Grocery Store Application with Item Recommendation

## 

## COMP4601

## For

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## 

## By

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**Abstract**

This project seeks to design a grocery shopping website’s catalogue such that customers receive recommendations based on the items in the basket, maximizing sales and customer satisfaction while playing into the psychology of impulse buying.

Individual product data was extracted using a web crawler, which scraped all the products from a site called <https://fillmyfridge.ca/> and stored them MongoDB. This data was then piped into an android application depending on the search query made by the user using RESTful API calls.

**Introduction**

We are in the midst of a technological boom right now, catalysed by advancements in data collection; our exposure to incredible amounts of data increases every day, and with it so does our ability to measure, store, and predict the same-- giving us the capability to learn, experience and create without any limits. However, an exposure to such incredible amounts of data can be quite chaotic. With incredible amounts of data comes incredible amounts of choices and due to so many choices we can spend way too much time picking a certain data or worse pick something completely irrelevant to our needs. This is where recommender systems comes in handy. They provide clarity in our decision to make meaningful connections out of huge amounts of information. Good recommender systems will know exactly what the user has in mind and from trillions of data points give the user exactly what they are seeking out. An excellent example of a cutting- edge recommendation system would be Amazon’s product recommendations. It inspired me to develop my own version of this technology, for use towards a smaller business ventures, which pose their own set of challenges.

Using my application, the user can search for a product in the store from several product data extracted from fillmyfridge.ca. Upon receiving the products from the search result, the user can add the product to their cart or click on the cart for more details about the product. If the user decides to click on the card representing the product they will be shown further details about the product and other products recommended to them. These recommendations will be of two categories, substitutes and complements. Substitute goods are products that are similar to each other, thereby replacing one another on occasion, contingent on price and other factors. Meanwhile, complementary products are often bought in concert with one another. For instance, Coco Cola and Pepsi and substitutes, while chips and dip are complements.

**Background**

In order to build my system, I needed three main components, the client with which data is accessed, the server which serves the data and most importantly the data itself.

**Related Work**

I am a placeholder

**Methodology**

In order to gather the data a web crawler written by me in Java was used to scrape through all the product catalogues from fillmyfridge.ca. Information from a product catalogue page was carefully extracted in order to facilitate the indexing and searching of user’s product requests.

**Discussion**

I am a placeholder

**Conclusion and Future Work**

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