**ABSTRACT FOR RECIPE RECOMMENDATION AND MEAL PLANNER**

With the increase in diet restrictions and health-conscious consumption habits, personalized meal planning solutions need to be developed. This paper introduces a recipe recommendation and meal planning model based on machine learning for suggesting meals tailored to the user's dietary preferences and constraints. Advanced algorithms analyze the input from users, which includes dietary restrictions, personal taste preferences, and nutritional goals.

This model is using a combination of collaborative filtering and content-based filtering techniques in order to find the patterns in user behavior and preferences for providing meal recommendations.

The system was trained on a diverse dataset of recipes, enriched with nutritional information and user ratings, allowing it to suggest meals that not only meet the requirements of the diet but also align with the users' taste profiles.

The model features include:

Personalized Recommendation: In this, users provide special dietary requirements and limitations and the model would thus recommend to them appropriately, matching those requirements.

Optimal Nutritional Content: With the calculation of the nutrition requirement for the meals it proposes to its clients, the model will ensure providing balanced diets matched to its health objectives for its customers.

Learning Dynamically: It learns continuously from its feedback and interaction and, in turn, keeps refining recommendations based on new interactions and responses for maximizing its users' satisfaction.

Meal planning interface: This should be simple and intuitive enough to easily plan meals for the week and include varied recipes while avoiding food waste.

This is a recipe recommendation and meal planning model that aims to help people make better dietary choices for healthier eating habits and well-being. It is a system that, using machine learning, addresses the complexities of meal planning in a personalized manner and thus will be a very useful tool for anyone looking to navigate their dietary landscape effectively.