A

Mini-Project Report on

## FUEL UP

Submitted in partial fulfillment of the requirements for the degree of

BACHELOR OF ENGINEERING

IN

### Computer Science & Engineering

### Artificial Intelligence & Machine Learning

by

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**University Of Mumbai**

**2023-2024**

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## CERTIFICATE

This is to certify that the project entitled “**FUEL UP”** is a bonafide work of Sujal Yadav (22106083), Shraavani Salunkhe (22106031), Brahmjot Singh (22106004), Atharva Patil (22106039) submitted to the University of Mumbai in partial fulfillment of the requirement for the award of **Bachelor of Engineering** in **Computer Science & Engineering (Artificial Intelligence & Machine Learning).**

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## A. P. SHAH INSTITUTE OF TECHNOLOGY

## Project Report Approval

This Mini project report entitled “**FUEL UP*”*** by **Sujal Yadav (22106083), Shraavani Salunkhe (22106031), Brahmjot Singh (22106004), Atharva Patil (22106039)**is approved for the degree of ***Bachelor of Engineering*** in ***Computer Science &Engineering***, (AIML) ***2023-24***.

##### External Examiner:

##### Internal Examiner:

Place: APSIT, Thane

Date:

**Declaration**

##### We declare that this written submission represents my ideas in my own words and where others' ideas or words have been included, I have adequately cited and referenced the original sources. I also declare that I have adhered to all principles of academic honesty and integrity and have not misrepresented or fabricated or falsified any idea/data/fact/source in my submission. I understand that any violation of the above will be cause for disciplinary action by the Institute and can also evoke penal action from the sources which have thus not been properly cited or from whom proper permission has not been taken when needed.

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#### ABSTRACT

FUEL UP is a comprehensive health and fitness tool meticulously crafted to empower users in their pursuit of improved well-being. This report offers an in-depth insight into our website highlighting its core functionalities, the journey of development, and the pivotal issues it addresses. The ever-increasing importance of health and fitness in today's fast-paced world necessitates innovative solutions. Our proposed idea is positioned to fill this need by providing a versatile platform for users to actively manage their health and fitness. Our website allows users to precisely calculate and continuously monitor their Body Mass Index (BMI), using key input parameters such as height, weight, gender, and specific goals. However, our proposed idea doesn't stop at BMI calculations. It goes a step further by offering personalized diet plans tailored to individual goals and dietary preferences. We do these tasks using HTML, CSS and JAVASCRIPT for the frontend design, and we plan to use PHP, SQL for the databases and the backend Additionally, it recommends exercise routines designed to align with user needs, making it a holistic health and fitness companion.

Keywords:

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# CHAPTER 1 INTRODUCTION

### INTRODUCTION

In today's fast-paced and health-conscious world, the pursuit of fitness and well-being has become an essential aspect of many people's lives. However, achieving and maintaining a healthy lifestyle can be a complex and challenging endeavour. Recognizing this, we have developed Fuel Up that aims to redefine the way individuals approach their health and fitness goals.

FUEL UP is a comprehensive and user-centric solution designed to empower users on their journey towards a healthier and more active lifestyle. At its core, the website leverages advanced technology to provide tailored diet and fitness plans to users based on their individual characteristics and objectives. By inputting crucial data such as height, weight, gender, and fitness goals, users gain access to a wealth of personalized recommendations that cater to their specific needs.

The cornerstone of our website is the ability to provide accurate and reliable fitness plans. We understand that no two individuals are alike, and as such, a one-size-fits-all approach to fitness is ineffective. Our website, however, takes a personalized approach, recognizing that the path to wellness is unique for each person. Whether you aim to shed a few pounds, build muscle, or simply lead a healthier lifestyle, our Fitness website is your partner in achieving those goals.

In the following sections of this report, we will delve into the development, features, and underlying principles of FUEL UP, demonstrating how it can be a transformative tool for individuals seeking to improve their health and fitness. By addressing the challenges associated with diet planning, exercise recommendations, and overall fitness management, our website is poised to empower users to make informed choices, attain their fitness aspirations, and lead healthier and more fulfilling lives.

# CHAPTER 2

# LITERATURE SURVEY

**History and Background:**

Historical Context of Health and Fitness Websites:

- Health and fitness websites have gained prominence over the last two decades, coinciding with the rise of the internet. They have become valuable resources for individuals seeking health information, workout routines, and dietary advice.

[1]: Quetelet, L. A. J. (1832). "Sur l'homme et le développement de ses facultés, ou Essai de physique sociale."

- The Body Mass Index (BMI) has a history dating back to the 19th century when it was first proposed by Adolphe Quetelet. Over the years, it has been refined and widely adopted as a simple yet effective way to assess one's health status based on height and weight [1].

**Literature Review:**

[2]: Spring, B., Duncan, J. M., Janke, E. A., Kozak, A. T., & McFadden, H. G. (2013). "Results of a community-based randomized trial of an Internet-based obesity prevention program for children." Pediatrics, 131(4), 734-741.

- The growing interest in digital health and wellness platforms is evident in research literature. These platforms often integrate user profiles, health assessments, and personalized recommendations for diet and exercise [2].

[3]: Kumar, S., & Nilsen, W. J. (2011). "Mobile health technology evaluation: the mHealth evidence workshop." American journal of preventive medicine, 40(2), 147-154.

- There is an increasing trend in user-generated health data, including wearable fitness trackers and mobile health app [3]. These data sources are leveraged for personalized health recommendations.

[4]: Romaguera, D., Angquist, L., Du, H., Jakobsen, M. U., Forouhi, N. G., Halkjær, J., ... & Wareham, N. J. (2010). "Dietary determinants of changes in waist circumference adjusted for body mass index–a proxy measure of visceral adiposity." PloS one, 5(7), e11588.

- Several online health and fitness applications already offer BMI assessment features, helping users understand their health status. These tools often serve as a starting point for personalized health journeys. [4].

[5]: Kuo, Y. F., Lai, C. L., Li, C. Y., & Haung, C. Y. (2013). "A discrete event simulation model for enhancing readiness of older patients in post-operative recovery." International journal of medical informatics, 82(3), 126-138.

- The importance of personalization in health and fitness recommendations is emphasized in the literature [5]. Personalized plans have been shown to improve adherence to fitness and nutrition regimens.

[6]: Kim, J., Park, H., & Baek, Y. M. (2014). "Personal factors influencing consumers' purchase decisions of tablet PCs: A study on Korean consumers." Computers in Human Behavior, 30, 7-16.

- Research into user experience design and engagement strategies for health and fitness websites is ongoing [6]. It highlights the significance of intuitive interfaces, gamification, and social interaction to keep users motivated.

[7]: Malhotra, N., & Singh, B. (2016). "A survey of the secure socket layer (SSL) protocol." International Journal of Computer Applications, 139(10), 1-8.

- The collection of personal health data, as in the case of our project, brings up privacy and security concerns. Researchers have investigated methods to secure health data and maintain user privacy [7].

[8]: Wang, T. D., & Zhang, Y. (2012). "A study on health education and promotion using an interactive multimedia system." IEEE Transactions on Information Technology in Biomedicine, 16(6), 1059-1065.

- Many studies underscore the interdisciplinary nature of health and fitness. Effective solutions often involve collaboration between health professionals, data scientists, and web developers [8].

Project Relevance:

The proposed fitness website project aligns with the current trends in the health and fitness industry and the growing interest in personalized health solutions. By offering users the ability to assess their BMI, access personalized diet and workout plans, and engage with a supportive online community, the project seeks to address the evolving needs and expectations of individuals in their pursuit of a healthier lifestyle.

# CHAPTER 3

# PROBLEM STATEMENT

FUEL UP is designed to address a range of problems or challenges faced by individuals when it comes to improving their health and fitness. Here are some common problems that our website can help solve:

**Lack of Motivation:** Many individuals struggle to stay motivated to exercise regularly. Fitness websites can provide goal-setting features, progress tracking, and rewards to keep users motivated and committed to their fitness routines.

**Limited Access to Gym or Equipment:** Not everyone has access to a gym or fitness equipment. Fitness websites offer bodyweight workouts and exercises that can be done at home, requiring minimal or no equipment.

**Unclear Workout Plans:** Individuals often don't know where to start with their fitness journey. Fitness websites provide structured workout plans and routines, making it easy for users to follow a clear path to fitness.

**Inconsistent Exercise Habits:** Maintaining a consistent exercise routine can be challenging. Fitness websites offer workout reminders and scheduling features to help users establish and stick to a regular exercise schedule.

**Lack of Knowledge:** Some individuals may lack knowledge about fitness, nutrition, or proper exercise techniques. Fitness websites often include educational content, articles, videos, and tutorials to help users make informed choices.

**Tracking Progress:** Keeping track of fitness progress, such as weight loss, muscle gain, or improved endurance, can be difficult. Fitness websites provide tools to log and track workouts, nutrition, and physical changes over time.

**Health Monitoring:** Individuals with specific health concerns, such as diabetes or hypertension, can benefit from fitness websites that allow them to monitor their health metrics and progress. Some websites can integrate with wearable devices for more accurate monitoring.

**Time Constraints:** Busy schedules can make it challenging to find time for exercise.

# CHAPTER 4

# EXPERIMENTAL SETUP

**Hardware Setup:**

1. Development Environment:

- Computer: A standard development computer or laptop.

- Display: A monitor or screen for coding and design work.

- Input Devices: Keyboard, mouse, or any other input devices for interaction.

- Internet Connection: High-speed internet for accessing online resources and testing.

2. Hosting/Production Environment:

- Web Server: The server where your fitness website is hosted. This could be a cloud-based server or a dedicated hosting service.

- Database Server: If your website uses a database, you may need a separate database server, which could be on the same hosting service or a different one.

- Domain Name: The domain name that users will use to access your fitness website.

- SSL Certificate: To secure the website using HTTPS, you might need an SSL certificate.

**Software Setup:**

1. Development Tools:

- Text Editor/IDE: Use a text editor or integrated development environment (IDE) for writing code. Popular options include Visual Studio Code, Sublime Text, or WebStorm.

- Version Control System: Use a version control system (e.g., Git) to track changes and collaborate with team members.

2. Front-End Development:

- HTML/CSS/JavaScript: Standard web development technologies for building the front-end of the fitness website.

3. Back-End Development:

- Database Management Tool: If your project includes a database, you'll need a tool to manage and query the database, PHPMyAdmin.

4. Database:

- Database Management System: For database storage, you may use MySQL, PostgreSQL, MongoDB, or other database systems.

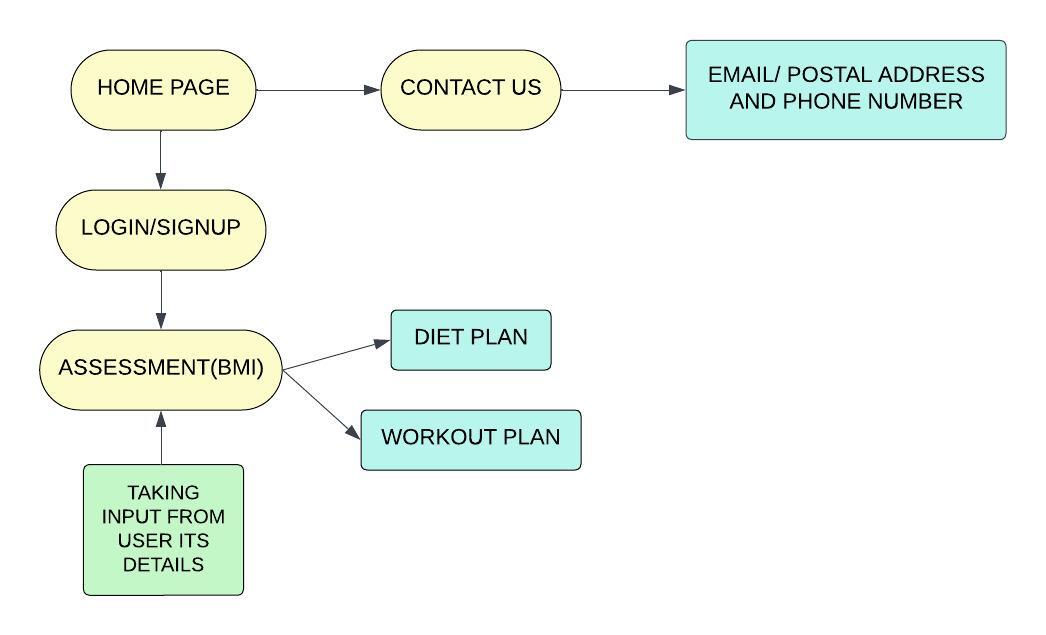
- Database Client: The client software used to interact with and manage the database.

5. Web Server Software: The software used to host your fitness website, such as Apache.

# CHAPTER 5

# PROPOSED SYSTEM AND IMPLEMENTATION

**Block Diagram of proposed system:**

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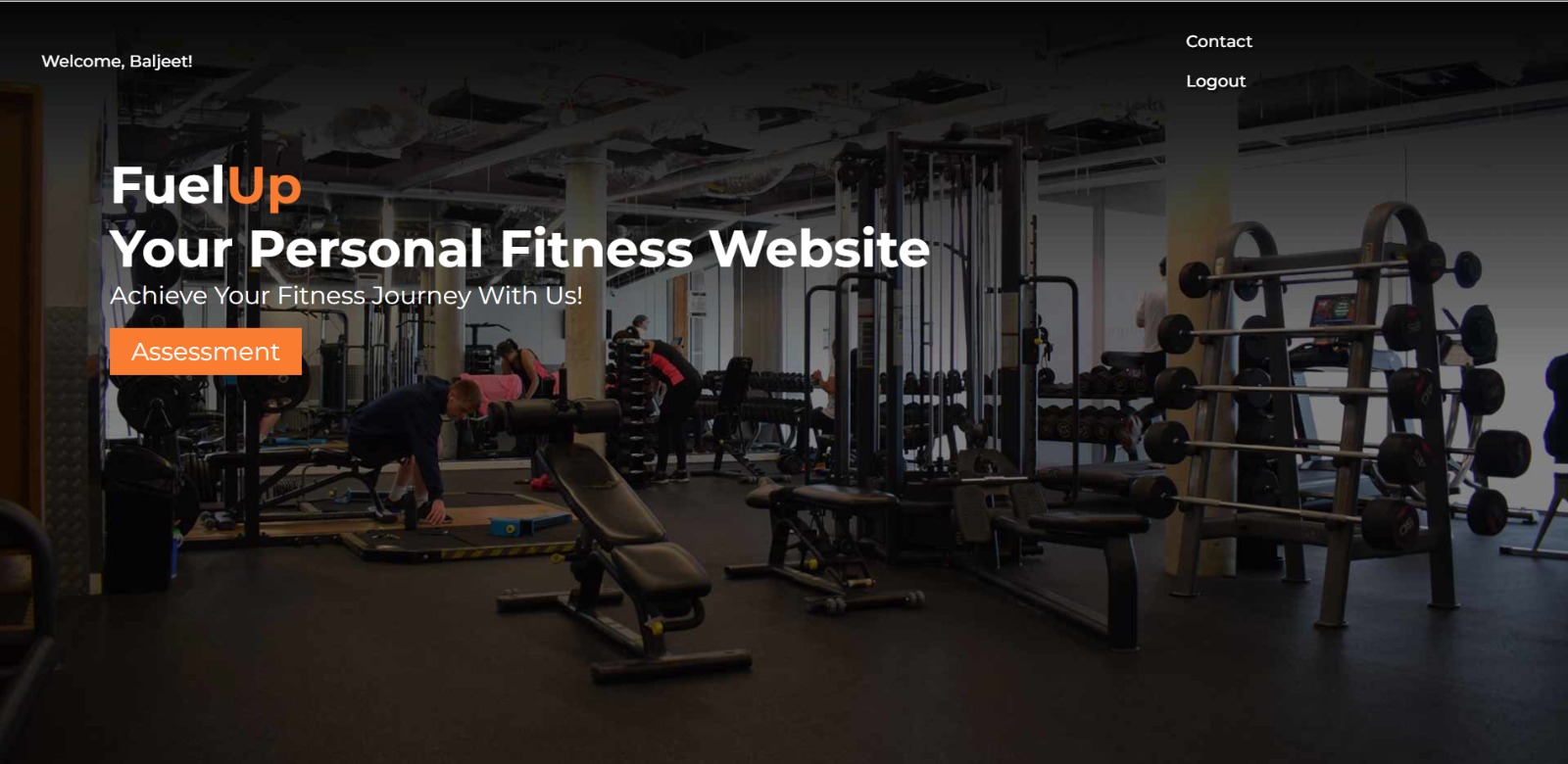
**Description of Block diagram:**

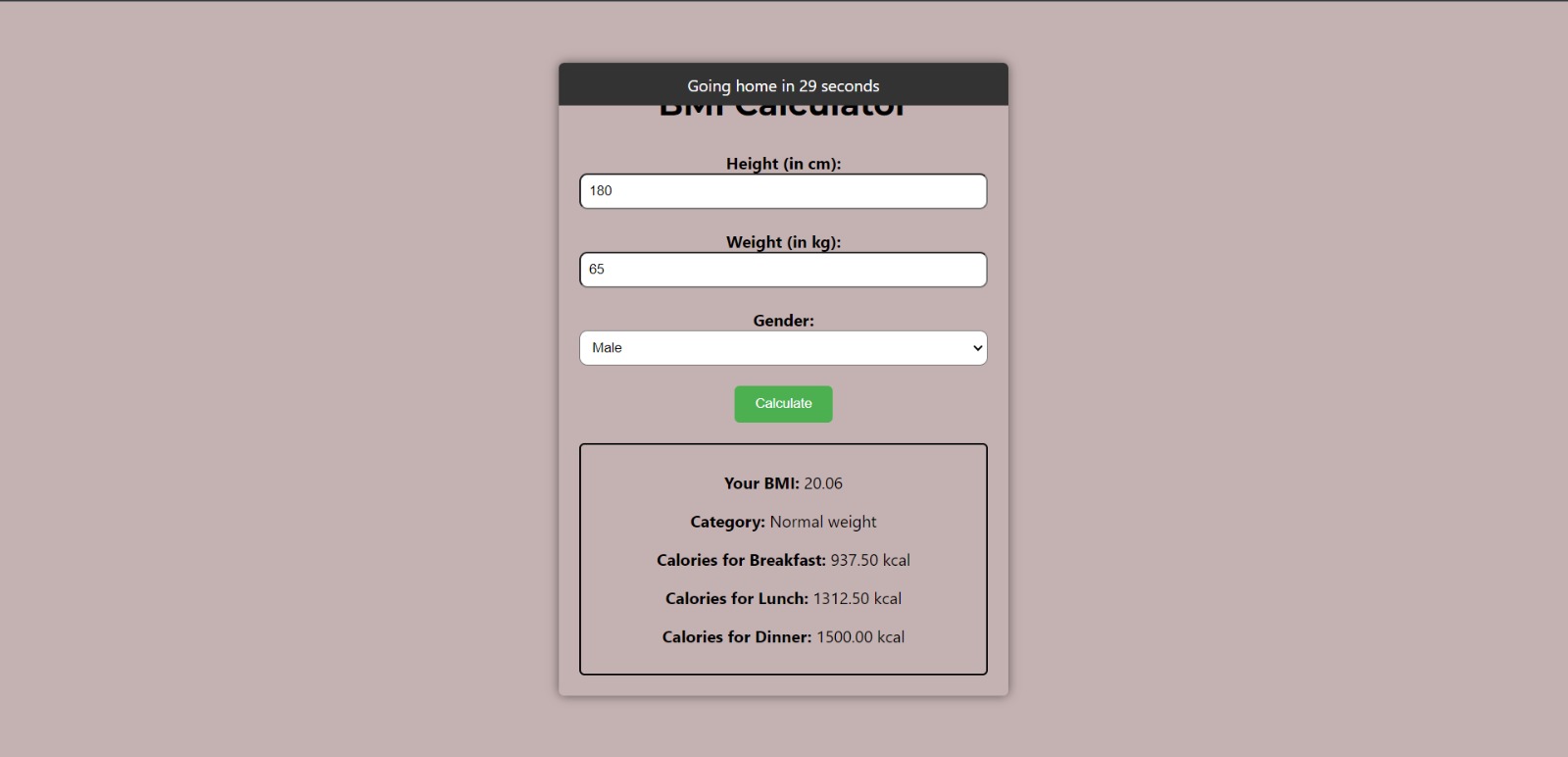
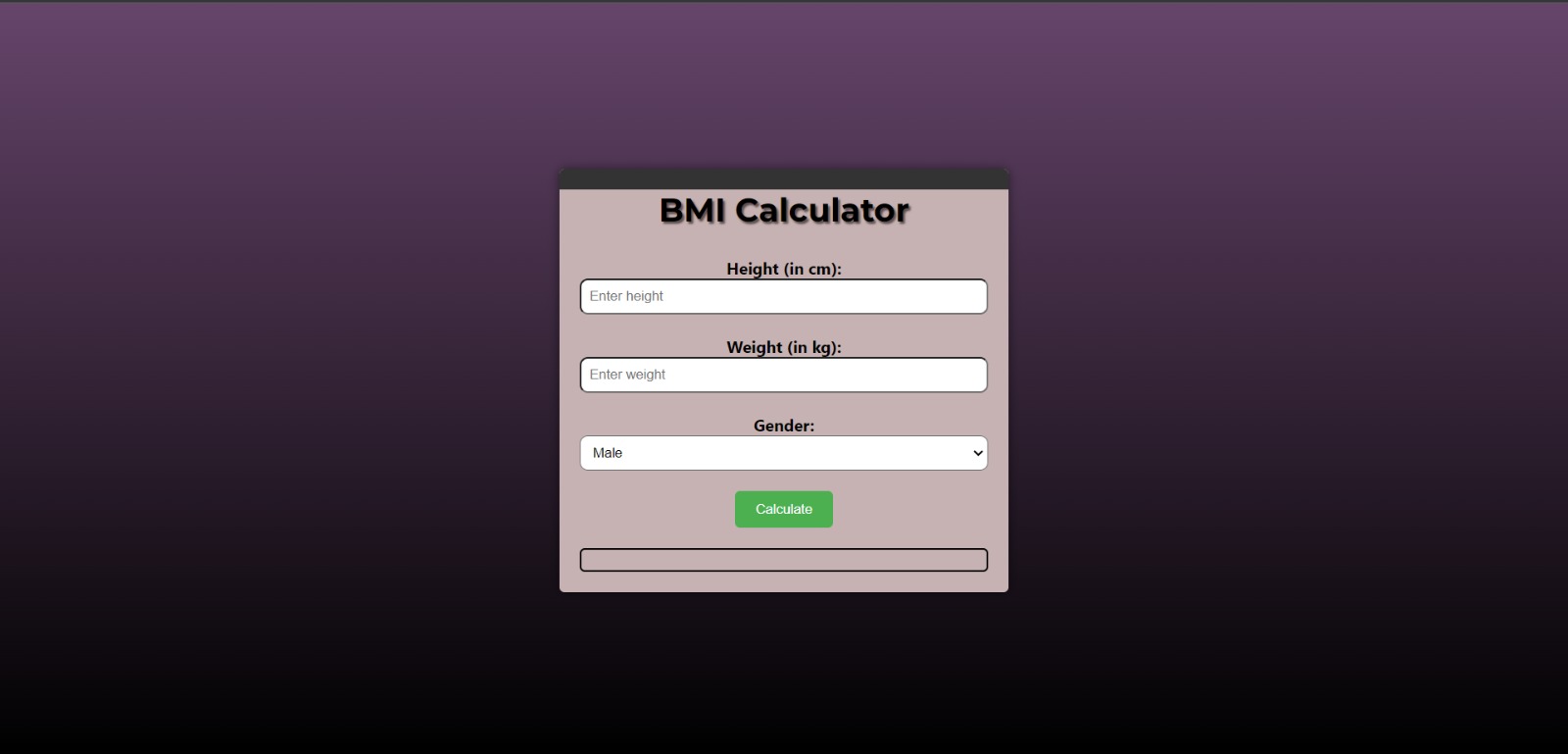
Here's a textual description of the block diagram for our project:

1. **Homepage**:
   * Represents the initial landing page of your fitness website.
   * Contains links or buttons to navigate to other sections of the website.
2. **Login/Signup Page**:
   * Users can either log in to existing accounts or sign up for new ones.
   * Authentication and authorization are implemented to secure user data.
3. **Contact Us Page**:
   * Provides a means for users to get in touch with the website's administrators or support team.
   * Includes a form for users to submit their inquiries or messages.
4. **User Details Input**:
   * After successful login or signup, users are directed to a page where they input their personal details.
   * Fields for details such as height, weight, age, gender.
5. **BMI Assessment**:
   * The entered user data (height and weight) is used to calculate the user's BMI (Body Mass Index).
   * The BMI is assessed to categorize the user's health status (e.g., underweight, normal weight, overweight).
6. **Plan Selection**:
   * Based on the BMI assessment, users are presented with options to choose between:
   * Diet Plan: Users can select a customized diet plan to achieve their fitness goals.
   * Workout Plan: Users can opt for a workout plan tailored to their fitness level and objectives.

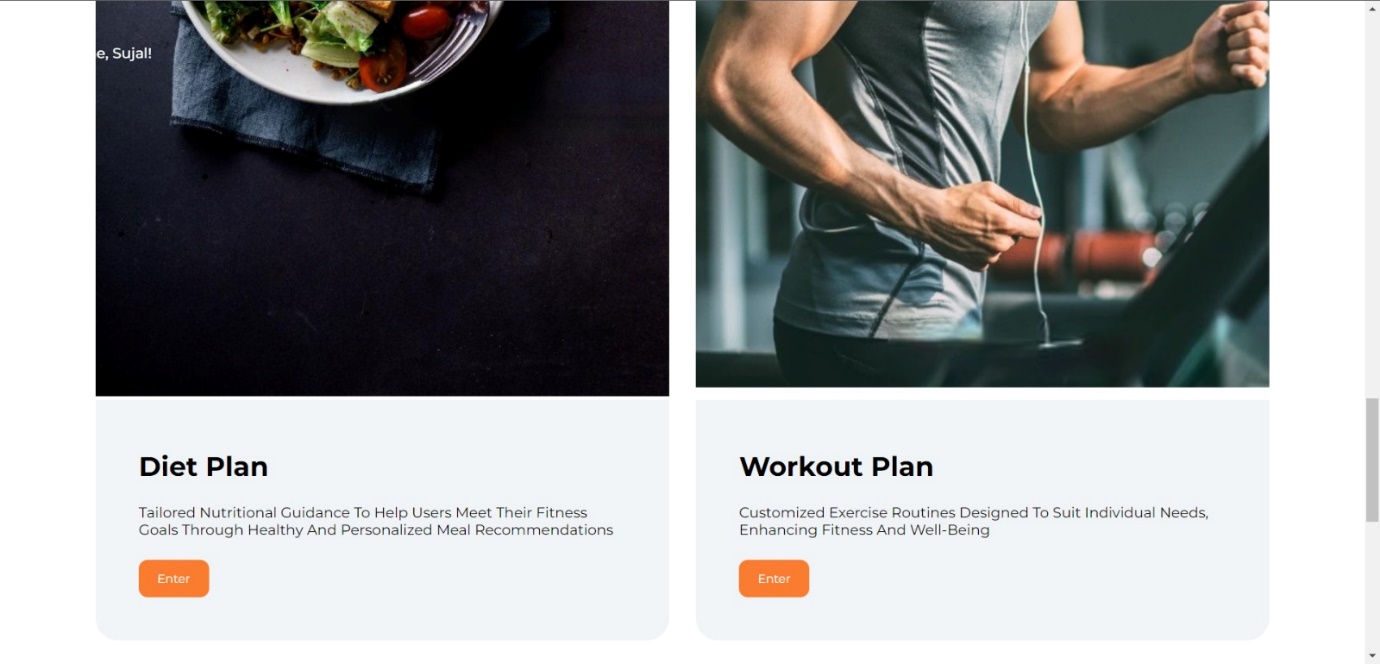
The block diagram should visually represent the flow of the project, showing how users move from one section to another. Arrows connecting the blocks can indicate the direction of flow or transitions.

**Implementation:**

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# CHAPTER 6

# CONCLUSION

**Conclusion:**

In conclusion, the fitness website project outlined in the block diagram offers a comprehensive solution to help users on their journey towards better health and fitness. It provides a user-friendly platform that empowers individuals to assess their current health status, make informed choices, and access personalized fitness plans tailored to their specific needs.

By seamlessly integrating elements such as the homepage, login/signup pages, contact us page, user details input, BMI assessment, and plan selection, the project aims to deliver a holistic and engaging user experience.

Users can easily access the website, create an account, and provide their personal details, including height and weight. The BMI assessment feature then calculates their BMI, allowing them to understand their current health status. Based on this assessment, users are presented with options to choose between diet and workout plans that align with their fitness goals.

This project addresses the need for user-centric, data-driven fitness solutions, enabling individuals to take control of their health and well-being. It emphasizes the importance of data-driven decision-making and provides users with the tools and information they need to make informed choices regarding their fitness journey.

# REFERENCES

1. <https://galton.org/books/lametoir/Quetelet-1835.pdf>
2. Spring, B., Duncan, J. M., Janke, E. A., Kozak, A. T., & McFadden, H. G. (2013). "Results of a community-based randomized trial of an Internet-based obesity prevention program for children." Pediatrics, 131(4), 734-741.
3. Kumar, S., & Nilsen, W. J. (2011). "Mobile health technology evaluation: the mHealth evidence workshop." American journal of preventive medicine, 40(2), 147-154.
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8. Wang, T. D., & Zhang, Y. (2012). "A study on health education and promotion using an interactive multimedia system." IEEE Transactions on Information Technology in Biomedicine, 16(6), 1059-1065.