

# Recipe Finder- Design Document

Group members

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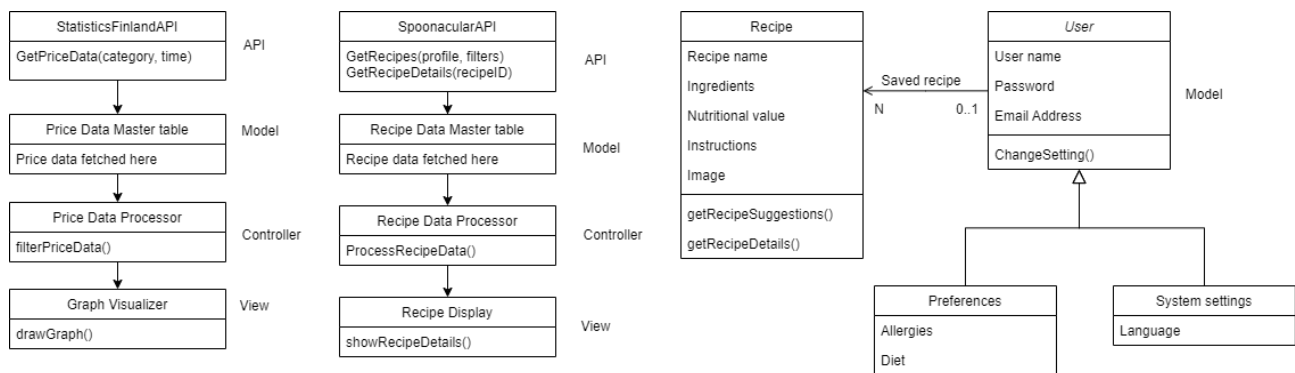
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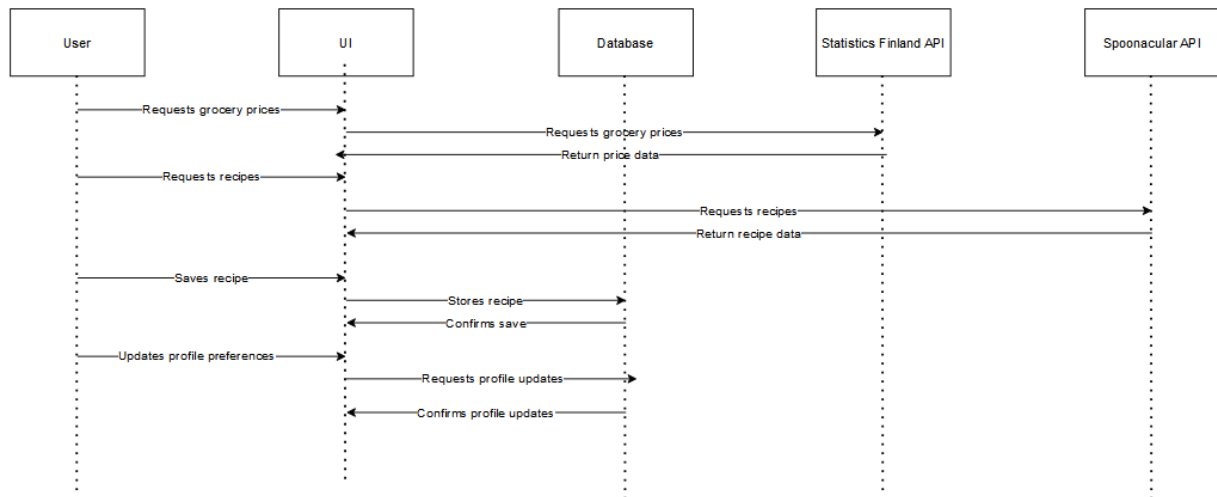
## Software structure and components

The designed application is a recipe finder which provides price details of groceries from one API and makes recipe suggestions based on the groceries from the data of the second API. Users log in to the application with their own profile where certain settings can set, for example food allergies and diets. The user can also save recipes from the suggestions to their profile to view later.



**Figure 1.** Initial draft of some of the designed data elements

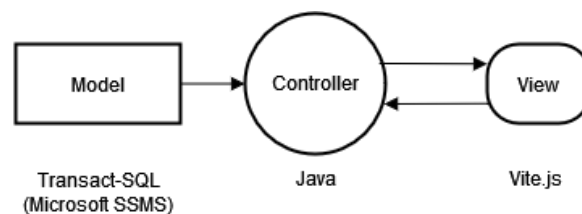
At this point of design, the specific components are still being drafted, but we will need to at least implement some type of user management table, as well as two separate pipelines for APIs, with respective tables, controllers, and visualizations.



**Figure 2.** Sequence diagram

## Design patterns and architecture

We decided to follow the **Model-View-Controller** pattern as it fits well with our project idea and allows separating Java-based core parts of the system from Web-based frontend rather simply. Our team members have some previous experience in Web development, helping in developing the View quickly individually from Model and Controller logic.



**Figure 3.** Tools and the Model-View-Controller pattern

View will be based on Vite.js, and in Java we will create RESTful interfaces for the frontend to call what it needs from our Model. Model utilizes two APIs described below to fill in relevant data from outside sources.

## APIs

The two APIs used in the project will be:

- **Statistics Finland API** (Tilastokeskus), providing various datasets such as historical consumer price indices for various product categories, including food and groceries.
- **Spoonacular API** provides access to thousands of recipes, nutritional information and other food-related data on a detailed level.

The software uses the Statistics Finland API to track price changes of various goods and services over time and the consumer prices can be searched from different categories, such as various subcategories of groceries. In this software, Statistics Finland API is used to retrieve information on groceries in Finland, which helps the user to track various grocery items in order to decide which ones to use in recipes. the API is used to draw graphs and visualize the price and the user can filter by product category and time range.

The Spoonacular API is then used to provide recipe suggestions based on the user profile settings (allergies and diet), picked groceries and the different filters available in the software such as calories, health score and cuisine (Italian, Greek). Users can then scroll through the recipes and by read more details of the recipes that are suggested. The API is used to fetch the ingredients of the recipe and more information such as preparation time and equipment needed are displayed.

[https://pxdata.stat.fi/PxWeb/pxweb/en/StatFin/StatFin\\_khi/statfin\\_khi\\_pxt\\_11xb.px/](https://pxdata.stat.fi/PxWeb/pxweb/en/StatFin/StatFin_khi/statfin_khi_pxt_11xb.px/)

<https://spoonacular.com/food-api/>