Backend Developer Home Assignment

Objective

Develop a backend system with API functionalities that include external API integration.

Dataset

Please download the dataset from the following link: [Recipe Ingredient Data](#)

Requirements

1. Data Import and Setup
   - Write a script to:
     - Load the recipe data into your backend system.
     - Set up a basic database to store the recipe data.
2. API Development for Recipe Search
   - Develop an API with the following functionalities:
     - An endpoint that accepts an ingredient as input and returns all recipes containing that ingredient.
     - An endpoint that accepts a recipe title as input and returns similar recipe titles, using the Hugging Face sentence similarity service ([Hugging Face Sentence Similarity](#)).
     - Document the integration process with the Hugging Face API.
3. Theoretical Question on External API Integration

Design a high-level architecture for a recipe recommendation system, containing the following modules:

   A. *User Management Module:* Handles user registration, authentication, and profile management.
   B. *Recipe Management Module:* Manages a comprehensive database of recipes, including details like ingredients, preparation steps, and user ratings.
   C. *Recommendation Engine:* Utilizes user data and preferences to suggest personalized recipe recommendations.
   D. *Search and Query Module:* Allows users to search for recipes based on various criteria such as ingredients, cuisine type, and dietary restrictions.
   E. *External API Integration:* Incorporates external APIs to enhance the system's functionality, like ingredient similarity analysis.
   F. *Analytics and Reporting Module:* Gathers user interaction data for analysis and provides insights into system usage and recipe popularity.

G. *Infrastructure and Data Storage:* Ensures robust and scalable infrastructure, efficient data storage, and secure data handling.

Your design should clearly illustrate how these modules interact within the system and consider aspects such as scalability, maintainability, and performance

Deliverables

- Source code for the data import script and API endpoints.
- Documentation on API usage and integration with Hugging Face.
- Written response to the theoretical question.

Evaluation Criteria

- Functionality and correctness of the API endpoints.
- Code quality and error handling.
- The theoretical question explanation