

1. INTRODUCTION

In the modern world, fitness and health have become a primary priority for individuals across all age groups. While many people actively pursue fitness goals such as weight loss, muscle gain, and overall well-being, only a limited number successfully achieve consistent results. One of the major reasons for this gap is the lack of proper tracking of workout routines and nutritional intake. Even disciplined individuals often experience slow or inconsistent progress due to fragmented monitoring methods and the absence of structured guidance.

Existing fitness applications such as **HealthifyMe** and **Hevy** provide partial solutions but introduce usability and functionality challenges. **HealthifyMe** is not specifically tailored for users focused on muscle building, while **Hevy** lacks integrated food and nutrition tracking features. Additionally, users are often forced to rely on multiple applications to manage workouts, diet, and progress analysis, increasing complexity and reducing consistency.

To address these limitations, **Fitnora** is proposed as a unified fitness tracking platform that simplifies workout routine creation, nutrition tracking, and progress monitoring under a single system. The application aims to provide an intuitive and streamlined experience for both trainees and fitness coaches, enabling structured planning, real-time progress tracking, and data-driven fitness improvements through a single, integrated solution.

2. SYSTEM STUDY

2.1 EXISTING SYSTEM

In the existing system, users are required to switch between multiple applications to track their fitness progress effectively. For workout routine management, applications such as Hevy are used, while food and nutrition tracking require separate applications like HealthifyMe. This fragmentation makes it difficult for users to maintain consistency and accurately monitor their overall progress.

- **Multiple Application Dependency:** Users must rely on more than one application to track workouts, diet, and progress, leading to inconvenience and reduced user engagement.
- **Lack of Integrated Progress Analysis:** Since workout data and nutrition data are stored in separate platforms, generating a combined and detailed progress analysis becomes difficult.
- **Data Redundancy:** Measurements and body weight data are redundant, and users are required to update the same information in two or more applications.

2.2 PROPOSED SYSTEM

In the proposed system, **Fitnora** provides a single integrated application to track fitness progress efficiently. Workout routines, food and nutrition tracking, and progress monitoring are combined into one platform. This integration helps users maintain consistency and accurately monitor their overall fitness progress.

- **Single Application Platform:** Users can manage workouts, diet, and progress using one application, reducing dependency on multiple platforms.
- **Integrated Progress Analysis:** Workout and nutrition data are stored together, enabling detailed and accurate progress analysis.
- **Elimination of Data Redundancy:** Measurements and body weight data are stored once and updated within a single system, avoiding duplicate entries.

2.3 PROBLEM DEFINITION AND PROJECT DESCRIPTION

The project titled “**FITNORA – Online Workout and Nutrition Tracking System**” is a mobile-based application designed to manage and track fitness activities and nutritional intake efficiently. The Fitnora application allows users to create workout routines, log daily exercises, and track food consumption within a single platform. To access the system, users are required to register, and upon successful registration, they can log in to the application to manage their fitness activities and monitor progress.

The system stores user data, workout records, and nutrition details in a secure local database, ensuring fast access and offline availability. Additionally, the application supports data backup and synchronization features, enabling users to restore their fitness data when required and preventing data loss. The primary objective of Fitnora is to simplify fitness tracking and provide users with a reliable, user-friendly platform to support consistent progress toward their health and muscle-building goals.

USER MODULE:

- Manage Account
- Manage exercises
- Manage routines
- Manage routine composition
- Log workout session
- Record exercise performance
- View progress overview
- Manage meal
- Manage food
- Track body measurements
- Backup data

3. SYSTEM ANALYSIS

3.1 REQUIREMENTS SPECIFICATION

Hardware Requirements

Processor	:	Intel i3 or Higher
RAM	:	Minimum 16 GB RAM
Internal Storage	:	Minimum 100 GB internal storage
Internet Connectivity	:	Wi-Fi / Mobile Data
Keyboard	:	Standard 104-keys Keyboard
Mouse	:	Optical Mouse

Software Requirements

Operating System	:	Windows 10 / 11 (64 bit)
Local Server	:	Golang with Gin framework
Database	:	MySQL (Backend), SQFLITE (Mobile)
Frontend	:	Flutter (Android)
Backend	:	Golang
Database Connectivity	:	GORM (Backend), SQFLITE (Mobile)
Android SDK Version	:	API 30 (Android 11)
Other Tools	:	Visual Studio Code, Android Studio, Gemini AI Studio, MySQL (XAMPP)

3.2 FEASIBILITY STUDY

A feasibility study is conducted to evaluate the practicality and viability of the proposed Fitnora (A Smart Workout and Food Tracking App). The study analyzes resource availability, development cost, operational efficiency, and long-term benefits. Fitnora aims to integrate workout routine management and food tracking into a single, user-friendly platform, eliminating the need for multiple applications.

The feasibility study is examined under the following aspects:

- Technical Feasibility
- Operational Feasibility
- Economic Feasibility

TECHNICAL FEASIBILITY

Technical feasibility examines whether the required hardware, software, and technologies are available to develop Fitnora within the defined constraints.

- Fitnora is developed using modern and reliable technologies such as Flutter for mobile application development, Go (Golang) for backend services, and (MySQL + SQFLITE) for structured data storage, ensuring scalability and performance.
- The system ensures accuracy and reliability in tracking workout routines, nutrition data, and user progress.
- Basic security mechanisms are implemented to protect user data and ensure safe access to the application.

Hence, the proposed system is technically feasible.

OPERATIONAL FEASIBILITY

Operational feasibility evaluates whether Fitnora can be effectively used in real-time fitness tracking scenarios.

- The system provides a simple and user-friendly interface, reducing the learning curve for users.
- Fitnora integrates workout tracking and food logging into a single application, minimizing user effort and resistance.
- The application supports smooth operation and requires minimal maintenance.

Therefore, the system is operationally feasible.

ECONOMIC FEASIBILITY

Economic feasibility determines whether the cost involved in developing Fitnora is justified by its benefits.

- The system uses open-source tools and existing mobile infrastructure, reducing development and operational costs.
- No additional hardware investment is required beyond standard Android devices and global backend server.
- The long-term benefits of efficient fitness tracking outweigh the initial development cost.
- Because of the use of a local database, very few requests are sent to the backend.

Thus, Fitnora is economically feasible.