PROJECT REPORT

Smart Pantry – Recipe Recommender & Grocery Planner

Team Name: CodeCooks

Batch: 09

Team Members:

• Nikhil Vadhwani – S25CSEU0261

• Kabeer Rangan – S25CSEU0243

• Bhavishya Tyagi – S25CSEU0255

• Aarush Agrawal – S25CSEU0251

• Sankalp Tuteja – S25CSEU0271

ABSTRACT

Smart Pantry is a beginner-friendly Python project that helps users decide what to cook based on the ingredients they already have. The system compares pantry items with a stored recipe database and shows which recipes can be prepared immediately. If ingredients are missing, the system clearly displays them. The project uses basic Python concepts such as lists, dictionaries, loops, and conditional statements. It aims to reduce food wastage, save time, and simplify cooking decisions.Smart Pantry is a beginner-friendly Python project that helps users decide what to cook based on the ingredients they already have. The system compares pantry items with a stored recipe database and shows which recipes can be prepared immediately. If ingredients are missing, the system clearly displays them. The project uses basic Python concepts such as lists, dictionaries, loops, and conditional statements. It aims to reduce food wastage, save time, and simplify cooking decisions.

PROBLEM STATEMENT

People often find it difficult to decide what to cook with limited ingredients. Many groceries and vegetables are wasted because we forget what is available. Different individuals follow vegetarian, non-vegetarian, or diet-specific lifestyles, which makes decision-making harder. Manually checking recipes and matching ingredients is time-consuming. Smart Pantry solves this by automatically recommending recipes based on what the user already has.People often find it difficult to decide what to cook with limited ingredients. Many groceries and

vegetables are wasted because we forget what is available. Different individuals follow vegetarian, non-vegetarian, or diet-specific lifestyles, which makes decision-making harder. Manually checking recipes and matching ingredients is time-consuming. Smart Pantry solves this by automatically recommending recipes based on what the user already has.

OBJECTIVES

- Build a simple Python-based pantry management system.
- Suggest recipes based on available ingredients.
- Show missing ingredients for incomplete recipes.
- Support Veg / Non-Veg / Diet recipe categories.
- Provide an easy menu-driven interface.
- Practice Python basics (loops, lists, dictionaries, conditions).

SYSTEM DESIGN & WORKING

The system maintains a recipe dictionary divided into three categories: vegetarian, non-vegetarian, and diet-friendly. The user adds available ingredients into the pantry list. The program then compares the pantry items with each recipe’s ingredients and determines whether a recipe is possible. It also lists missing ingredients for partially possible recipes. A filter option allows users to view recipes category-wise.The system maintains a recipe dictionary divided into three categories: vegetarian, non-vegetarian, and diet-friendly. The user adds available ingredients into the pantry list. The program then compares the pantry items with each recipe’s ingredients and determines whether a recipe is possible. It also lists missing ingredients for partially possible recipes. A filter option allows users to view recipes category-wise.

Main Python Concepts Used

- Lists
- Dictionaries
- Loops
- Conditions
- User Input

APPLICATIONS

- Helps reduce food waste.
- Saves time in deciding recipes.
- Useful for hostel students & bachelors.
- Highly extendable for future versions.
- Can be converted into a full mobile app.

FUTURE SCOPE

- Add calorie tracking for diet plans.
- Add expiry reminders for items.
- Store pantry permanently using files.
- Add barcode scanning for grocery input.
- Add voice assistant features.

CONCLUSION

Smart Pantry is a practical beginner-level Python project. It demonstrates simple logic, clear categorization, and real-life usage. The project is fully menu-driven and helps users quickly find recipes based on available ingredients. It is easy to understand, expand, and implement.Smart Pantry is a practical beginner-level Python project. It demonstrates simple logic, clear categorization, and real-life usage. The project is fully menu-driven and helps users quickly find recipes based on available ingredients. It is easy to understand, expand, and implement.