A

Mini Project Report

on

FitForge – Personalised Fitness and Nutrition Platform

Submitted in partial fulfillment of the requirements for the

degree

Second Year Engineering – Computer Science Engineering (Data Science)

by

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Academic year: 2024-25

CERTIFICATE

This to certify that the Mini Project report on **Fitforge – Personalized Fitness and Nutrition Platform** has been submitted by **Pranav Parab (23107049), Yash Wadekar (23107064), Bhumika Nikam (23107009) and Riya Naikwadi (23107038)** who are bonafide students of A. P. Shah Institute of Technology, Thane as a partial fulfillment of the requirement for the degree in **Computer Science Engineering (Data Science)**, during the academic year **2024-2025** in the satisfactory manner as per the curriculum laid down by University of Mumbai.

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Guide

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1.

Internal Examiner:
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Place: A. P. Shah Institute of Technology, Thane
Date:

ACKNOWLEDGEMENT

This project would not have come to fruition without the invaluable help of our guide **Ms. Harsha Zope** Expressing gratitude towards our HoD, **Ms. Anagha Aher**, and the Department of Computer Science Engineering (Data Science) for providing us with the opportunity as well as the support required to pursue this project. We would also like to thank our project coordinator **Ms. Aavani N** who gave us her valuable suggestions and ideas when we were in need of them. We would also like to thank our peers for their helpful suggestions.

TABLE OF CONTENTS

Chapter 1

Introduction

FitForge App combines personalized fitness plans and diet plans as per user into one seamless platform, addressing key gaps in existing fitness apps. This holistic approach ensures users receive tailored guidance and motivation to reach their fitness goals effectively. Fitforge solves the lack of personalization, guidance ,and tracking in fitness apps with tailored plans ,diet plans all-in-one .

1.1 Purpose:

FitForge addresses the common shortcomings of fitness apps—lack of personalization, guidance, and tracking—by offering a comprehensive, all-in-one solution. It provides tailored workout plans that adapt to individual goals, fitness levels, and progress, ensuring a customized approach to health and wellness. Additionally, FitForge includes personalized diet plans designed to complement workout routines and optimize results. With integrated tracking features, users can monitor their progress in real time, receive expert guidance, and stay motivated on their fitness journey. By combining these essential elements into a seamless platform, FitForge transforms the way users achieve their health and fitness goals.

1.2 Objectives:

- Provide a user-friendly interface
- Build a comprehensive exercise library
- Offer personalized workout and diet plans.
- Enable tracking for workouts and meals.

1.3 Scope:

FitForge revolutionizes the fitness app industry by addressing three critical shortcomings—lack of personalization, inadequate guidance, and insufficient tracking—through a comprehensive, all-in-one solution. Unlike generic fitness apps that offer one-size-fits-all programs, FitForge tailors every aspect of the fitness journey to the individual. Its smart algorithm designs customized workout plans based on users' fitness levels, goals, and progress, ensuring that exercises are both effective and sustainable. In addition to workouts, FitForge integrates personalized diet plans that align with fitness objectives, dietary preferences, and nutritional needs, making healthy eating both accessible and goal-oriented.

Beyond just providing plans, FitForge enhances user experience through expert guidance and real-time tracking. The platform offers AI-driven insights, virtual coaching, and adaptive recommendations to keep users on the right path. Advanced tracking features allow users to monitor their progress, measure performance metrics, and make data-driven adjustments to their fitness routine. By integrating with wearable devices and syncing with health data, FitForge ensures accurate monitoring and accountability.

What sets FitForge apart is its seamless, all-in-one convenience. Users no longer need separate apps for workouts, diet tracking, and progress monitoring—everything is consolidated into a single, intuitive platform. Whether someone is a beginner seeking structured guidance or an experienced fitness enthusiast looking for optimization, FitForge provides a holistic, guided, and personalized approach. By combining customization, expert support, and advanced analytics, FitForge transforms fitness into an engaging, effective, and results-driven experience, making it easier than ever for users to achieve their health and wellness goals.

Chapter 2

Proposed System

2.1Features and functionality:

FitForge is designed to tackle the lack of personalization, guidance, and tracking in fitness apps by offering an all-in-one platform that combines tailored workout plans, personalized diet plans, and real-time progress tracking. Here's a breakdown of its key features and functionalities:

1. Diet & Nutrition Plans:

FitForge goes beyond traditional fitness apps by offering personalized diet and nutrition plans tailored to each user's fitness goals, dietary preferences, and nutritional needs. This feature ensures that users not only follow a structured workout plan but also complement it with a well-balanced, goal-oriented diet.

2. Virtual Coaching:

FitForge enhances the fitness experience with Virtual Coaching, providing expert guidance, personalized feedback, and real-time support to help users stay on track with their goals. This feature ensures that users receive the motivation and direction they need—just like having a personal trainer, but in a more convenient and accessible format.

3.Smart progress tracking:

FitForge's Smart Progress Tracking feature ensures users can monitor their fitness journey with real-time data, performance analytics, and goal-oriented insights. By integrating advanced tracking tools, AI-driven analytics, and wearable device synchronization, this feature provides users with a comprehensive view of their progress, keeping them motivated and accountable.

4. Workout Plans:

FitForge enhances the fitness experience with Virtual Coaching, providing expert guidance, personalized feedback, and real-time support to help users stay on track with their goals. This feature ensures that users receive the motivation and direction they need—just like having a personal trainer, but in a more convenient and accessible format.

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Chapter 3

Project Outcome

The outcome of the FitForge project is the successful development of an interactive and user-friendly platform that promotes health and wellness. This website will provide users with personalized workout plans, nutritional guidance, and progress-tracking tools to help them achieve their fitness goals. It will cater to individuals of all fitness levels, from beginners to advanced athletes, ensuring that each user receives tailored recommendations based on their needs and preferences.

Additionally, the website will feature educational resources, such as exercise animatic tutorials, health tips, to enhance users' understanding of fitness and nutrition. It will also incorporate interactive elements like goal-setting features, reminders, and possibly a community forum or chat support to keep users engaged and motivated.

From a technical perspective, the project will demonstrate proficiency in web development, database management, and user experience design. The website will be designed with a responsive interface, ensuring accessibility across different devices, including desktops, tablets, and smartphones. Security measures will also be implemented to protect user data and provide a safe online experience.

Overall, FitForge project will not only help individuals improve their health and well-being but also serve as a practical demonstration of web development skills, combining front-end and back-end technologies to create an efficient and engaging platform.

Chapter 4

Software Requirements

The software requirements for the FitForge can be categorized into system requirements front-end technologies, back-end technologies, and database management.

1. System Requirements:

Operating System: Windows, macOS, or Linux

Code Editor/IDE: Visual Studio Code

2. Front-End Requirements:

Language: Python

3. Back-End Requirements :

Programming Language: Python (MySQL)

API Integration: RESTful APIs for user authentication, workout recommendations, and fitness tracking

Authentication: OAuth for secure user login

4. Database Requirements

Database System: MySQL (for user data, workout plans, progress tracking)

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Chapter 5

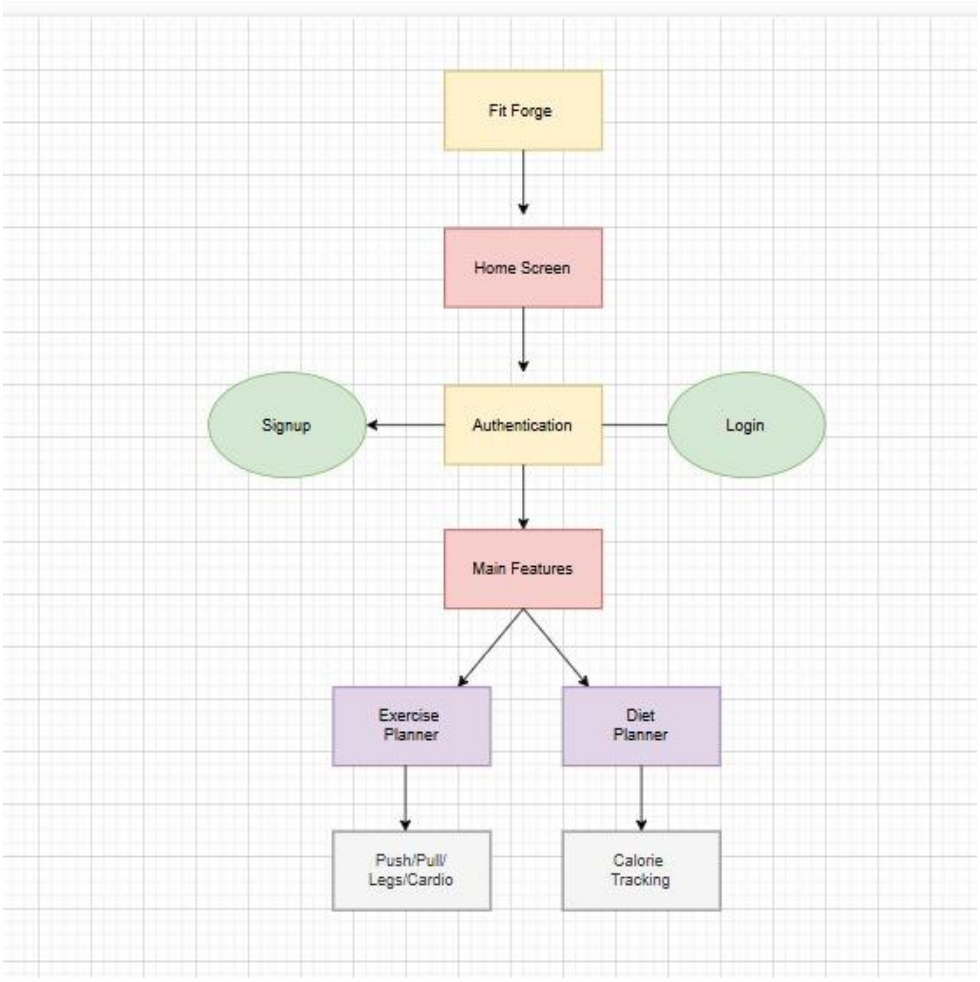
Project Design

5.1 Application Architecture:

1. **Frontend (Client-Side):** Built with Python Langauge, this layer provides a responsive user interface, allowing users to interact with the application seamlessly. It handles user authentication, display workout plans, and provides the diet plan and My plan access functionality.

2. **Backend:** Built with MySQL workbench which is easy and efficient and makes it easy to manage.

5.2 Application Block Diagram:



Chapter 6

Project Scheduling

Gantt Chart: A Gantt chart is a widely-used project management tool that provides a graphical representation of a project's timeline. It helps illustrate the sequence of tasks, their durations, and the relationship between different tasks. Each task is represented as a horizontal bar, with the length corresponding to the time it takes to complete that task**.**

GANTT CHART TEMPLATE

A Gantt chart's visual timeline allows you to
Smartsheet Tip see details about each task as well as project dependencies.

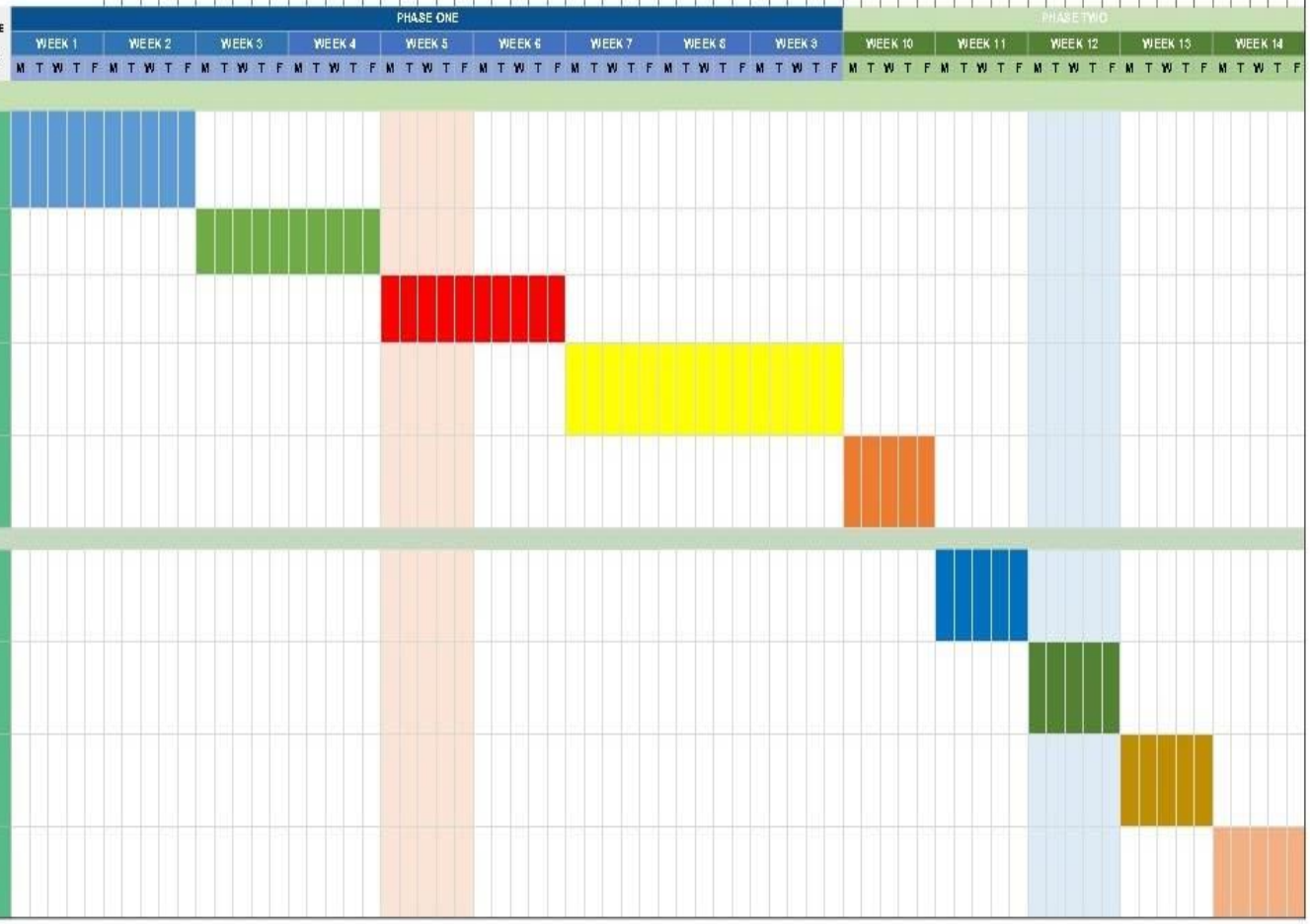
PROJECT TITLE: FitForge: Personalised Fitness and Nutrition Platform

INSTUTUTE & DEPARTMENT NAME: AP SHAH INSTITUTE OF TECHNOLOGY(CSE-Data Science)

PROJECT GUIDE: Prof. Harsha Zope

DATE: 10/8/24

WBS NUMBER	TASK TITLE	TASK OWNER	START DATE	DUE DATE	DURATION(Weeks)	PERCENTAGE OF TASK COMPLETE
1	**Project Conception and Initiation**					
1.1	Group formation and Topic finalization. Identifying the scope and objectives of the Mini Project	Pranav Parab,Yash Wadekar,Bhumika Nikam,Riya Naikwadi	1/8/25	1/16/25	1	100%
1.2	Identifying the functionalities of the Mini Project	Yash Wadekar,Bhumika Nikam,Riya Naikwadi,Pranav	1/16/25	1/28/25	2	100%
1.3	Discussing the project topic with the help of paper prototype.	Bhumika Nikam,Riya Naikwadi,Pranav Parab,Yash	1/28/25	2/5/25	1	100%
1.4	Designing the Graphical User Interface(GUI)	Riya Naikwadi,Pranav Parab,Yash Wadekar,Bhumika Nikam	2/5/25	2/11/25	1	100%
1.5	Presentation I	Yash Wadekar,Bhumika Nikam,Riya Naikwadi,Pranav Parab	2/11/25	2/17/25	1	100%
2	**Project Design and Implementation**					
2.1	Database Design	Pranav Parab,Yash Wadekar,Bhumika Nikam,Riya Naikwadi	2/17/25	3/3/25	2	100%
2.2	Database Connectivity of all modules	Pranav Parab,Yash Wadekar,Bhumika Nikam,Riya Naikwadi	3/3/25	3/13/25	2	100%
2.3	Integration of all modules and Report Writing	Bhumika Nikam,Riya Naikwadi,Pranav Parab,Yash Wadekar	3/13/25	3/31/25	3	100%
2.4	Presentation II	Riya Naikwadi,Pranav Parab,Yash Wadekar,Bhumika Nikam	3/31/25	4/1/25	1	100%



Chapter 7

Results

1. Sign up page:

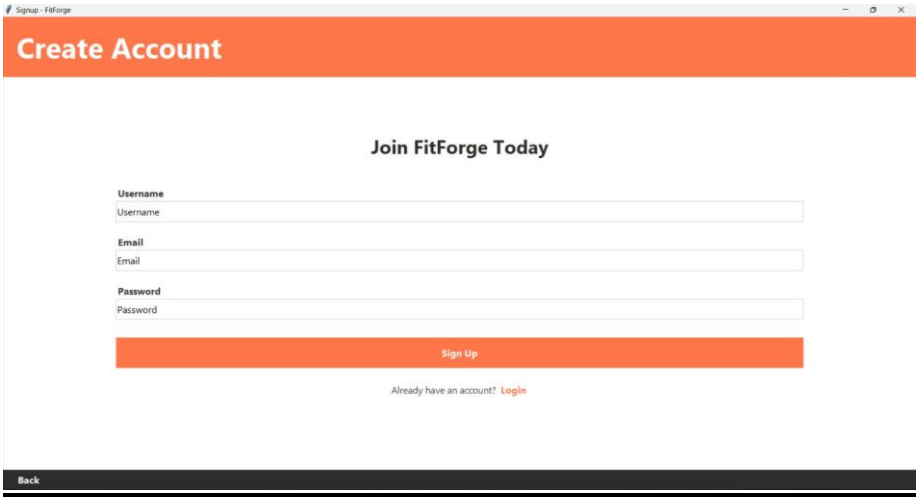


Figure 7.1 Sign-up page

7.1: This page allows new users to register to FitForge

2. Login page:

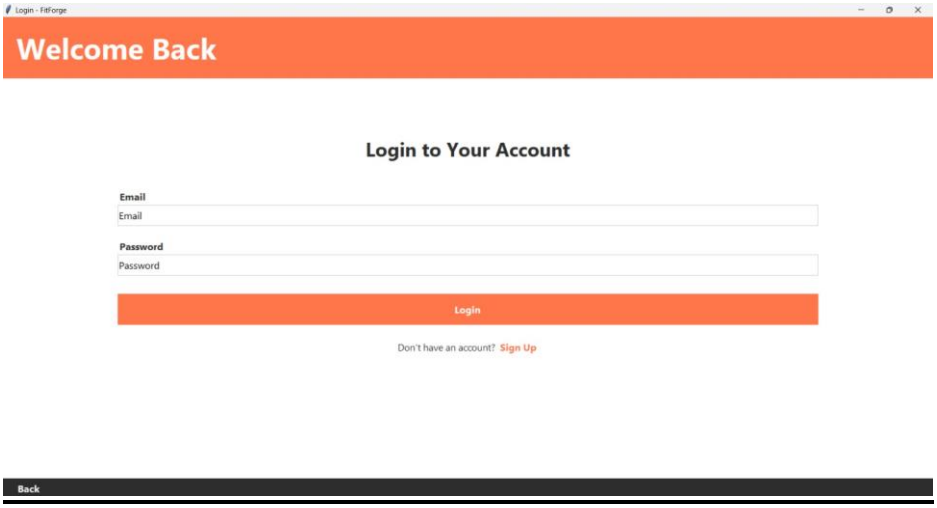


Figure 7.2: Login page

7.2: Allows users to login into FitForge

3. Homepage:

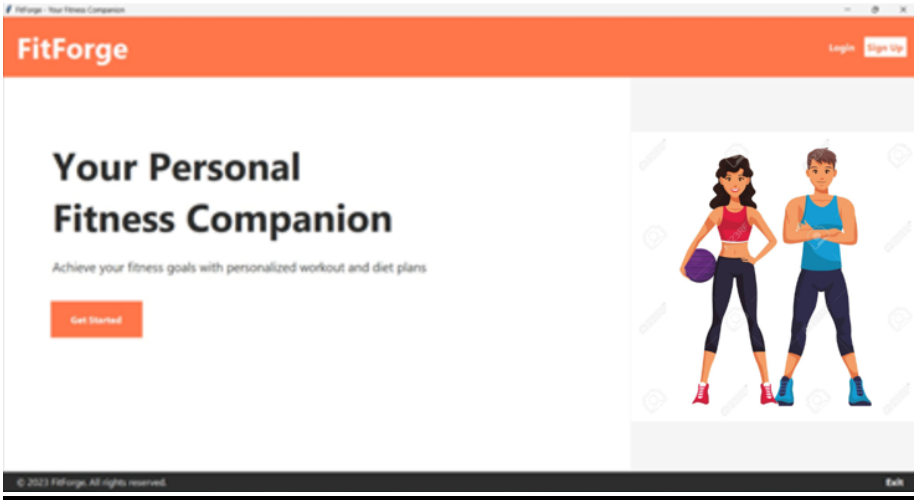


Figure 7.3: Welcome page

4. FitForge Main Page :

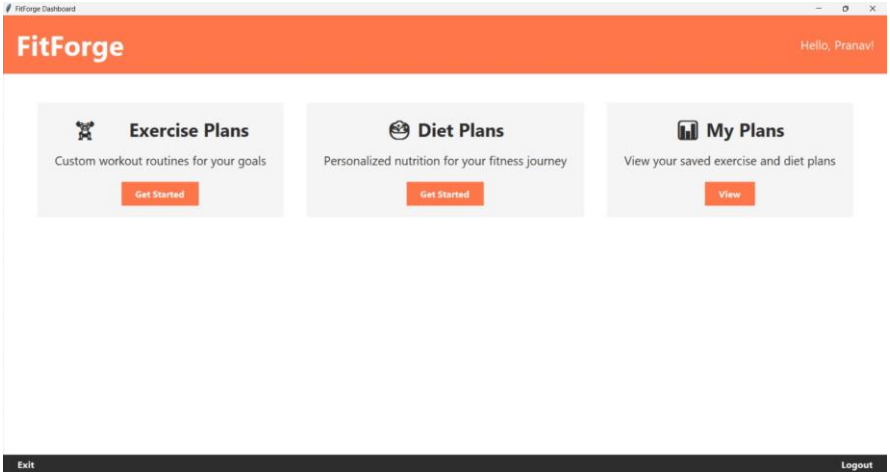


Figure 7.4.1: FitForge Main page

7.4 This page shows various features like Exercise Plans, Diet Plans, My Plans.

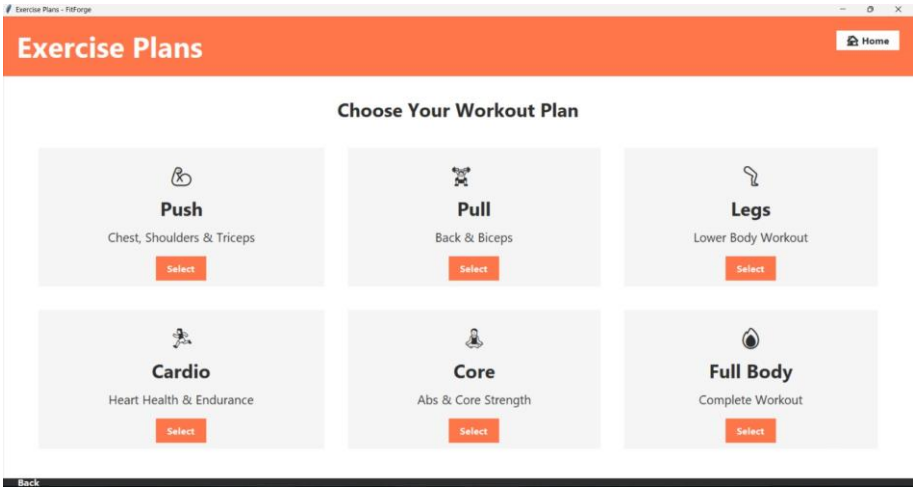


Figure 7.4.2: FitForge Exercise Plans page

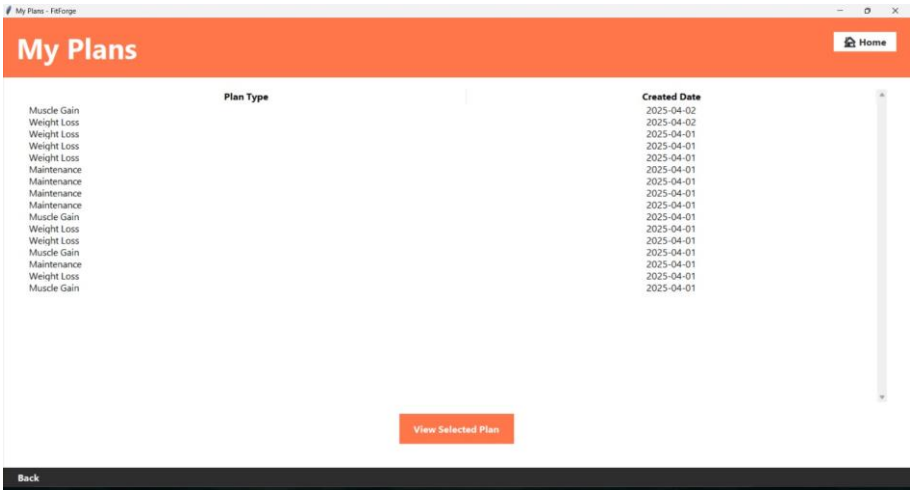


Figure 7.4.3: FitForge My Plans page

Figure 7.4.4: FitForge Push Workout page

Chapter 8

Conclusion

The Fitness Tracking Application was successfully developed and implemented as a standalone desktop solution using Python, with a Tkinter-based graphical user interface and MySQL as the backend database. The project effectively met its objective of providing a user-friendly platform for tracking fitness activities such as workouts, diet intake, and overall health progress.

Through its simple design and offline capabilities, the application enables users to manage their daily fitness routines and visualize their progress over time using dynamic charts. Features like secure login, data validation, and visual feedback through progress graphs have made the system both practical and engaging.

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