Conception Phase

Family life can be challenging and shopping for groceries can be a challenge for many people. One person might just mention that they need this from the store but who would remember what exactly to get and from which store. To better collaborate on a joined shopping list, the following web-based application, Family Shopping List (FSL), has been conceptualized to address this for family members. Members can add items to an inventory to shop from, e.g. apple, with a picture, some notes and what store to get it from. From the expandable inventory, family members can add inventory items and quantities to a specific shopping list for a store and date.

The application shall run in a web browser as a single-page application (SPA) as a responsive website with a mobile-first design in mind, which allows users to access the website also on their smartphones and not only from a computer.

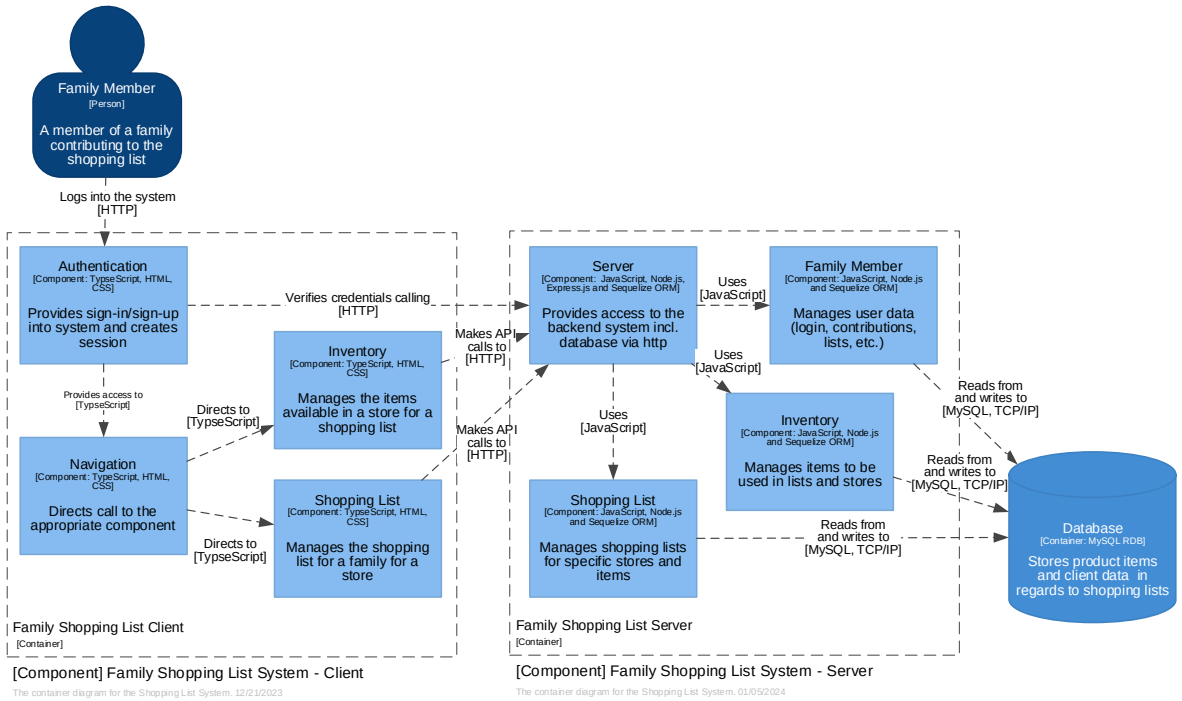

Figure 1: C4 Component diagram of the Family Shopping List System

The C4 diagram (Figure 1) illustrates the workflow and chosen technologies to implement the FSL system. Below the Family Member actor, the FSL consists of three main containers: (1) the **client container** uses TypeScript-based web application framework Angular, HTML and CSS[1], (2) the **server container** uses JavaScript, Node.js, Express.js and Sequelize ORM (Object-Relational Mapping) and (3) the **database** is MySQL[2].

The client container (1) consists of four main components: Authentication, Navigation, Inventory and Shopping List. The Navigation component's purpose is to direct calls to the Inventory and Shopping List component to manage the inventory or the shopping list, respectively. The Authentication component is the entry into the FSL system where a family member can either sign in or sign up if an account does not exist yet.

The server container (2) consists of the following components: Client, Inventory and Shopping List. The Client component represents the family member that had to either sign in or sign up. The components Inventory and Shopping List store, read, update and delete items from the database (3). The Server component exposes HTTP to direct API calls to the various components.

[1] I used this for DLBCSWAD01 – Web Application Development
[2] based on my experience and preferences