

Short Report: Summary of Accomplishments

This report summarizes the prototype developments, testing the design concepts from the Engineering Design Review of the Recipe Suggestion System.

This interactive system, built with a graphical interface created in Tkinter, enables a user to interface with a simulated smart fridge that, once the ingredients inside become known, matches them with available recipes.

The project employs a scenario-based ingredient detection feature, categorizing items into groups based on common scenarios in the fridge, including "Breakfast" and "Dessert." From these inputs, the system efficiently finds recipes in the modular database. It not only highlights which recipes can be fully made but also shows missing ingredients for recipes that are partially complete.

We implemented the prototype in Python modularly to facilitate easy understanding and maintenance. Here, each of the key ingredient's detection, recipe matching, and user interface interactions were assigned to separate modules for development. Unit tests have been implemented to validate critical functions, helping to ensure the system's reliability across various scenarios.

Collaboration and code quality were enhanced by version control and a continuous integration workflow, running tests automatically across multiple Python versions whenever new changes are introduced. In conclusion, this project demonstrates the capability of a scenario-based recipe suggestion system and achieves the initial goals, laying a solid foundation for future improvements.