TITLE:-RECIPE FINDER USING API

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INTRODUCTION

This project, titled *Recipe Finder Using API*, is an ingredient-based recipe suggestion system developed in Python. It allows the user to simply type one ingredient such as potato, rice, or mushroom, and the system instantly displays all recipes related to that ingredient. The project works using both online API data and offline stored recipes, ensuring that the system works even without internet access. After selecting a recipe, the user can view full details including ingredients, category, instructions, and can also save the recipe to a text file.

PROBLEM STATEMENT

In daily life, many people often have only one available ingredient at home and struggle to decide what dish they can prepare with it. This confusion leads to wasted time and effort in thinking and searching for recipes manually. Moreover, not everyone has the experience to decide what can be cooked from a single ingredient. Therefore, there is a need for a simple system that can instantly recommend recipes using any one ingredient and guide users with full instructions.

OBJECTIVES

The main objective of this project is to help users easily find recipes by entering just one ingredient. The project also aims to demonstrate important programming concepts such as API integration, JSON data extraction, object-oriented programming, and file handling. Another goal is to build a practical system that works even without internet connection by using offline stored recipes. The project provides a fast, simple, and user-friendly solution for everyday cooking decisions.

TECHNOLOGIES USED

This project is developed using the Python programming language. It uses **API GET requests** to fetch recipe details from TheMealDB API whenever internet is available. To extract ingredients and instructions from the API response, the project uses **JSON parsing techniques**. The recipe information is stored using **Object-Oriented Programming (OOP)** through a custom Recipe class. In addition, **file handling** is used to save selected recipes in a text file. The "requests" library is used for making API calls, while offline data structures are used to handle situations where internet is not available.

PROPOSED SYSTEM

The system begins by taking an ingredient input from the user. It first tries to retrieve recipes from the online API. If the API responds successfully, the results are displayed. If there is no internet or the API does not provide matching recipes, the system automatically switches to offline mode, using a large set of preloaded recipes related to potato, rice, and mushroom. After displaying the results, the user selects a recipe to view detailed instructions. The user also has the option to save the recipe for future use

FEATURES OF THE SYSTEM

The system offers a simple and clean recipe search experience based on a single ingredient. It supports both online and offline modes, ensuring that the program always works. The built-in offline database contains 30 vegetarian-style recipes divided into potato, rice, and mushroom categories. The output includes complete recipe details such as ingredients list, preparation steps, and recipe category. Additionally, the system provides a save option that allows the user to store the recipe as a text file. The interface is straightforward, fast, and easy to interact with.

```
=== RECIPE FINDER USING API ===
Enter ingredient name (e.g., potato, paneer, rice):  potato
Using OFFLINE data.


Found 10 recipes:

1. Aloo Paratha
2. Aloo Jeera
3. Aloo Tikki
4. Aloo Masala
5. Potato Cutlet
6. Potato Chips
7. Aloo Bhaji
8. Aloo Sandwich
9. Aloo Pakora
10. Aloo Fry

Enter recipe number to view details:  2

========== RECIPE DETAILS ==========
Name     : Aloo Jeera
Category : Main Course
Area     : Indian

Ingredients:
 - Potato - 3
 - Jeera - 1 tsp
 - Oil - 1 tbsp

Instructions:
 Cook boiled potatoes with cumin and spices.
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Do you want to save this recipe to file? (y/n):  y
Recipe saved to Recipe_Output.txt
```

CONCLUSION

The *Recipe Finder Using API* project successfully solves the problem of deciding what to cook with a single ingredient. It integrates online API data with offline fallback to ensure continuous functionality. The project effectively demonstrates Python concepts such as API handling, JSON parsing, OOP, and file management. Overall, this system is practical, easy to use, and helpful for daily cooking. With further development, it can be expanded into a complete web or mobile application in the future.