Project Title
Fitness Tracking System

Brief Project Description
This system is designed to assist monitor different user in their daily health habits and calorie intake. It offers functionalities to create and manage personal profiles, where users can log their meals, track physical activities, and view progress over time. Additionally, the system calculates calories consumed and burned based on personalized goals, enabling users to make informed decisions about their health. Features like notifications for achieving or exceeding daily targets. The ultimate goal is to provide a comprehensive tool for managing health-related activities.

Core Features/Approach
The project includes user profile management, where each user can store personal details such as weight, age, occupation, and fitness goals. Calorie tracking functionality allows users to log their meals with nutritional information and calculates remaining calories for the day based on their goals. Activities like walking and running can also be tracked, with calories burned being recorded and daily activity goals set by the user. The system generates monthly reports summarizing calorie intake and activity records. Notifications are implemented to remind to meet their goals or stay on track, such as "Achieved daily goal!" or "You have exceeded your calorie limit."

Technologies/Approach
The project will be developed in Java using IntelliJ IDEA as the integrated development environment. Encapsulation will be used to keep sensitive user data private, accessible only through getter and setter methods. A hierarchical structure will be implemented for different types of activities (e.g., walking, running) to promote code reuse and logical organization. Polymorphism will allow the system to handle various data types flexibly, such as meals and activities, making it easier to extend the application's functionality in the future. Abstract classes and interfaces will also be used to define common behavior and facilitate extensibility. To ensure data persistence, File I/O operations will be implemented to save and retrieve user data efficiently. The Java Collections API will be utilized for managing dynamic lists, such as meal logs and activity records, providing an organized and scalable approach to data handling.

Potential Implementation Challenges
Implementing the file management system to ensure robust saving and loading of user data without errors poses a significant challenge. Advanced features, such as generating visual progress reports with graphs, may require learning new libraries or tools.