Project Proposal: Food Recipe Recommendation System

Project Overview

Project Name : ExpressEats

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Github : https://github.com/ExpressNesters/ExpressEats.git

Objective

Addressing a prevalent pain point in daily lives, "**ExpressEats**" aims to recommend tailored recipes based on user's time constraints and available ingredients. By harnessing the power of data mining and machine learning, we ensure a user-centric, optimized culinary experience**.**

The objective of this project is to develop a Food Recipe Recommendation System that provides users with personalized recipe recommendations based on common ingredients and quick preparation times. This system will utilize data science and machine learning techniques to create a user-friendly application that enhances the cooking experience and helps users make delicious meals efficiently.

Project Scope

1. Data Collection and Preprocessing
    - Gather a comprehensive dataset of recipes including ingredients, cooking times and user ratings.
    - Clean and preprocess the data to ensure consistency and accuracy.
2. User Profile Creation
    - Implement user profile creation allowing users to input their dietary preferences, allergies and cooking skill levels.
3. Recipe Recommendation Engine
    - Develop a recommendation engine using collaborative filtering and content based filtering methods to suggest recipes.
    - Prioritize recipes based on common ingredients and quick preparation times.

4. User Interface
    - Create a user-friendly web interface.
    - Enable users to search for recipes, input ingredients, and filter recipes based on their preferences.
5. Recipe Rating and Feedback
    - Implement a feature that allows users to rate recipes and provide feedback.
    - Utilize this feedback to continually improve the recommendation system.
6. Performance Evaluation
    - Evaluate the recommendation engine's accuracy and effectiveness using metrics such as precision, recall, and user satisfaction.
7. Deployment
    - Deploy the Food Recipe Suggestion System on a platform(to be decided) ensuring scalability and reliability.

Methodology

1. Data Collection
    - Collect a diverse dataset of recipes.
2. Data Preprocessing
    - Clean and preprocess the data, which includes handling missing values and using standard names for ingredients.
3. User Profile Creation
    - Design a user profile screen where the user can capture their preferences.
4. Recommendation Engine
    - Implement collaborative filtering and content-based filtering algorithms.
    - Develop a scoring system to prioritize recipes based on ingredients and preparation time.
5. User Interface
    - Create a user-friendly web interface.
    - The web interface should have search, filter, and recipe recommendation functionalities.
6. Recipe Rating and Feedback
    - Implement a system for the user to provide rating and feedback for recipes.
7. Performance Evaluation
    - Evaluate the recommendation engine using metrics.
8. Deployment
    - System deployment and test that the system can handle reacl time interactions.

Deliverables

1. ExpressEats App with a user-friendly interface.
2. Cleaned and preprocessed recipe dataset.
3. Trained recommendation engine.
4. User profile creation functionality.s
5. Recipe rating and feedback system.
6. Documentation including project report, codebase.