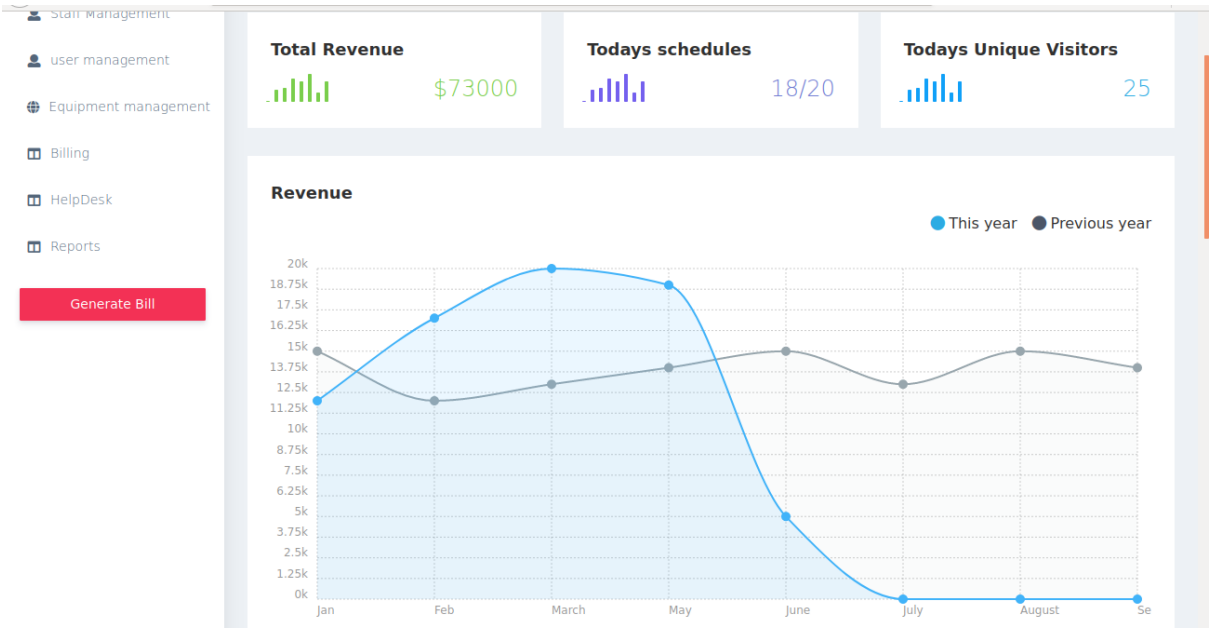
XI. ADD EQUIPMENT



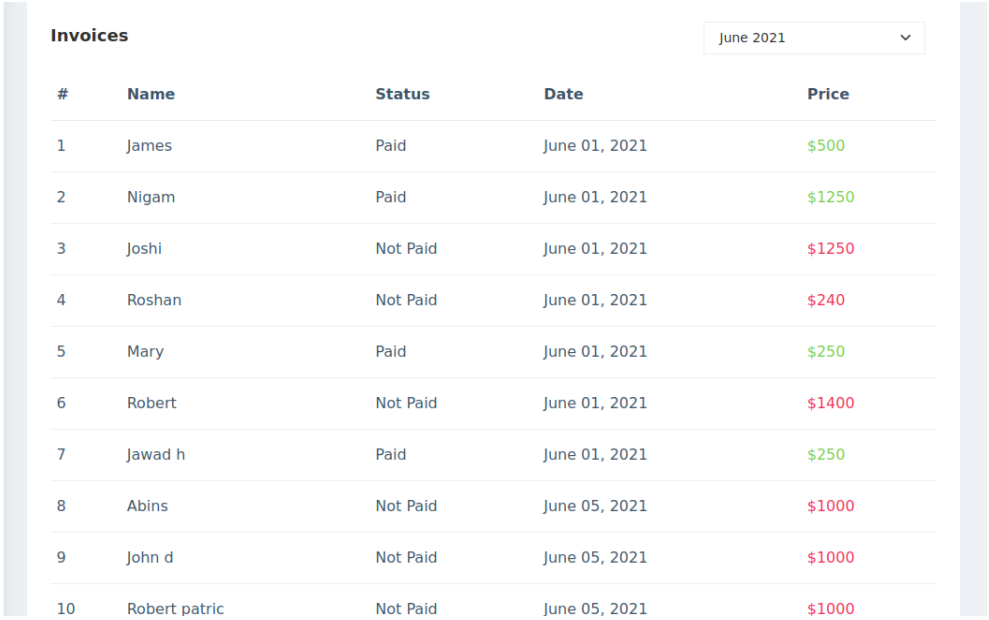
XII. EDIT EQUIPMENT



XIII. DASHBOARD



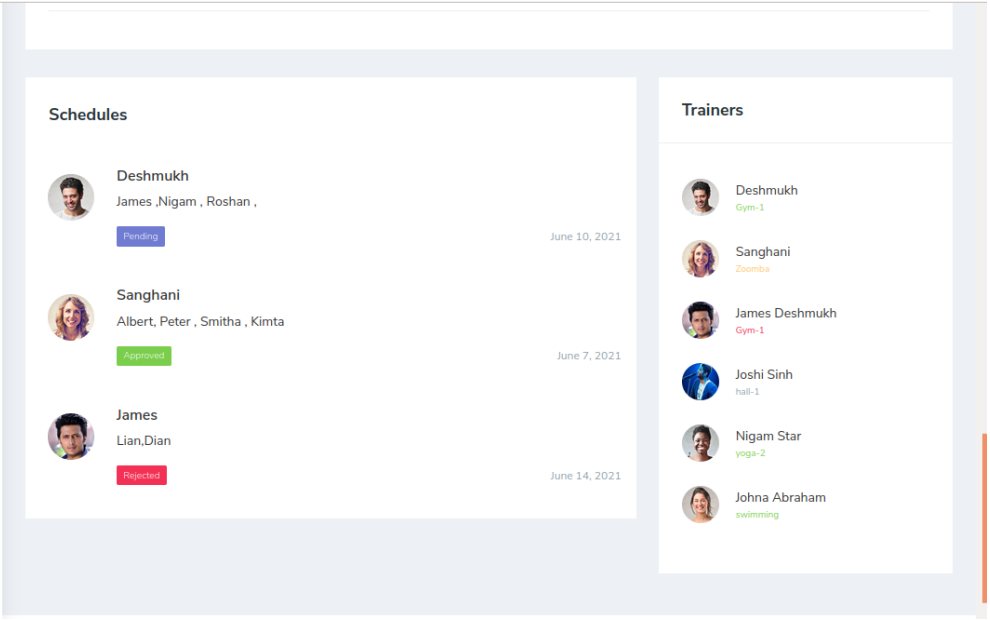
XIV. INVOICES



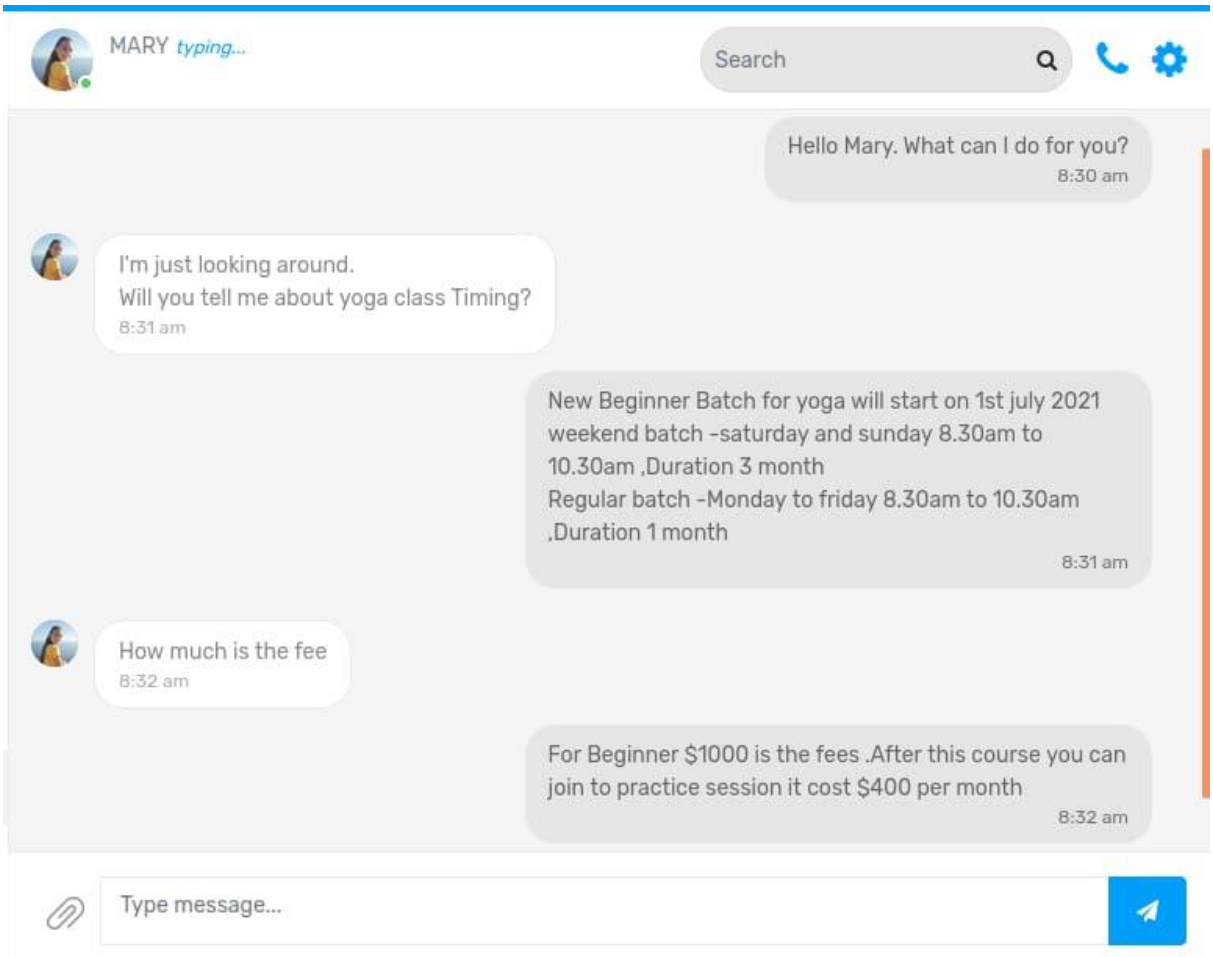
Invoices — June 2021

#	Name	Status	Date	Price
1	James	Paid	June 01, 2021	$500
2	Nigam	Paid	June 01, 2021	$1250
3	Joshi	Not Paid	June 01, 2021	$1250
4	Roshan	Not Paid	June 01, 2021	$240
5	Mary	Paid	June 01, 2021	$250
6	Robert	Not Paid	June 01, 2021	$1400
7	Jawad h	Paid	June 01, 2021	$250
8	Abins	Not Paid	June 05, 2021	$1000
9	John d	Not Paid	June 05, 2021	$1000
10	Robert patric	Not Paid	June 05, 2021	$1000

XV. SCHEDULE



XVI. HELPDESK



CHAPTER 9

CONCLUSION

9.1 System Implementation

The purpose of System implementation as making the new system making available to be prepared set of users and positioning ongoing support and maintenance of the system within the performing organization. At a final level of detail, deploying the system consists of executing all steps necessary to educate the consumers on the use of a new system, placing the newly developed system into production, continuing that all data required at the start of the operations is available and accurate, and validating that business functions that interact with the system are functioning properly.

The implementation involves following things:

• Careful planning.

• Investigation of the system considerations.

• Design the method to achieve the changeover.

• Evaluation of change over method.

There are three types of implementations:

• Implementation of a computer system to replace a manual system. The problems encountered are converting files, training users, creating accurate files and verifying printouts for integrity.

• Implementation of a new computer system to replace an existing one. This is usually a difficult conversion. If not properly planned, there can be many problems. Some large computer systems have taken as long as a year to convert.

• Implementation of a modified application to replace the existing one, using the same computer. This type of conversion is relatively easy to handle, provided there are no major changes in the files. Every system requires periodic evaluation after implementation.

This is to review the performance of the system and to evaluate against established standard or criteria. A study is conducted for measuring the performance of the system against pre-defined requirements. This study results a post-implementation review that determines how well the system continues to meet the performance specification.

9.2 Conclusion

In previous work human has to adjust to the timing of the health club and it was difficult to manage the schedules, payments, manual attendance etc. this make uncomfortable for users and staff. And the management is forces to appoint more members to manage the health club duties and it make expensive. Thus proposed system is more reliable than the previous existing systems. This system offers features like membership management, reservation management, automatic attendance tracking, virtual trainer and helpdesk, class management and auto class schedule, notification for user regarding the recurring payments and schedules.

24/7 access control for the user so that admission process is every time available. The attendance is managed using face recognition and biometric. .This system marks attendance from multiple locations with a cloud stored database. The automated notification is sent to the user and the staff. With this automation module, admin can communicate special offers, class schedules, payment confirmations, contract due dates. And can automate the sign-up process via the client portal for more user convenience. Automatic and reliable recurring payments set up for all fitness membership dues. Management staff manage the staff operations in the health club with ease. Dynamic employee scheduling, commission programs, and notifications for trainers and class instructors to help keep employees organized.

9.3 Future Enhancement

- This project can be modified at any time by adding any more features and can develop the databases with more new features.
- Future work include video analysing of equipment and predict the life of the equipment's.
- Can make more accessible and friendly for user with adding technologies using IOTs, Robots etc.
- Virtual reality can be implemented that is a person interacting with three dimensional environment using electronic devices.

BIBLOGRAPHY

1. Books

- ✓ Kenneth.S.Rubin, Essential Scrum: A Practical Guide to the Most Popular Agile Process, First Edition

- ✓ Allen B. Downey Think Python: An Introduction to Software Design, Second Edition

- ✓ **OpenCV (2019)** OpenCv—Python Core— [online]

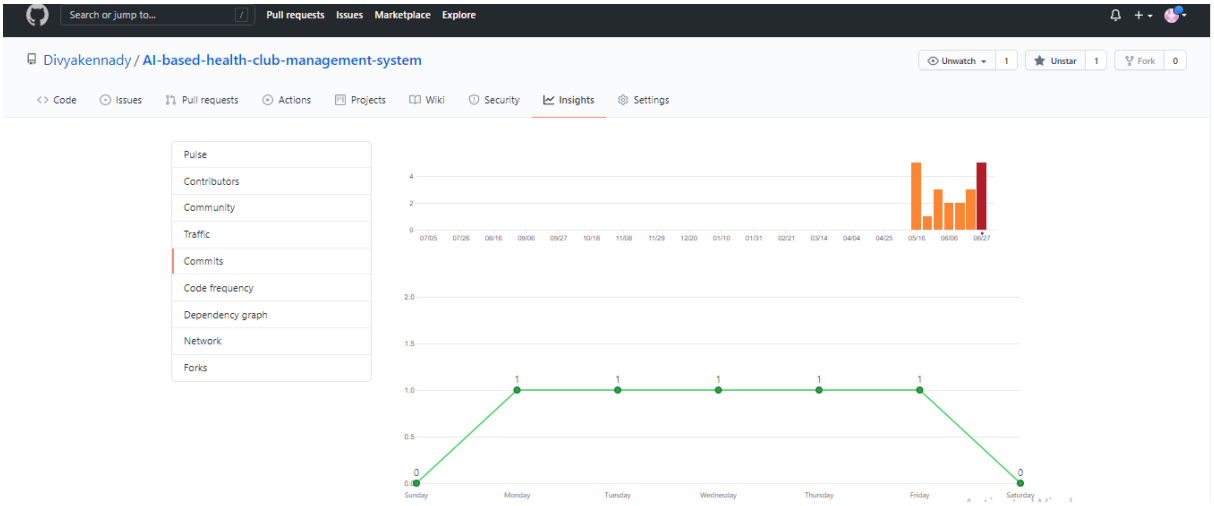
2. Websites

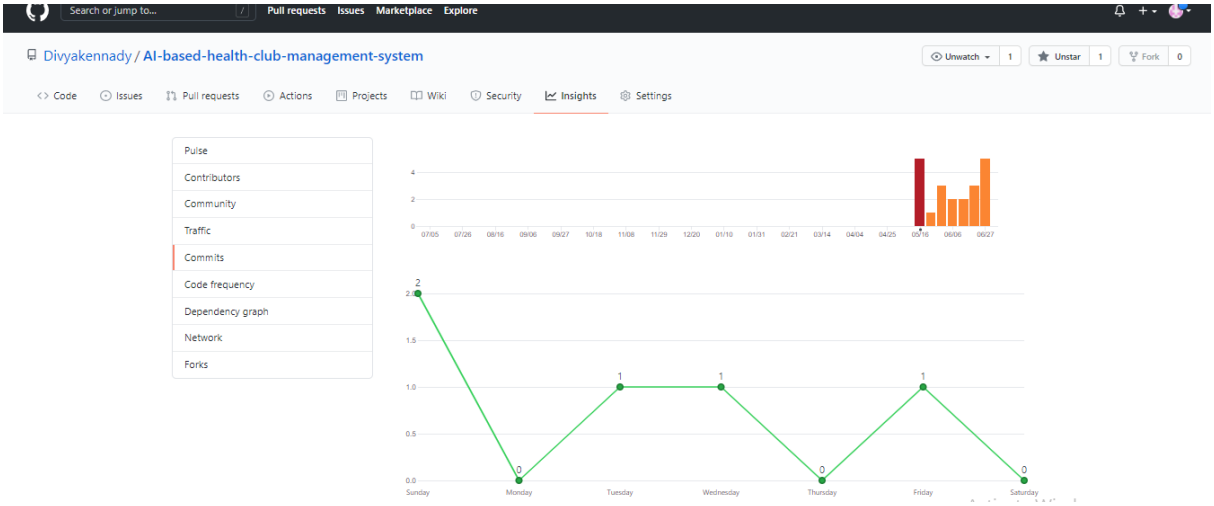
- ✓ https://www.javatpoint.com/python-tutorial
- ✓ https://www.tutorialspoint.com/python/index.html
- ✓ https://www.tutorialspoint.com/mysql/mysql-introduction.html
- ✓ https://www.tutorialspoint.com/opencv/opencv_overview.htm

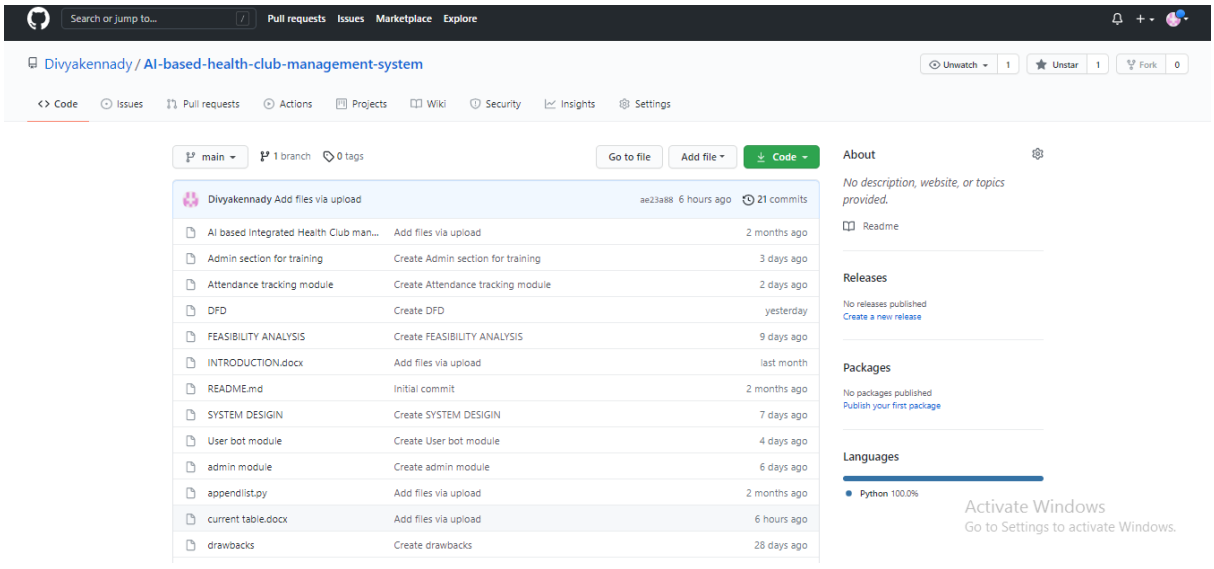
3. Journal and Publications

- Chen Chi-Lun, "The study of Members' Participating Motivation Customer Satisfaction and Repurchase Intention about Health and Fitness Club-A case study of GYMLUX FITNESS CLUB", *Master dissertation*, 2007.
- V. S. Manjula and L. D. S. S. Baboo, "Face detection identification and tracking by PRDIT algorithm using image database for crime investigation", *Int. J. Comput. Appl.*, vol. 38, no. 10, pp. 40-46, Jan. 2012.

Git History


Search or jump to...
Pull requests
Issues
Marketplace
Explore
Divyakennady / AI-based-health-club-management-system
Unwatch 1
Unstar 1
Fork 0
Code
Issues
Pull requests
Actions
Projects
Wiki
Security
Insights
Settings
Pulse
Contributors
Community
Traffic
Commits
Code frequency
Dependency graph
Network
Forks
Sunday
Monday
Tuesday
Wednesday
Thursday
Friday
Saturday


Search or jump to...
Pull requests
Issues
Marketplace
Explore
Divyakennady / AI-based-health-club-management-system
Unwatch 1
Unstar 1
Fork 0
Code
Issues
Pull requests
Actions
Projects
Wiki
Security
Insights
Settings
Pulse
Contributors
Community
Traffic
Commits
Code frequency
Dependency graph
Network
Forks
Sunday
Monday
Tuesday
Wednesday
Thursday
Friday
Saturday


Search or jump to...
Pull requests
Issues
Marketplace
Explore
Divyakennady / AI-based-health-club-management-system
Unwatch 1
Unstar 1
Fork 0
Code
Issues
Pull requests
Actions
Projects
Wiki
Security
Insights
Settings
main
1 branch
0 tags
Go to file
Add file
Code
Divyakennady Add files via upload
ae23a88 6 hours ago
21 commits
AI based Integrated Health Club man... Add files via upload 2 months ago
Admin section for training Create Admin section for training 3 days ago
Attendance tracking module Create Attendance tracking module 2 days ago
DFD Create DFD yesterday
FEASIBILITY ANALYSIS Create FEASIBILITY ANALYSIS 9 days ago
INTRODUCTION.docx Add files via upload last month
README.md Initial commit 2 months ago
SYSTEM DESIGIN Create SYSTEM DESIGIN 7 days ago
User bot module Create User bot module 4 days ago
admin module Create admin module 6 days ago
appendlist.py Add files via upload 2 months ago
current table.docx Add files via upload 6 hours ago
drawbacks Create drawbacks 28 days ago
About
No description, website, or topics provided.
Readme
Releases
No releases published
Create a new release
Packages
No packages published
Publish your first package
Languages
Python 100.0%
Activate Windows
Go to Settings to activate Windows.

APPENDICES

1. LIST OF TABLES

Table No	Table name	Page No
5.1	Admin_login	36
5.2	Staff_login	36
5.3	Staff_registration	36
5.4	User_registration	37
5.5	Class_schedule	37
5.6	Building	37
5.7	Equipment	38
5.8	User_bill	38
5.9	Subscription_plan	38
5.10	User_subscribtion	39
5.11	Bill_details	39
5.12	Staff_attendance	39
5.13	User_attendance	39
5.14	Input and output	43
7.1	Testing results	52

2. LIST OF FIGURES

Figure No	Figure name	Page no
4	System diagram	29
5.1	DFD Components	31
5.2	Context diagram (level 0)	32
5.3	Level 1 for admin	32
5.4	Level 1.1 for admin (staff management)	33
5.5	Level 1.2 for admin (user management)	33
5.6	Level 1.3 for admin (equipment management)	34
5.7	Level 1.4 for admin (billing)	34
5.8	Block diagram for virtual helpdesk	35
5.9	Block diagram for attendance tracking	35
I.	Admin login	54
II.	New staff registration 1	54
III.	New staff registration 2	55
IV.	Edit staff	55
V.	View staff details	56
VI.	Staff attendance	56
VII.	Add user	57
VIII.	View or edit user details	57
IX.	View online user registration	58
X.	User attendance	58
XI.	Add equipment	59
XII.	Edit equipment	59
XIII.	Dash board	60
XIV.	Invoices	60
XV.	Schedule	61
XVI.	Helpdesk	61
10	Github	66

3. ABBREVIATIONS AND NOTATION

- DFD

(Data Flow Diagram) is a graphical representation of the "flow" of data through an information system, modeling its process aspects. A DFD is often used as a preliminary step to create an overview of the system without going into great detail, which can later be elaborated. DFDs can also be used for the visualization of data processing (structured design).

- DB

A database is an organized collection of data, generally stored and accessed electronically from a computer system. Where databases are more complex they are often developed using formal design and modeling techniques.