

# Cornucopia

Grocery List Website Requirements

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## **1. Preface**

Cornucopia allows users to conveniently order groceries online to be delivered. Current grocery software proves inconvenient and tends to be a general hassle. Whether it be ordering from the comfort of your home, the necessity of delivery to your door, or any other reason, users can rely on Cornucopia to fulfill those needs and enhance the user experience.

## **2. Introduction**

### **Purpose**

The purpose of this web application is to be a tool for the Hofstra community to use for grocery shopping and delivery. Cornucopia is primarily used to help its community browse for produce and essential grocery-related necessities from the comfort of your home. You can access the app from any browser, from which you can create and shop for your cart of products reliably.

### **Project Scope**

This project entails designing, developing, and utilizing a functional web application. By developing a user-friendly interface, it is apparent that this application is a revolutionary development. Cornucopia allows its users to securely make accounts, manage favorites, and set up recurring shipments. Furthermore, it allows for a great user experience ensuring smooth transactions.

## **Definitions, Acronyms, and Abbreviations**

- User Interface (UI): The visual representation from which users interact with the web application.
- User Experience (UE): Denotes the overall functionality, efficiency, and usability the users have while interacting with Cornucopia.
- Application Programming Interface (API): A set of tools and protocols used when building web applications that Cornucopia follows. Cornucopia makes use of the public Kroger API for product data.

## **Technologies to be Used**

Cornucopia is implemented mainly through the use of Java and React.js. React is used for the frontend and the user interface, while the backend is utilizing Java to produce the server-side logic. Additionally, the Kroger API is used for product data and payment gateways. From the use of these tools, a fully functional website is generated.

## **Overall Description**

Cornucopia is a streamlined web experience from which users can confidently and comfortably order their grocery needs and have them shipped to their doorsteps. This simple and efficient application makes it easier than ever for users to order necessary groceries. The provided features include a range of functions, such as managing your cart and easy browsing options. Moreover, this is all made possible through an organized and comprehensive user interface, made with the intent of focusing on usability and accessibility. In addition,

Cornucopia complies with and has the capabilities to function within a web browser, making it a reliable modern solution for your groceries.

### **3. Functional Requirements**

#### **3.1. User Requirements**

3.1.1. Users are able to create their own account and sign in to save their cart and other information.

3.1.1.1. Email addresses and passwords are used to create user accounts.

3.1.2. There is a search bar that can be utilized to locate specific products.

3.1.3. Users may “favorite” certain products.

3.1.3.1. Users are able to use the “favorites list” to quickly add popular purchases to their current cart.

3.1.4. Users can add products to their cart.

3.1.4.1. Users can adjust the quantity of the products in the cart.

3.1.4.2. Users are able to remove products from the cart.

3.1.5. Users can choose the option to pick up groceries in store or have them delivered.

3.1.6. There is a customer service screen that has Cornucopia’s team’s contact information such as address and email address. There is also a space to add the user’s name, email, and a message for direct customer support team contact and swift replies.

### **3.2. System Requirements**

- 3.2.1. Cornucopia is a website-based application.
- 3.2.2. Cornucopia has a database that stores critical information for each product sold:
  - Name of product.
  - Image of product.
  - Price of product.
    - This is displayed as either per item or per pound (only in the case of produce).
  - Product availability for purchase.
    - Quantity is displayed if applicable.
    - If the product is out of stock, user can leave contact information (email address or phone number) to be notified when the product is in stock again.
- 3.2.3. User information is stored in a database once users create an account and is accessed when logging in.
- 3.2.4. Cornucopia sends a confirmation email to the user for new account creation.
- 3.2.5. There are main buttons to choose a category: produce, meat, dairy, beverages, and frozen items.
- 3.2.6. Cornucopia has a browse page if the user decides to look at all products available. There is a search bar to find particular products. There is product filtering to make sorting their needs simpler.

- 3.2.6.1. Users can filter based on a pre-made category as stated above, as well as further filtering (ex. fruits and vegetables within produce or specific animals' meat) if needed.
- 3.2.6.2. Filtering also includes available product quantity as well as current sales and featured products.
- 3.2.7. There is a database used to store all the favorite products. There is a button on the favorites page to instantly add the product to the cart.
- 3.2.8. Cornucopia allows users to manipulate their cart information, such as what is added and removed, the quantity of items the user would like to purchase, and to choose either pick-up or delivery.
- 3.2.9. Cornucopia automatically calculates the total of the cart, adds applicable taxes, applies any user-inputted discount codes, and displays the final cart total.

### **3.3. Visual Requirements**

- 3.3.1. Cornucopia's home page has buttons labeled "Home", "Search", "Browse", "Account", and "Cart" that will direct the user to each respective page.
- 3.3.2. Clicking into the search bar brings up a list of recent searches.
- 3.3.3. Buttons, such as "Account" and "Cart", have a picture as well as wording to easily identify each button's function.

- 3.3.4. There are large, identifiable icons on each button when selecting the type of product (produce, dairy, etc.) as well as when selecting each individual item.

## **4. Non-functional Requirements**

### **4.1. Performance Requirements**

- 4.1.1. Cornucopia is available for users to browse the catalog 24 hours a day, 7 days a week.
- 4.1.2. Cornucopia allows the user to place an order for pickup during business hours.
- 4.1.3. If the desired item is not available for sale, an alternative item is recommended.
- 4.1.4. The search function takes no longer than 10 seconds to pull a list of matching food items.
- 4.1.5. All the items in the public Kroger API are available in the storefront.

### **4.2. Operation Requirements**

- 4.2.1. Cornucopia is designed to facilitate a high number of customers browsing the catalog at once. This is achieved by making the server code efficient enough to not cause an overload.
- 4.2.2. Cornucopia is accessible to all customers, including those with disabilities involving motor skills and visual impairments. The application is easy to navigate without a mouse and is compatible with screen readers where appropriate.



### **4.3. Security Requirements**

- 4.3.1. Cornucopia hashes and salts passwords to keep user credentials safe from malicious actors.
- 4.3.2. Cornucopia employees monitor placed orders for fraudulent purchases.
- 4.3.3. Accounts are locked out after 3 consecutive login attempt failures.

### **4.4. System Evolution**

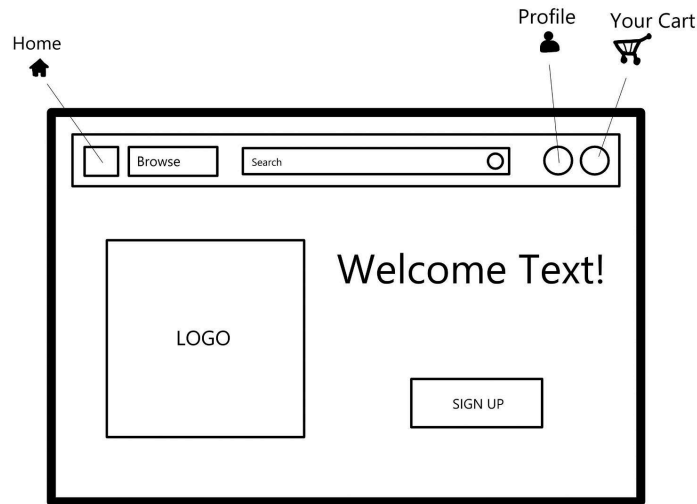
- 4.4.1. Cornucopia will in the future take advantage of secure payment gateways such as PayPal, Stripe, GPay, and Apple Pay.
- 4.4.2. Cornucopia will also allow customers to “favorite” commonly purchased items.
- 4.4.3. Customers are able to set an item to be ordered repeatedly on a set schedule. For example, a user may set their profile to automatically order toilet paper every 2 weeks.

## **5. User Interface Features**

- The sample images included are mockups of the *functionality* of each page. They are not reflective of the style choices of the final application and are likely to experience changes over the course of development.

### **5.1. Home Page**

Sample User Interface



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- If the user has not signed in yet, the Home page displays as above with a “Sign Up/Log In” button.
  - If the user is already logged in, the Home page has a greeting and displays recently viewed products.

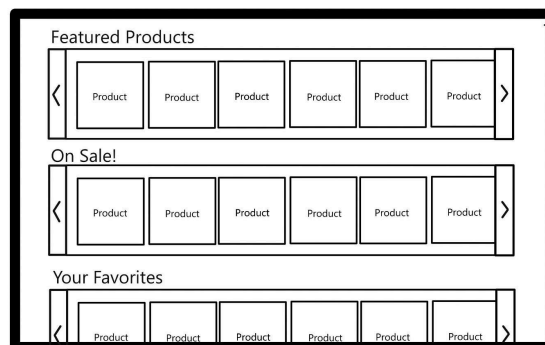
#### 5.1.1. Taskbar

- The taskbar, as seen on the Home page, is sticky. As you scroll, it will remain at the top of the screen.
- The taskbar has been omitted from the other sample images to focus on the specific features of each page. The taskbar is present throughout the web app.
- The “Home” button takes you to the Home page, which is displayed above.
- The “Browse” button takes you to the Browse page.

- The search bar autofills searches with suggested items, which, when clicked, will bring you to the item's specific Product page. Other searches will bring you to the Search page.
- The "Profile" button will take you to your Account Information page, which includes profile settings, preferences, and customer service chat.
- The "Cart" button will take you to your cart/checkout page.

## 5.2. Browse Products Page

### Sample User Interface



- The Browse page includes various categories, including the ones displayed above (Featured Products, On Sale!, Your Favorites, Recently Viewed) and more.
- The product tiles, when hovered, enlarge to give important information at a glance. There is also a "Quick Add To Cart" button,

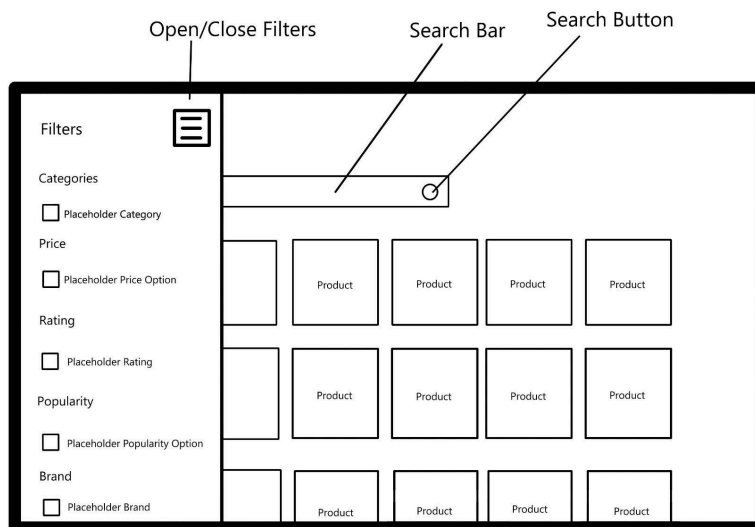
which when clicked will automatically add the product to your cart.

Clicking the product will take you to the Product page.

- Each category can be scrolled with the included arrow buttons or with the scroll wheel.
- When the user runs out of recommended categories, a button will appear at the bottom of the page, which will direct you to the Search page. This is to indicate that the Browse page has no more categories to show the user.

### 5.3. Search Page

#### Sample User Interface

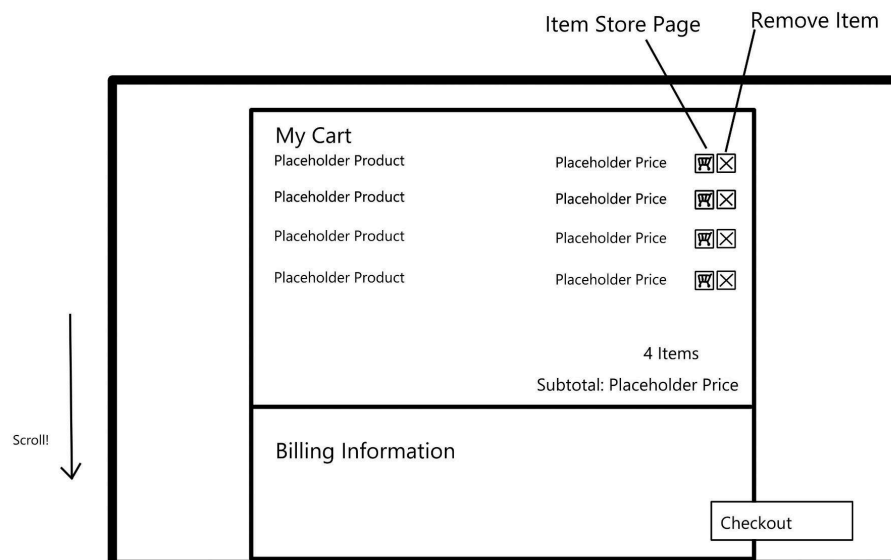


- The Search page is where inconclusive searches will take you (i.e., searches that are not autocompleted). This page is also directly accessible from the Browse page.

- The buttons shown on the filters sidebar are sticky. As you scroll, the Filter page is minimized. When reopened, the Filter page is displayed over the main page, as shown above.
- The tiles on the Search page work functionally the same as those on the Browse page, laid out in a different format.
- The filtering is on a variety of item properties, as seen above. The filter options shown currently are placeholders.
- The search bar actively updates the grid of products listed.

#### 5.4. Cart/Checkout Page

##### Sample User Interface

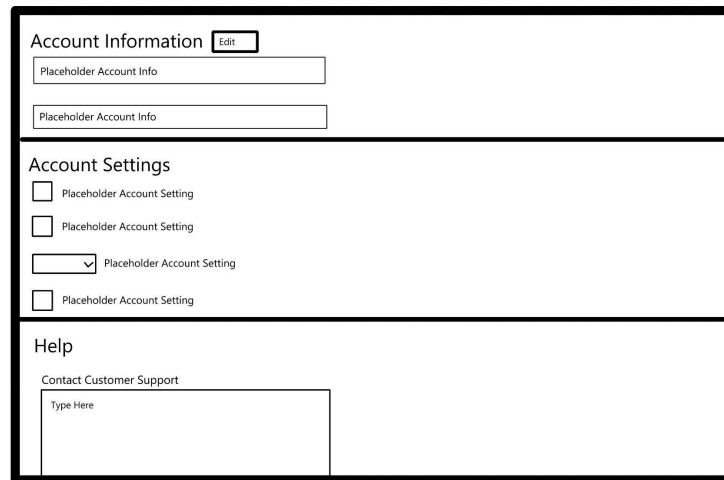


- The Cart/Checkout page acts as a long scrolling body consisting of the items in your cart, total price and per item breakdown, and other order options such as choosing delivery or pickup.

- The “Checkout” button takes you to an order confirmation page.

## 5.5. Account Information Page

Sample User Interface

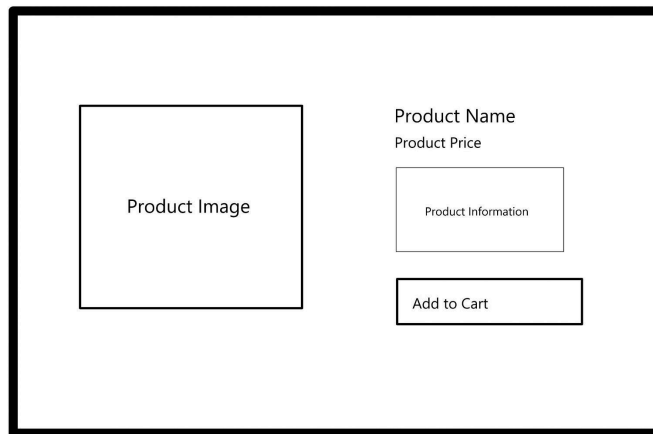


The image shows a wireframe of the 'Account Information' page. It is divided into three horizontal sections. The top section, titled 'Account Information', contains two text input fields, each with the placeholder text 'Placeholder Account Info', and an 'Edit' button. The middle section, titled 'Account Settings', contains four settings: two with checkboxes and the placeholder 'Placeholder Account Setting', one with a dropdown menu and the placeholder 'Placeholder Account Setting', and one with a checkbox and the placeholder 'Placeholder Account Setting'. The bottom section, titled 'Help', contains the text 'Contact Customer Support' and a text input field with the placeholder 'Type Here'.

- The Account Information page includes three major sections; Account Information, Account Settings, and Help.
- The Account Information section includes standard info such as email, name, billing information, address, and other user info.
- The Account Settings section includes settings for the application’s functionality, such as accessibility settings and other user preferences.
- The help page contains information about using the app and ways to contact support.

## 5.6. Product Page

Sample User Interface



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- The Product page includes all information available about the product in question. An image, name, price, brand, and additional information are all provided here.
  - On this page, the user has the ability to add the product to their cart through an “Add To Cart” button.