S.No: 1	Exp. Name: ***Project Module***	Date: 2024-06-13

Aim:

Project Module.

Source Code:

CTP28132.py

```
import json

class RecipeApp:
    def __init__(self, data_file='recipes.json'):
        self.data_file = data_file
        self.recipes = self.load_recipes()

    def load_recipes(self):
        try:
            with open(self.data_file, 'r') as file:
                return json.load(file)
        except FileNotFoundError:
            return []

    def save_recipes(self):
        with open(self.data_file, 'w') as file:
            json.dump(self.recipes, file, indent=4)

    def add_recipe(self, name, ingredients, instructions, preferences,
dietary_restrictions):
        recipe = {
            'name': name,
            'ingredients': ingredients,
            'instructions': instructions,
            'preferences': preferences,
            'dietary_restrictions': dietary_restrictions
        }
        self.recipes.append(recipe)
        self.save_recipes()

    def search_recipes_by_ingredient(self, ingredient):
        results = [recipe for recipe in self.recipes if ingredient in recipe['ingredients']]
        return results

    def suggest_recipes(self, available_ingredients, preferences, dietary_restrictions):
        suggestions = []
        for recipe in self.recipes:
            if (all(ingredient in available_ingredients for ingredient in
recipe['ingredients']) and
                    (not preferences or any(pref in recipe['preferences'] for pref in
preferences)) and
                    (not dietary_restrictions or not any(dr in
recipe['dietary_restrictions'] for dr in dietary_restrictions))):
                suggestions.append(recipe)
        return suggestions

    def display_recipes(self, recipes):
        for recipe in recipes:
            print(f"Name: {recipe['name']}")
            print("Ingredients:")
            for ingredient in recipe['ingredients']:
                print(f"- {ingredient}")
            print("Instructions:")
            print(recipe['instructions'])
            print("Preferences:")
```

```
            print(", ".join(recipe['dietary_restrictions']))
            print("="*20)

def main():
    app = RecipeApp()

    while True:
        print("\nRecipe Recommendation App")
        print("1. Add Recipe")
        print("2. Search Recipe by Ingredient")
        print("3. Suggest Recipes")
        print("4. Exit")

        choice = input("Choose an option: ")

        if choice == '1':
            name = input("Enter recipe name: ")
            ingredients = input("Enter ingredients (comma separated): ").split(', ')
            instructions = input("Enter cooking instructions: ")
            preferences = input("Enter preferences (comma separated): ").split(', ')
            dietary_restrictions = input("Enter dietary restrictions (comma separated):
").split(', ')
            app.add_recipe(name, ingredients, instructions, preferences,
dietary_restrictions)
            print("Recipe added successfully!")

        elif choice == '2':
            ingredient = input("Enter ingredient to search for: ")
            results = app.search_recipes_by_ingredient(ingredient)
            if results:
                app.display_recipes(results)
            else:
                print("No recipes found with that ingredient.")

        elif choice == '3':
            available_ingredients = input("Enter available ingredients (comma separated):
").split(', ')
            preferences = input("Enter your preferences (comma separated): ").split(', ')
            dietary_restrictions = input("Enter dietary restrictions (comma separated):
").split(', ')
            suggestions = app.suggest_recipes(available_ingredients, preferences,
dietary_restrictions)
            if suggestions:
                app.display_recipes(suggestions)
            else:
                print("No recipes can be made with the available ingredients, preferences,
and dietary restrictions.")

        elif choice == '4':
            print("Exiting...")
            break

        else:
            print("Invalid choice. Please try again.")
```

```
if __name__ == "__main__":
    main()
```

Execution Results - All test cases have succeeded!

Test Case - 1
User Output
Hello World
Hello World