# AIML Project Abstract

## NutriMate: Personalized Meal Planner

In today's fast-paced world, personalized meal planning is essential for maintaining a healthy lifestyle while adhering to specific dietary preferences and constraints. This project aims to develop a machine learning-based recipe recommendation and meal planning system that suggests meals tailored to individual needs, considering factors such as dietary restrictions, allergies, nutritional goals, calorie limits, and personal taste preferences.

The system leverages a comprehensive dataset of recipes with detailed information on ingredients, nutritional content, preparation methods, and dietary categories. By using a combination of collaborative filtering and content-based filtering techniques, the model analyses user inputs to provide personalized meal suggestions that align with their unique dietary requirements. A feedback loop allows users to rate meals and provide input on their dietary experiences, refining future recommendations and making the system adaptive to changing user preferences over time.

Additionally, the model can generate meal plans for various time frames (e.g., daily, weekly), ensuring efficient meal planning while maintaining balanced nutrition. It also considers seasonal availability of ingredients, cost efficiency, and meal preparation time, making the recommendations practical and affordable. This project addresses the growing demand for intelligent, personalized meal planning solutions, offering a convenient tool for individuals seeking to maintain healthy and customized diets.

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