1. **Title of Project: Personal Pulse Fitness**

2. **Name of college:** Yashoda Technical Campus, Satara.

3. **Name of Department:** Computer Science and Engineering.

4. **Name of students:**

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    2. Miss. Sakshi Somnath Rajput.
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5. **Name of guide:** Mrs. S. S. Atpadkar

6. **Relevance:**

    Pulse Fitness System is highly relevant for modern fitness centers as it automates and streamlines key operations like member registration, recommendation, trainers, schedules, diet plans, effective GUI. By centralizing data, it enhances efficiency, reduces administrative workload, and improves the overall member experience. The system helps gym owners manage finances, track member progress, and offer personalized services, all while ensuring scalability and security. It also supports marketing efforts, retention strategies, and provides insights for better decisionmaking. Overall, a Gym Management System optimizes operations, boosts revenue, and fosters member satisfaction, making it essential for gym growth and success.

7. **Literature Review:**

A .AI Based Gym Management System with Body Performance Index measurement and Tips.

The GMS-BPI Gym System is like a super cool computer program for gyms! It helps gym owners and people who go to the gym. For the owners, it makes things easier like signing up new members, planning classes, fixing gym stuff, and keeping track of money. There's even a fancy screen that shows how the gym is doing. But the awesome part is how it helps people who work out. GMSBPI uses special gadgets to collect info about how fit they are. So, people can see how healthy they're

getting, make goals, and get workout plans just for them. And it figures out a special number called the Body Performance Index to show how fit someone is overall. Recent Techniques – Wearable Fitness Trackers Integration, AI-Powered Personalized workout Plans, VR, AR Techniques for Workout Enhancements. Challenges Faced by the GMS-BPI System – Data Privacy and Security Concerns, Integration Complexity with diverse devices, User Engagement & Retention, Accuracy and Reliability of BPI.

B. Smart Gym Management System.

The system about the use of the technology in order to reach a better lorem is to become part of human life, and throughout the year, the technonlogy is available and developed to meet the needs of members of all mankind; this did not stop them. Looking humans always hava to wake up and be healthy fitness them. We, therefore, we believe, to resolve on the application of the problem is that users of Android, our thoughts, it is to help the users to administer the healthcare system in fitness and nutrition. This project was developed by the two methodologies and prortotyping model, and a spiral. The system is used to project dramatically android broadcast worldwide, thus allowing access to a large number of people. The people, too, can be done through the provision of a hundred of the same, by means of the application of the questionnaire, however is suggested by this acceptance of a larger one.

C. Gym ERP Management System using Machine Learning

To address this concern, a proposed solution involves implementing a contactless attendance monitoring system integrated with an Enterprise Resource Planning (ERP) platform. This system utilizes facial recognition technology to identify gym members upon entry without the need for physical contact. This innovative system incorporates facial recognition techniques utilizing Elman neural network algorithms. Image fragmentation using Curvelet transform methods and subsequent feature extraction via Principal Component Analysis (PCA) are integral parts of this technology. Moreover, the system is equipped with a specialized camera system designed specifically for accurate facial recognition purposes. Impressively, the proposed algorithm demonstrates a high accuracy rate of 94%, ensuring reliable identification of gym members without direct physical

interaction. By leveraging these advanced technologies, gyms strive to not only enhance safety measures amid the pandemic but also optimize their operations. The implementation of a contactless attendance monitoring system, combined with facial recognition capabilities, not only reduces physical touchpoints but also streamlines gym procedures, ensuring a secure and efficient experience for members entering the facility.

D. Gym Management System Using Augmented Reality

Gyms have become a part of daily routines of many individuals. An app to take care of all the gym related activities would be a useful aid for these individuals. All of the gym related information in one spot. This app will show the gyms nearby to the user along with the joining fees. This will help the user to compare and decide which gym they want to register at. It will keep a record of the attendance of the user.. The user can scan a machine in the gym using this app and it will show them the right way to use the machine. This will be of great aid to the user if they don't know the use of a particular machine. Workout and diet plans will be listed for the users to follow.

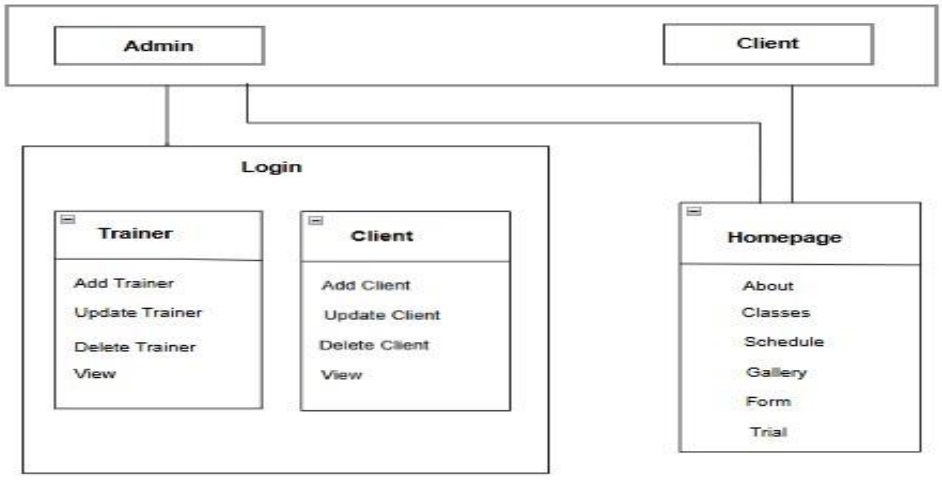
E. Fitness Center: An Automated System for Gym Notification with Client Attendance and Guidance System

Many gym owners have paper receipts for the fees. It is very difficult for both the members and the trainer to keep all the paper receipts safe. Also it is difficult to manage all the client at a time and mark their attendance and provide exercises and diet plans. Some of the issues that arise when using an online application are: There are many people who are not able to use it due to various reasons. So, we are making an Android app which will help them. This project will allow the gym owner to manage all the receipts and also notify the users about their fees, mark their attendance by own, provide them proper diet plans as per the BMI and body type. Also this application will help them by providing exercise guidance clips. Gyms and workout studios often only focus on getting people to purchase year-long memberships. The holistic approach to the customer's wellbeing, be it physical exercise or mental state and motivation – is missing from most of the gyms.

8. Problem identification:

The problem this project addresses is the for a gym recommendation system project, it's essential to understand the main issues users face when searching for a gym. Often, people don't know all the gym options available in their area, especially ones that fit their specific needs. It can also be hard to compare gyms based on factors like facilities, membership prices, and personal training options. Since everyone has different fitness goals—such as losing weight, building muscle, or general fitness users need personalized recommendations instead of one-size-fits-all suggestions. Another problem is assessing the quality and reliability of gyms, as some reviews or ratings may not be trustworthy. Additionally, many systems don't adapt to user preferences over time, which means recommendations might not be as accurate as they could be. Some users also prefer gyms with real-time information about crowd levels so they can avoid peak hours. Addressing these issues will help make a gym recommendation system more useful and tailored to each user's needs.

9. Block Diagram:



10. Scope of Project:

The scope of the gym recommendation system project focuses on helping users find the best gym that matches their needs and preferences. This system will include a database of local gyms with details like location, facilities, membership costs, and additional services such as personal training or group classes. It will also allow users to filter gyms based on their fitness goals, like weight loss, muscle gain, or general wellness, ensuring more personalized recommendations. To enhance user experience, the system will provide user reviews and ratings to help people make informed decisions, while also verifying reviews to ensure authenticity. It will be designed to learn from user preferences over time, refining recommendations as users interact with the platform. Additionally, where possible, it will incorporate real-time information on gym occupancy, helping users choose less crowded times for their workouts.

Overall, the project will simplify the gym search process, save users time, and provide a reliable way to find a gym that fits their individual goals and lifestyle.

11. Objective:

1.To make the effective User Interface for customers to understand and access Facilities.

2.To make the recommendation system to recommend customers various diet plans according to their health using Machine Learning.

3.To make image processing system to show the current or live visuals of their customers of doing the workout.

4.To make website Responsive.

12. Proposed work:

1. **Gym Information Database**: Collect and display detailed information about local gyms, including location, membership options, facilities, and services (e.g., personal training, group classes).
2. **Intelligent Recommendation Engine**: Develop an engine that recommends gyms based on user preferences and fitness goals (e.g., weight loss, muscle gain, general fitness).

3. **User Interaction and Feedback**: Allow the system to learn from user interactions, refining recommendations over time based on their preferences.
4. **User Reviews and Ratings**: Display genuine reviews and ratings from actual users, with mechanisms to verify their authenticity.
5. **Real-Time Updates**: Provide real-time information such as gym crowd levels, helping users avoid peak hours and select the best time for their workouts.
6. **User-Friendly Interface**: Design an easy-to-use platform that simplifies the gym search process, making it more convenient for users to find gyms that fit their needs.

13. Motivation for work:

The motivation for developing the gym recommendation system stems from the growing need for a more efficient, personalized way to find gyms that suit individual fitness goals. Many people struggle with selecting the right gym because of the overwhelming number of options and lack of clear, easily accessible information. Gym goers often waste time searching for gyms, comparing facilities, and deciding which gym meets their specific needs. This system aims to simplify that process by offering tailored recommendations based on user preferences, saving time and reducing frustration.

14. Expected Outcome:

The expected outcome of the gym recommendation system project is to provide users with personalized gym suggestions that align with their fitness goals, preferences, and location. This will simplify the process of finding a suitable gym, saving users time and effort by presenting clear comparisons of available options. The platform will enhance user experience by offering detailed gym information, real-time updates (such as crowd levels), and reliable user reviews, ensuring that users make informed decisions. Over time, the system will adapt to user interactions, improving its recommendations based on individual preferences and habits. Ultimately, the project aims to increase user satisfaction by providing a trustworthy, efficient, and user-friendly way to find the right gym, helping users stay motivated and on track with their fitness journeys.

15. Expected Date of Completion: 25-05-2025

16. References:

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[B]. A.V. Dinesh Kumar, K Bhargav Ram Rayal, M.Saraswathi Dept. of CSE SCSVMV University, Enathur Kanchipuram - 631561 " Smart Gym Management System".

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[E]. Rashmi Dadge, Aashiya Sheikh, Deepak Gangwani, Manvi Koche and Pallavi Nandeshwar Department of Computer Science, Jhulelal Institute of Technology, Nagpur, Maharashtra, India, "Fitness Center: An Automated System for Gym Notification with Client Attendance and Guidance System"

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