

# Shopping Assistant

## Intro

Shopping assistant is a tool/set of tools that help the average user to simplify the shopping experience by providing multiple services to help him in this matter. The app helps the user to find shops near him, also it facilitates the shopping experience by giving the user the ability to create and customise his own shopping list for his own needs.

## Technical details

### High level architecture

#### Components

1. Web app (React)
  - This component is part of the presentation tier of our application. This would represent a simple web application to display the features to be presented.
2. Mobile app (Android only)
  - For better accessibility we decided that a mobile app would suit our needs. This would also be part of the presentation tier of our app
3. Backend (Microservices)
  - Microservices based architecture
  - User microservice (responsible for the management of the users, also responsible for authentication and authorization)
  - Shop microservice (responsible for shop management)
  - Lists microservice (responsible for organizing shop lists for a user)
  - Products/Resource microservice (responsible for the management of products within a shop)

#### Technologies

1. Web app
  - a. React web app
2. Mobile
  - a. Android mobile application with Java and MVC
3. Backend
  - a. Api Gateway that would work as a proxy between the clients and the microservices
  - b. Each microservice would be implemented in either .NET Core or python
  - c. Rabbit mq as messaging system between microservices
  - d. PostgreSQL/MySQL for databases

## Use cases

1. As a user I can authenticate to the app and see my shopping lists
2. As a user I can create/customize my shopping list
3. As a user I want to be notified when I am close to a store and an item from my shopping list is there
4. As a user I can view the shops near me
5. As an administrator I can manage shops near me