Food Foresight By Random Forest Regressor

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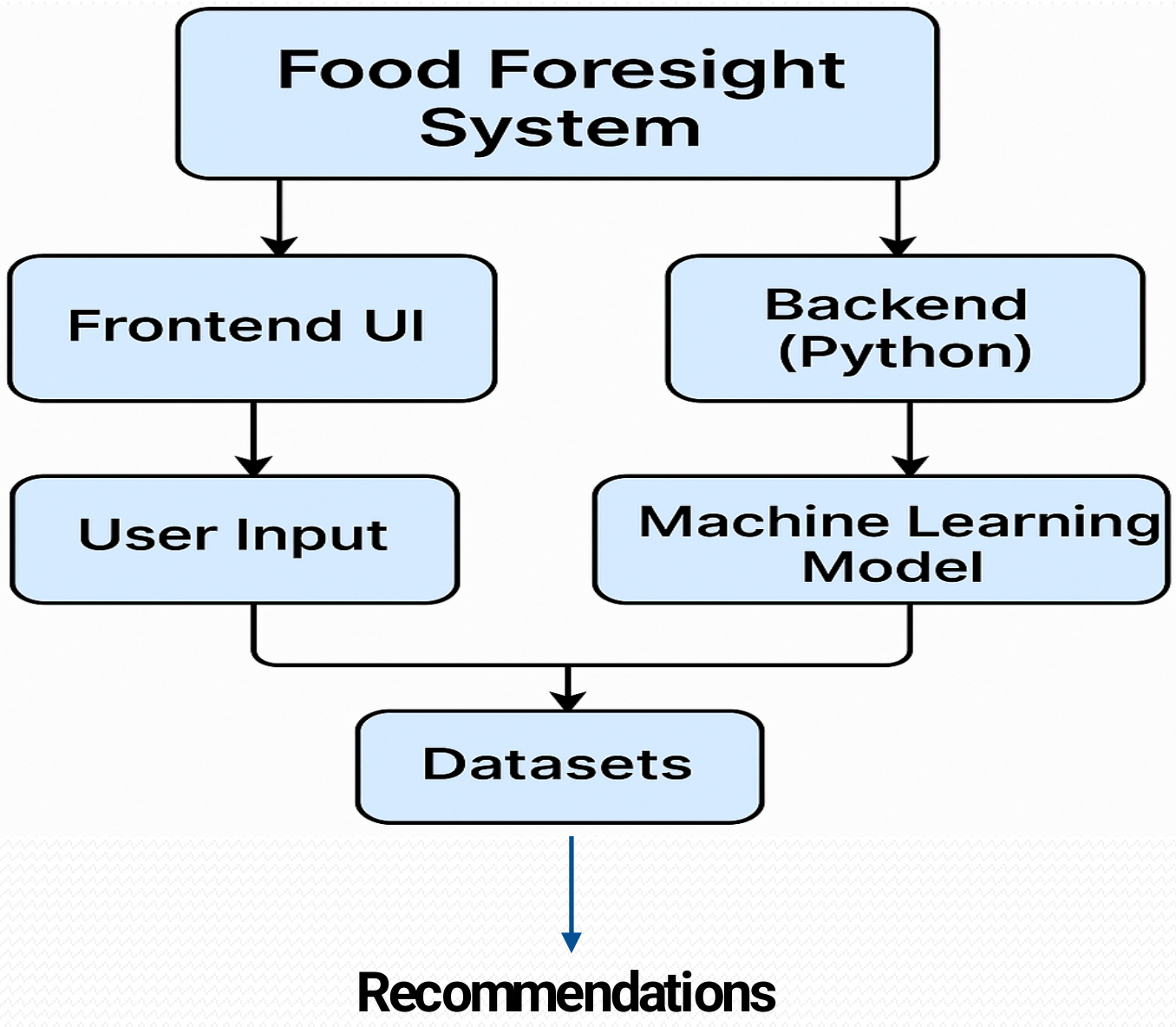
Design and Implementation



Explanation

1. Food Foresight System (Main Block)

This is the central part of the project that brings together all components like the frontend, backend, datasets, and ML model to work together.

2. Frontend UI

This is the user-facing part of the system. It includes forms or inputs where users can enter personal details like age, gender, health condition, etc.

3.User Input

The data entered by the user on the frontend is captured here. This includes all necessary information required to suggest a suitable diet.

4. Backend (Python)

The backend handles all the logic. It processes the user input, loads the machine learning model, and sends the data to the model for prediction.

5. Machine Learning Model

The trained Random Forest model takes the processed user data and predicts the nutrient requirements. It plays a key role in personalizing suggestions.

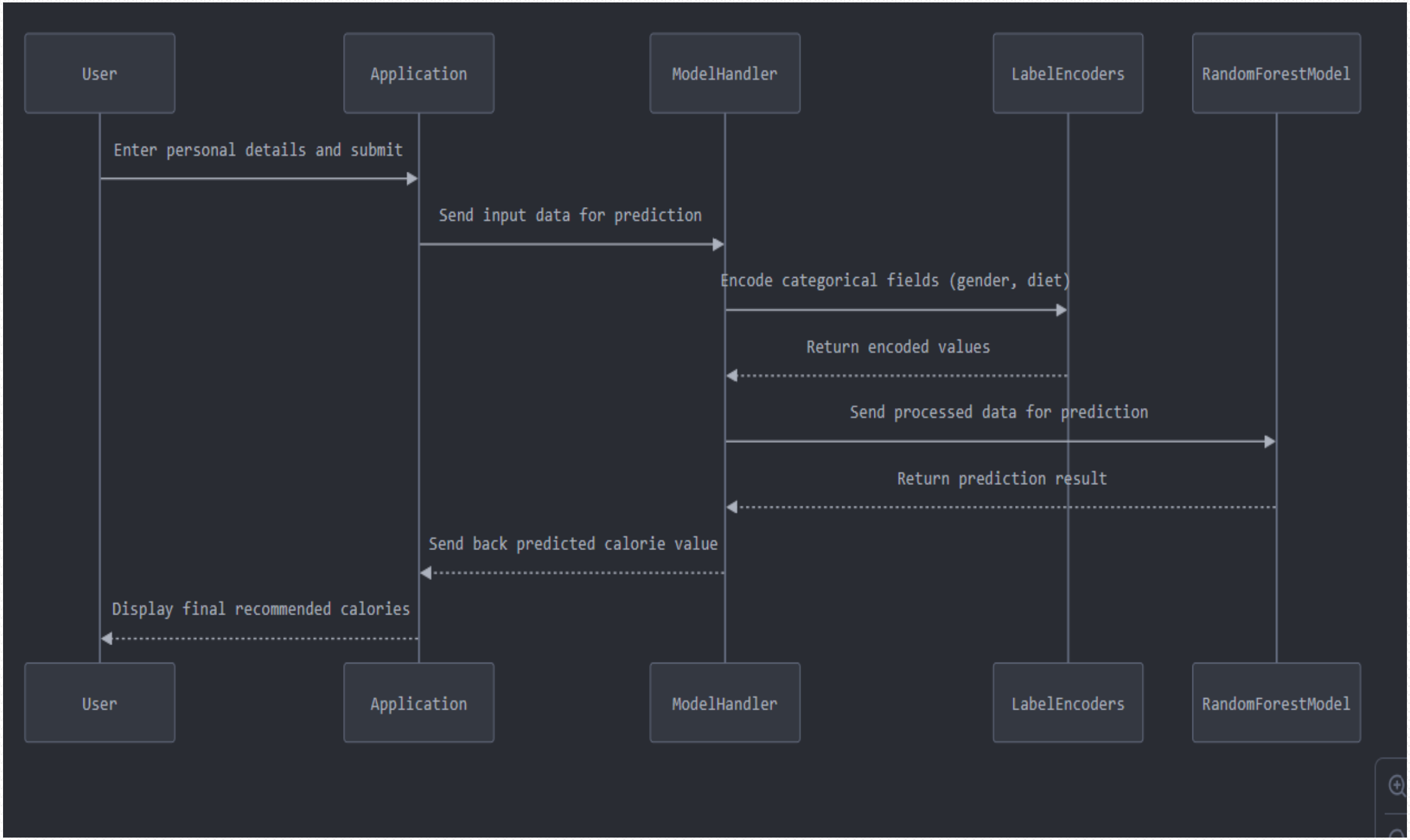
6. Datasets

Preloaded CSV datasets contain food items, nutrients, and meal suggestions. These are used by both the backend and model to support accurate predictions.

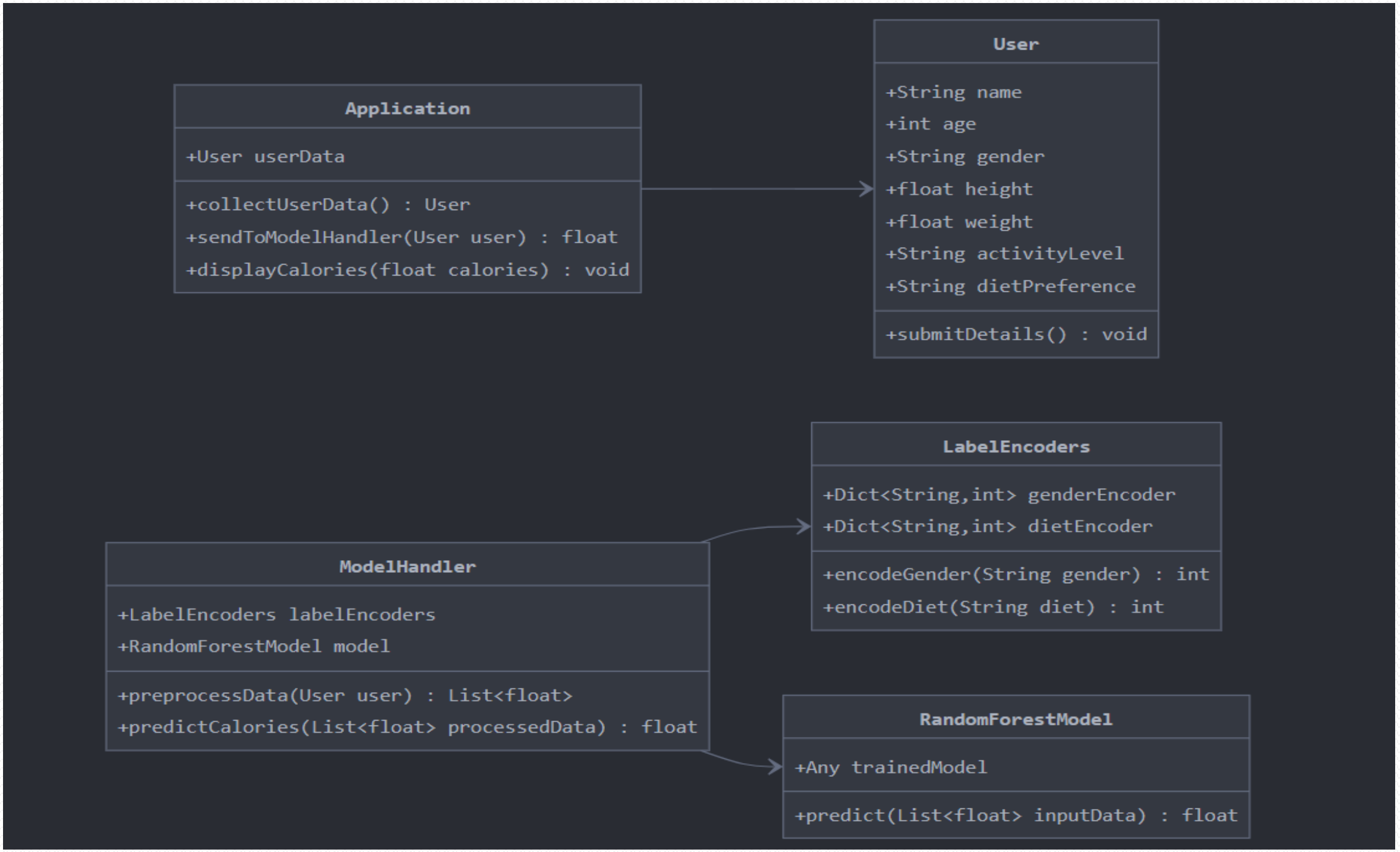
7. Recommendations

Finally, based on the model's prediction and dataset, the system provides tailored diet recommendations to the user through the frontend.

Sequence Diagram



Class Diagram



Principles

Modular Architecture

- Divide the system into distinct components: User Interface, Application Logic, Model Handler, Encoders, and ML Model.

Maintainability & Scalability

- Design the system so it’ s easy to update models or encoder logic.


Thank
You