

UNSW



COMP3900 Computer Science Project

Project Proposal

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Background

Problem Statement

The COVID-19 pandemic and life in lockdown have limited Sydneysiders' abilities to travel, socialise, and even the small joys in life like going out for a coffee or brunch (Health, 2021). Many hospitality businesses suffered due to decreased patronage or complete closure (Claughton, 2021). Restaurant and café have resorted to new ways of reaching customers. Many businesses have resorted to online ordering platforms such as UberEats (Uber Technologies Inc., 2021) and Menulog (Menulog) to continue to serve customers with pickup takeaway and delivery orders. However, these applications are often limited in how far they can deliver products, leaving out a large group of customers that wish to order from business who are not in their vicinity. This is most likely due to the perishable nature of the products and high delivery fees. There are also e-commerce businesses providing customers with prepared ingredients to cook at home, promising restaurant quality meals (HelloFresh, 2021). Nevertheless, customers wish to experience meals from well-known restaurants and cafes but are missing out due to their location or restrictions.

Another pastime much loved by the Sydney community is visiting cafés for modern food and specialty coffee. Australia has a rich coffee culture and is home to multiple independent coffee roasters, most of them selling their coffee via their own online shop (Mecca Coffee, 2021) (Paradox Coffee Roasters, 2021). While coffee experts are aware of where to get their favourite specialty coffees, many customers may find it difficult to discover new coffees to try. The concept of a coffee marketplace is at its infancy, with platforms either providing little variety or lack of information for customers to choose according to their preferences.

Solution

Our product is an e-commerce platform where customers can discover coffees from various roasters. With home coffee consumption growing by 49% during the COVID-19 pandemic last year, we believe this platform could be very popular amongst long term coffee consumers and novices (Statista, 2021). In addition to this our product is a collaboration with various cafés around Sydney, who will design meal and dessert kits that emulate the popular dishes served at these eateries, allowing the customer to have a full café experience in the comfort of their homes. What makes this platform unique is a combination of functionalities that both benefit the customer and entice them stay connected to the website. These features include a recommender system, a comprehensive review system, and a battle pass style membership system that rewards the customers with increased purchases and interactions with the platform.

Existing Systems

We review two existing systems that share a similar market share with our proposed coffee e-commerce platform, provide a description and an analysis of the drawbacks.

Barker St

Barker St is an online coffee marketplace where customers can browse a selection of 200+ coffee beans, capsules, instant and drip bags from Australia's finest roasters (Barker St). It contains a blog and city guide section for customers who wish to enjoy coffee in the city. A unique functionality is a monthly coffee subscription based on your personal preferences, so the experience of ordering coffee is much more personalised and hassle free. Some drawbacks are:

- Page scrolling: The page scrolling animation is slow and plays at a low refresh rate, which downgrades the overall UX when navigating around the webpage.

- Loading time: Webpages tend to take very long to load, upwards to 10 seconds
- Quantity visibility: The quantity value on the product page is in white on a light grey background, which makes it difficult to see for the user.
- Product image: While the brand of the product is displayed, there is no image of the actual product itself. This inhibits the browsing experience for the customer and makes a product not as easily identifiable on first glance.

Dulcet Cakes and Sweets

Dulcet Cakes and Sweets is a boutique patisserie café with an online shop front specialising in a variety of sweets including cakes, matcha powder, pudding, and coffee pods (Dulcet Cakes & Sweets). It offers typical features you would find for an e-commerce website, such as the ability to search for products, view product's information, a cart system, and checkout page. They offer pickup or delivery service. The UI is simple, clean, and easy to navigate around. However, there are multiple notable drawbacks.

- No account system: The website does not have an option for the user to create an account. A positive outcome is that users do not need to go through the hassle of creating an account just to buy some sweets. But without the ability to retain payment and delivery information, returning users will need to continuously refill out this form during checkout, which adds extra inconvenience. Another drawback is if a user wants to continue shopping on another device, they will need to readd all the previous items into the new cart.
- No review system: There appears to be a rating attribute for each product, however not a single product has received a rating, and there is no option to leave a rating or a review, even after purchasing the product. The drawback is customers do not know the quality of the product they will be purchasing.
- Lack of product description: the information offered in the product description is inconsistent across products. While some products contain a full ingredient list, others do not. This will defer customers with allergies from purchasing the product.
- Delivery information: Delivery is only offered on orders above \$50. However, the website does not prevent the user from filling out the delivery and payment information on the checkout page if their order is under \$50. This critical information is also located only below the delivery form; therefore, it would not be uncommon for users to fill out the form, only to find out they cannot proceed with the order and become frustrated.
- Lack of product description: the information offered in the product description is inconsistent across products. While some products contain a full ingredient list, others do not. This will defer customers with allergies from purchasing the product.
- Delivery information: Delivery is only offered on orders above \$50. However, the website does not prevent the user from filling out the delivery and payment information on the checkout page if their order is under \$50. This critical information is also located only below the delivery form; therefore, it would not be uncommon for users to fill out the form, only to find out they cannot proceed with the order and become frustrated.

In our user stories we aim to address some of these drawbacks as an improvement to existing systems.



STANLEY DOCK DISTRICT

**Toffee dark chocolate
raspberry**

Suitable for:
Espresso

\$15.00 - \$52.00

RUMBLE GRIND Choose an option ▾

RUMBLE SIZE Choose an option ▾



FREE shipping when you spend \$99+

HAVE YOU CONSIDERED A SUBSCRIPTION?

Receive a 5% discount when you purchase 2+ coffee bags from the one roaster.

Beans From: Brazil, Papua New Guinea

Notes: Toffee dark chocolate raspberry

Coffee Story: Pedro Gabarra grows Rumble's Brazil Santo Antonio in the Campos Das Vertentes region. This coffee brings the huge chocolate burst that makes Shadow the People's Champ.

Rumble's Papua New Guinea Simbu grows high in the Highlands region by Kongo Coffee Limited. This export company is indigenous owned and committed to paying the highest possible price to the growers.

[VIEW ALL COFFEES FROM RUMBLE](#)

This coffee will be roasted fresh for you. Rumble will roast your coffee on Wednesday and dispatch on Thursday.

TAG: Rumble

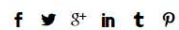


Figure 1: Sample product page for Barker St. Note the lack of images of the actual product and difficult to see quantity number.

Birthday 10% Off voucher give away when you spend over \$80*Offer valid while stocks last
 Australia's Luxury Boudique since 2001

[CUSTOMER REVIEWS](#)
[SHOP ONLINE](#)
[CAKE ANALYSIS](#)
[ABOUT US](#)
[CONTACT](#)
[FAQ](#)

Home / Cakes / Pokemon Birthday Cake

Pokemon Birthday Cake

*Contains traces of nuts and sesame

*Minimum ONE WEEK preorder

[VIEW FLAVOUR CHART](#)

\$178.00

Red Velvet

Additional Details

Cuts: ☐ ☐ ☐
 Big ☐ Single Cuts (+\$1.00) ☐

[ADD TO CART](#)

Any Questions? Read Our [FAQ](#)

For orders within 48 hours

| | | |
|------------------------------------|--|---------------------------------------|
| Haymarket (02) 9588 5511 | The Galleries (02) 9584 4826 | Marrickville (02) 9521 2061 |
|------------------------------------|--|---------------------------------------|

[SHOW ONLINE](#)

More Readymade Cakes & Sweets

Mango Pseudo Coconut Sago Mousse
 5.0 (5)
 Savoury Cake
 \$19.00

Winnie The Pooh Birthday Cake
 5.0 (5)
 \$128.00

Pokemon Birthday Cake
 5.0 (5)
 \$178.00

Figure 2: Sample product page for Dulcet Cakes and Sweets. Although a disclaimer is present for nuts and sesame, no other ingredients are listed.

User Stories & Sprints

User Story Backlog

Screenshots of the user story backlog are provided below, as well as each individual user story detailed.

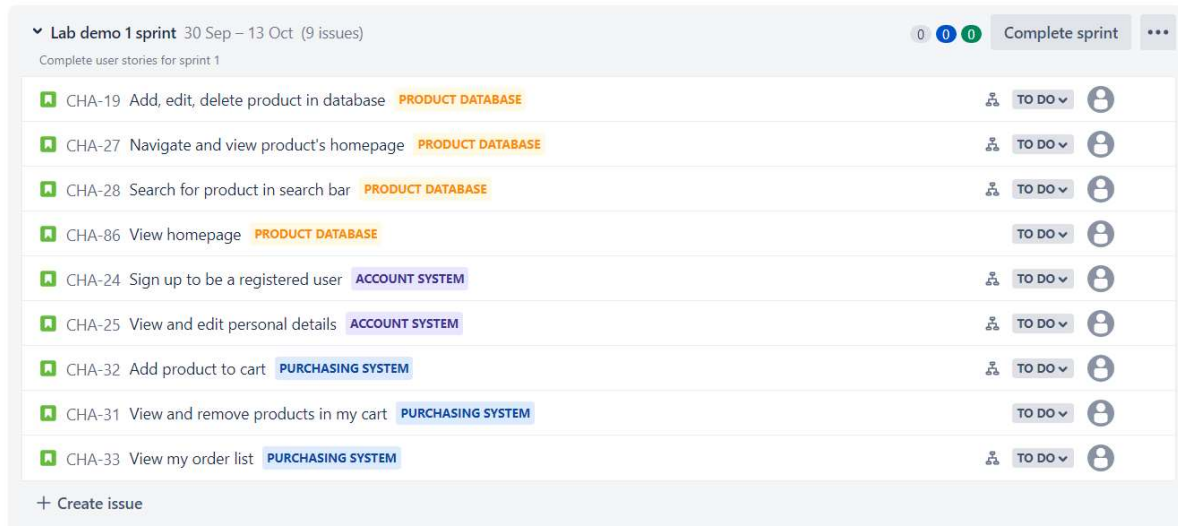


Figure 3: User story backlog

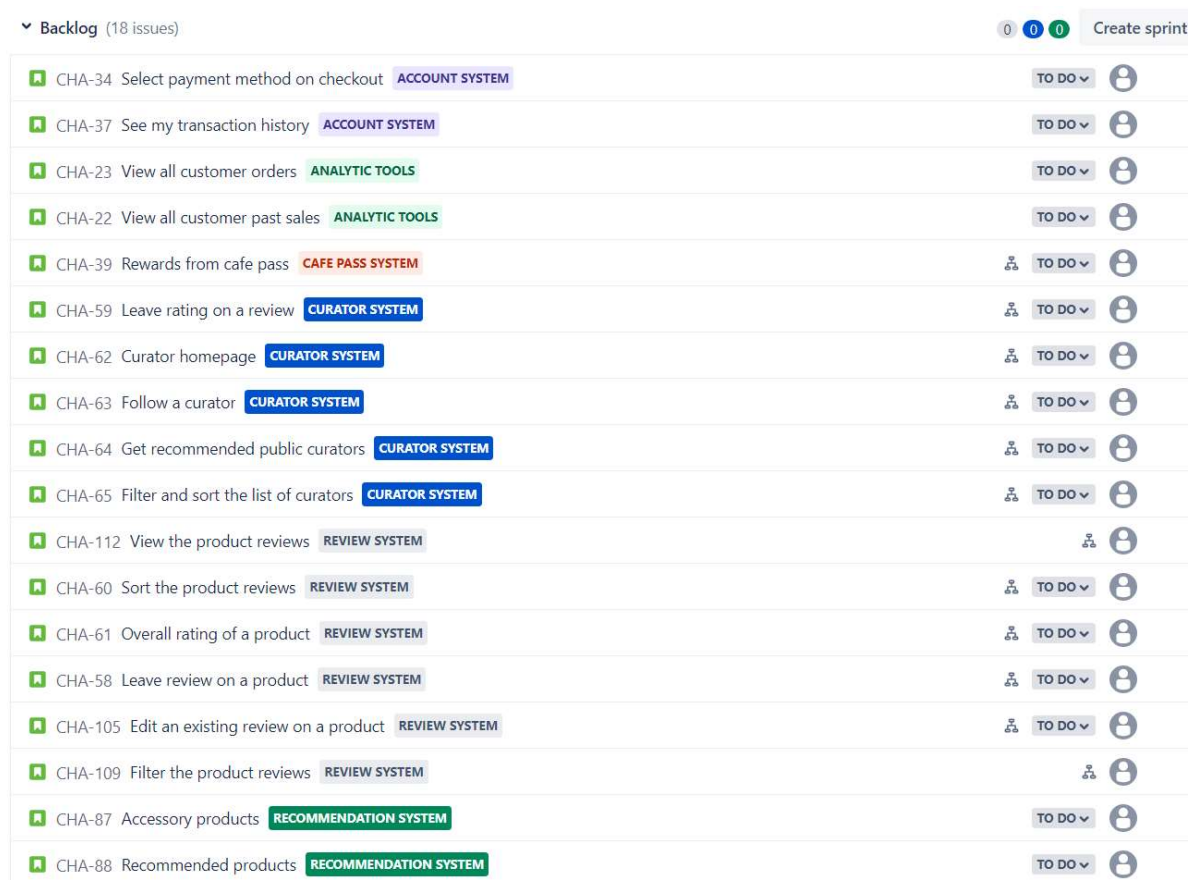


Figure 4: User story backlog

Epic story 1: Product database

As an admin, I want to have access to a product database so I can browse for products I wish to purchase.

User story CHA-19: Add, edit, delete product in database

Description: As an admin, I want to be able to add, edit, and remove a product to the database so I can inform customers of products that are in stock and with the latest information.

Functionality: Product Database

Acceptance criteria:

- A 'Product database' page lists all the products currently in the database
- This webpage is accessible only to the admin account, and not user account
- It can be accessed via a button on the nav bar
- The webpage has a single button that will add a new product, causing a popup to appear
- The admin can enter information of a new product
- A button will cause current changes to be discarded
- A button will add the new product into the database, provided all the new product's details are filled
- On success of a product being added, edited, or deleted, a confirmation message is displayed on the page
- Once product changes are made, this information should be reflected on the website the next time a user visits any webpage.
- Product class details:

| Attribute | Input format |
|------------------------------------|-------------------------------------|
| UID | Int (auto generated by system) |
| Name | Char |
| Price | Float (2 decimal places) |
| Category | Subclass of parent class 'category' |
| Description | Char |
| Warranty | Integer |
| Estimated business days to deliver | Integer |
| Out of Stock | Boolean |
| Images | png or jpg format |

User story CHA-27: Navigate and view product's homepage

Description: As a user, I can navigate to a product's page, so that I can see more details about the product.

Functionality: Product database

Acceptance criteria

- Any item on the webpage that displays a product will contain a link to the product's webpage. For example, the homepage will display a variety of products.

- The product webpage shows more details of the product, where they will have the option to buy, or add to their cart, the product

User story CHA-28: Search for product in search bar

Description: As a user, I can search for a product in the search bar with filters, so that I can find a product faster.

Functionality: Product database

Acceptance criteria

- The user has access to a search bar in all pages to search for a product by entering key words
- The user is brought to a results page showing products matching the key words in order of relevance
- The user can filter products using the following criteria
 - Price (low to high or high to low)
 - Ratings (low to high or high to low)
 - Product Category
 - The user can apply multiple filters to their search
 - The user can remove a filter during their search

User story (CHA-86): View homepage

Description: As a user, I want to be able to visit the homepage for the website, so I can view randomised and recommended products to me.

Functionality: Product database

Acceptance criteria:

- When I sign in or sign up, it should redirect me to the homepage
- Homepage should be accessible on all webpages via a clickable icon
- The homepage should provide me randomised and/or recommended products (for now, have randomised products)

Epic story 2: Purchasing system

As a user, I want to be able to purchase products that are available in the catalogue.

User story CHA-32: Add product to cart

Description: As a user, I want to add products to my shopping cart so I can keep track of what I want to buy.

Functionality: Purchasing system

Acceptance criteria

- On every product page, a button is present that will add the product to the user's cart
- A quantity can be specified by selecting a number or typing the number in a field

User story CHA-31: View and remove products in my cart

Description: As a user, I want to view and delete my carts contents, so I can keep track of what I want to buy.

Functionality: Purchasing system

Acceptance criteria:

- There is a webpage that displays my cart's contents as entries in a list
- It should be accessible from a dropdown on most pages on the website
- A hyperlink for each product in my cart navigates to the product page
- Each entry should contain the cost and name of the product
- Each entry should have an image of the product
- A button next to each entry can remove the product.

User story CHA-33: View my order list

Description: As a user, I want to view my order, so I can see the information regarding cost and products

Functionality: Purchasing system

Acceptance criteria

- The page should indicate total cost of items
- The page should include summary of items I am purchasing
- The page should indicate cost and quantity of each item
- A spreadsheet can also be displayed to summarize this information concisely
- Each row has
- Unique product and its UID
- Quantities placed as order
- (Optional) a graph to display this information and trends over time

Epic story 3: Account system

As a user, I want to have an account system depending on my user type (Admin, Customer, Curator)

User story (CHA-24): Sign up to be a registered user

Description: As a user, I can sign up to be a registered user, so I can purchase items from the store and save my details.

Functionality: Account system

Acceptance criteria:

- A user can register as one of the following account types:
- Customer- can centrally view and manage all of my existing orders, account settings, reviews, and café pass status.
- Curator- Same as customer class with additional curator related features (TBA)
- The user can navigate to a sign up page from any page
- The user signs up by entering an email address and password
- The user is then taken to a new page where they can fill in the rest of their details
- Shipping/billing address
- Phone number
- Payment details
- Certain fields (i.e., payment details) can be filled out later if desired
- Upon completion of registering the user is brought back to the last page they visited before registering

User story (CHA-25): View and edit personal details

Description: As a registered user, I can edit and save my personal details, so that on subsequent checkouts I do not need to retype my details again.

Functionality: Account system

Acceptance criteria

- The user is able to enter personal details upon signing up
- The user can navigate to their account page to update or remove their details if needed
- As a user, I want to see and edit my payment details for my account, so I know how I can verify how I am paying for the product
- Details include:
 - The payment method should be shown (PayPal, credit card, internal credit system?)
 - The customer's billing address, and name should be shown
 - The total cost of the order should also be shown again as verification
 - A form where I can change the payment method (PayPal, credit card, internal credit system?)
 - A form where I can select my billing details (billing address, name)
 - A form where I can select my default billing method (checkbox)
 - I can also select no payment method as default

User story CHA-34: Select payment method on checkout

Description: As a user, I want to select payment method at checkout, so I can decide at the time of purchase how to pay

Functionality: Purchasing system

Acceptance criteria:

- Choose between PayPal, credit card, etc
- A separate 'buy now' button on the product page

User story CHA-37: See my transaction history

Description: As a user, I want to see my previous purchases, so I have a history of my transactions

Functionality: Account system

Acceptance criteria:

- See the date of purchase
- Filter by date of purchase (within week, month, range of dates)
- See recommended alternatives if they exist
- See product discounts for purchased items

[Epic story 4: Analytic tools](#)

As an admin, I want to have tools to analyse products I have sold so I can oversee and manage my economic objectives.

User story CHA-23: View all customer orders

Description: As an admin, I want to be able to view current orders from all customers for analytics purposes, such as gauging the success and popularity of a particular product.

Functionality: Analytic tools

Acceptance criteria

- The admin has access to an admin account
- A 'View current orders' page lists all products that are currently in cart for all customers
- This webpage is accessible only to the admin account (and not user account)
- It can be accessed via a button on the nav bar
- A list of all current orders is displayed
- With columns/attributes:
 - Product name, UID, and other attributes
 - Customer ID
- List displays 50 orders at a time; can view prev/next 50 sales using left and right buttons
- A spreadsheet can also be displayed to summarize this information concisely
- Each row has
- Unique product and its UID
- Quantities placed as order

- (Optional) a graph to display this information and trends over time

User story CHA-22: View all customer past sales

Description: As an admin, I want to be able to view sales data for all the products that have been sold so far for analytics purposes, such as gauging the success and popularity of a particular product.

Functionality: Analytic tools

Acceptance criteria

- The admin has access to an admin account
- A 'View past sales' page lists all products that have been sold
- This webpage is accessible only to the admin account (and not user account)
- It can be accessed via a button on the nav bar
- A list of all past sales is displayed
- With columns/attributes:
 - Product name, UID, and other attributes
 - Customer ID
- List displays 50 sales at a time; can view prev/next 50 sales using left and right buttons
- A spreadsheet can also be displayed to summarize this information concisely
- Each row has
- Unique product and its UID
- Quantity sold
- Revenue generated
- (Optional) a graph to display this information and trends over time

Epic story 5: Recommendation system

As a customer, I want to have recommended products automatically shown that are tailored to my needs for greater browsing convenience.

User story CHA-87: Accessory products

Description: As a registered user, I want to find the best equipment for my needs. Given that I have already have some products in mind, when I view that product, I would also like to see what other products are available to go with it.

Functionality: Recommendation system

Acceptance Criteria:

I should be able to see items that are related to the item I'm viewing

- I should be shown products that will work with my existing products
- Example: If I am viewing coffee bean product page, I could also see a coffee mug or cup

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| User story CHA-88: Recommended products |
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| Description: As a registered user, I want to find products that fit a person's interests and tastes. Given that I have an item or criteria in mind, when I view that item, I would also like to be shown other items that relate to the same subject matter or taste. |
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| Functionality: Recommendation system |
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| Acceptance criteria: |
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| <ul style="list-style-type: none">• I want to tell the website my interests so that I can be shown things I'm interested in• I don't want to be shown things that aren't related to my interests• For example, if I view a particular brand of coffee beans, I should also see other brands of coffee beans in my recommendations• On user signup, a form can be optionally completed that asks the user for their preferences, such that the recommendation system can immediately tailor to the user's preferences when they first visit the homepage after signup. |
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Epic story 6: Review system

As a user, I want to leave and see reviews, so I can provide and get feedback for products from other customers.

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| User story CHA-112: View the product reviews |
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| Description: As a user, I want to be able to view product reviews, so I can see what other customer's opinions are |
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| Functionality: Review system |
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| Acceptance Criteria: |
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| <ul style="list-style-type: none">• List of customer reviews should be visible on the product page at the bottom• Each customer review will consist of<ul style="list-style-type: none">• 0 to 5 star rating• The date in which it was last edited• An optional text description of their review• The number of thumbs up ratings from other customers• The number of thumbs down ratings from other customers• A customer can only provide one review per product |
|--|

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| User story CHA-60: Sort the product reviews |
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|---|
| Description: As a user, I want to be able to sort the reviews, so I can find the type of reviews that are most useful for me |
|---|

Functionality: Review system

Acceptance Criteria

- User can sort the reviews by
- Most liked
- Most disliked
- Most controversial
- Newest
- Oldest
- Level/status of the reviewer's curator profile

User story CHA-61: Overall rating of a product

Description: As a user, I want to be able to see the overall user rating of a product, so I can determine how other customer's think about its quality

Functionality: Review system

Acceptance Criteria

- A 0 to 5 star rating average is provided at the top of the product page

User story CHA-58: Leave review on a product

Description: As a user, I want to leave a review on a product, so I can provide feedback to the store

Functionality: Review system

Acceptance Criteria

- User can submit a review by filling out a form containing
- A 0 to 5 star rating on a slider which is compulsory
- Text field for their written review optionally
- Can only leave one review on the product

User story CHA-105: Edit an existing review on a product

Description: As a user, I want to edit an existing review on a product, so I can revise my opinion

Functionality: Review system

Acceptance Criteria:

- User can click an edit button to open
- A text field for editing the written review
- A slider for editing the 0-5 star rating

- User can click on the save button to keep changes

User story CHA-109: Filter the product reviews

Description: As a user, I want to filter the product reviews by stars, so I can see reviews across different types of customers

Functionality: Review system

Acceptance Criteria

- Filter by number of stars on review

Epic story 7: Curator system

As a user, I want to be able to rate other customer's reviews and follow them, so I can follow their recommendations

User story CHA-59: Leave rating on a review

Description: As a user, I want to be able to rate other customer's reviews, so I can give feedback on the usefulness of that review

Functionality: Curator system

Acceptance Criteria

- User can leave either a single thumbs up or thumbs down rating on a review

User story CHA-62: Curator homepage

Description: As a user, I want to be able to become a curator, so I can advertise my reviews with other customers

Functionality: Curator system

Acceptance Criteria

- Should be accessible from the "your profile" page
- A user's curator profile is private by default
- A user can make their curator profile public to make it shareable and advertisable to others
- A user can customize their curator page by
 - Showing their reviews sorted by average product rating
 - Showing their reviews sorted by how other customers rated it
 - Pinning a specific individual review
 - Showing their most recent reviews
- A user can add other social media links to their curator page
 - Could include YouTube, Tiktok, Instagram, Facebook, WeChat

User story CHA-63: Follow a curator

Description: As a user, I want to be able to follow a curator, so I can be recommended what they like

Functionality: Curator system

Acceptance Criteria

- A user should be able to press a follow button to follow the curator
- Following a curator should influence recommendation system to show their positively reviewed product on a user's homepage
- User can decide to get notifications about followed curator reviews
- The follow/unfollow button should be in the same location

User story CHA-64: Get recommended public curators

Description: As a user, I want to see a list of curators, so I can see customers who are curators

Functionality: Curator system

Acceptance Criteria

- A user can browse through a list of recommended curators based on their purchasing preferences
- The list of curators should be recommended based on purchasing history and similarities

User story CHA-65: Filter and sort the list of curators

Description: As a user, I want to be able to sort and filter through the list of curators, so I can find a curator who's suitable for me

Functionality: Curator system

Acceptance Criteria

- A user can filter curators by
- Average customer rating
- Types of products reviewed by curator
- Name of the curator
- Number of follows of curator
- A user can sort curators by
- Average customer rating of their reviews
- Number of followers they have

Epic story 8: Café pass system

As a customer, I want a Café pass system linked to my account so my loyalty to the store is rewarded with benefits.

User story CHA-39: Rewards from café pass

Description: As a user, I want to gain perks and benefits for levelling up in the café pass so there is an incentive for me to continue purchasing from the website

Functionality: Café pass system

Acceptance criteria:

- A café pass lasts for a season (i.e., 3 month period)
- The café pass consists of X levels (e.g., 20 levels)
- Purchasing products directly increases the customer's café pass level (i.e., \$1 = 0.05 levels, \$20 = 1 level). Minimum spend is \$1 to level up (although all items should be >\$1)
- Each level has its own rewards and benefits
- There will be a free and paid café pass
- Customers on the free version can only enjoy benefits offered at certain levels
- Customers on the paid version can enjoy benefits at all levels
- Customers by default will be on the free café pass. Gaining access to the paid version will incur a cost (\$20)
- One or more of the following rewards can be offered at each level:
 - Discount of various ranges (5-50%)
 - Buy 1 get 1 free
 - etc (we will come up with more later)
- The progression status of the café pass should be displayed on the top of every webpage

Sprint Dates

The project will consist of three sprints and are accommodated for such that they end before their respective demonstrations and retrospectives.

- Sprint 1: 30 September 2021 – 13 October 2021
- Sprint 2: 13 October 2021 – 3 November 2021
- Sprint 3: 3 November 2021 – 17 November 2021

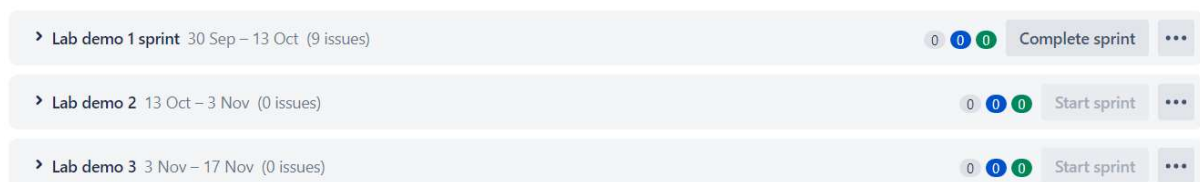


Figure 5: Screenshot of sprint dates on Jira

User stories for First Sprint

To prioritise completion of the product database, account system, and purchasing system functionalities, their related user stories have been identified for the first sprint.

The screenshot shows a Jira sprint board for 'Lab demo 1 sprint' (30 Sep – 13 Oct, 9 issues). The board is titled 'Complete user stories for sprint 1' and has a 'Complete sprint' button. The issues are listed in a table with columns for issue key, description, system, and status. The issues are categorized by system: Product Database (4 issues), Account System (2 issues), and Purchasing System (3 issues). Each issue has a 'TO DO' status and a user icon.

| Issue Key | Description | System | Status | User |
|-----------|---------------------------------------|-------------------|--------|-------------|
| CHA-19 | Add, edit, delete product in database | PRODUCT DATABASE | TO DO | [User Icon] |
| CHA-27 | Navigate and view product's homepage | PRODUCT DATABASE | TO DO | [User Icon] |
| CHA-28 | Search for product in search bar | PRODUCT DATABASE | TO DO | [User Icon] |
| CHA-86 | View homepage | PRODUCT DATABASE | TO DO | [User Icon] |
| CHA-24 | Sign up to be a registered user | ACCOUNT SYSTEM | TO DO | [User Icon] |
| CHA-25 | View and edit personal details | ACCOUNT SYSTEM | TO DO | [User Icon] |
| CHA-32 | Add product to cart | PURCHASING SYSTEM | TO DO | [User Icon] |
| CHA-31 | View and remove products in my cart | PURCHASING SYSTEM | TO DO | [User Icon] |
| CHA-33 | View my order list | PURCHASING SYSTEM | TO DO | [User Icon] |

+ Create issue

Figure 6: User stories identified for first sprint

Project Objectives and User Stories

Each user story is associated with one objective. Here we consider the functionalities, epics and objectives to be the same.

1. **Product database**- a catalogue of products that is browsable by the user with relevant details (price, product description, images, etc), and is editable by the admin
2. **Purchasing system**- allows the user to buy products
3. **Account system**- users can view and manage centrally all their existing orders, account settings, reviews, and café pass/progression status
4. **Analytic tools**- to analyse all transactions and allow the admin to manage and oversee their economic objectives
5. **Recommendation system**- shows products that are tailored to the user's preferences
6. **Review system**- customers can leave reviews on products
7. **Public curator system**- customers can opt in to become a curator and showcase their reviews on their profile
8. **Café pass system**- offers discounts and benefits to users the more money they spend

| Objective | User story (CHA-X) |
|-----------|----------------------|
| 1 | 19,27,28,86 |
| 2 | 32,31,33 |
| 3 | 24,25,34,37 |
| 4 | 23,22 |
| 5 | 87,88 |
| 6 | 112,60,61,58,105,109 |
| 7 | 59,62,63,64,65 |
| 8 | 39 |

Novelty of novel user stories compared to existing systems

In order to differentiate this new e-commerce platform from existing companies in the market, this website will offer two key pieces of novel functionality. The first is a way of providing ratings on reviews left by customers underneath product listings and the second is a unique loyalty programme that borrows its functionality from the gaming industry. These features have been available on gaming marketplaces, but they are yet to be applied to the physical retail products.

User reviews present several challenges for e-commerce. Reviews are an important part of the functionality of any online marketplace and provide users with a means of determining whether a product lives up to its claims. However, user review systems do have a fatal flaw, fake reviews. This is a phenomenon observed in various online stores whereby the manufacturer or seller of the product bombards their listing with positive reviews which inflates the product's average rating and also dilutes the amount of honest criticism. By allowing users to rate user reviews, the honest reviews will be weighted more highly than the spam ones. Additionally, accounts that receive consistently bad reviews on their comments will be given less weighting on other listings meaning that trusted reviewers will receive priority with their comments. Users will also be allowed to curate lists of their favourite products, allowing customers to purchase items recommended by people with similar tastes. The review system will also apply to curators allowing good recommendations to be rewarded with extra visibility in the community.

Inspiration 1 – Steam

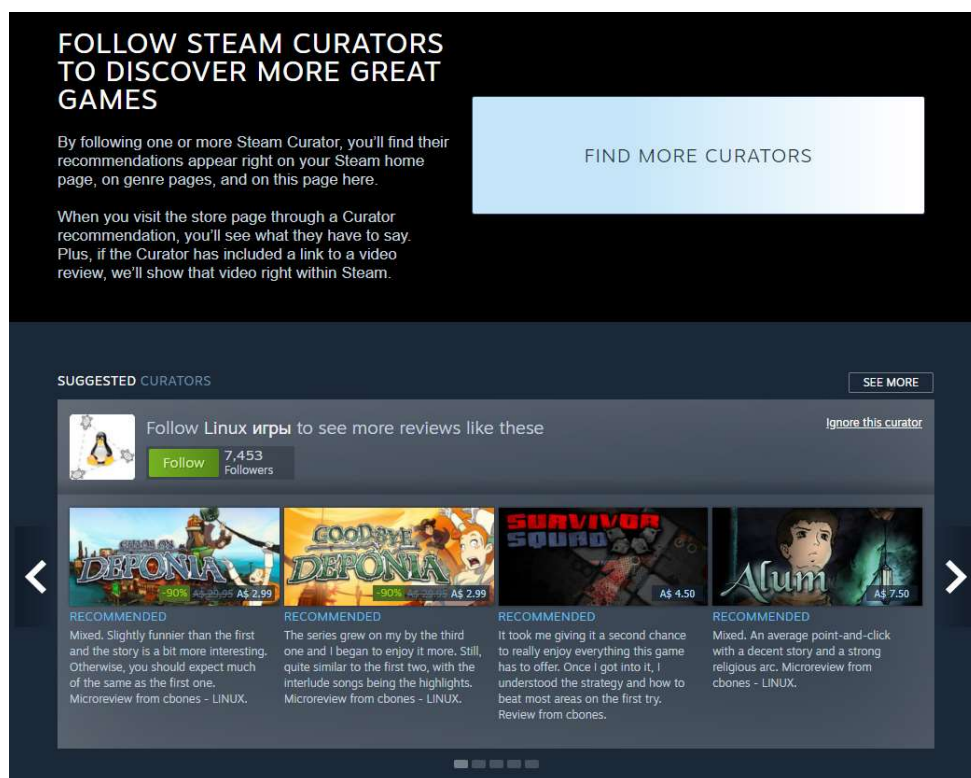


Figure 7: Curator System for the online video game library platform Steam. Users can visit a Curator's profile and read their reviews.

The second novel functionality, café pass, takes inspiration from the “battle pass” systems commonly seen within video games and game marketplaces. The idea behind this system is to reward loyal customers with discounted products and increase return business as well as persuade customers to purchase items within shorter timeframes so that they won’t miss out on a particular deal. The idea is for several “seasons” to take place within the year and during these seasons, items will receive one-time discounts and limited-edition items will sold only for the length of that season. Additionally, customers that have historically spent over a certain threshold will be given access to additional deals and products that are not available to regular customers. The hope is for these incentives to drive customer loyalty as a customer will be more willing to buy products from this website in order to reap savings in the future.

Inspiration 2: Battle pass



Figure 8: Battle pass system used in the online game Call of Duty: Warzone. As users progress through levels, users with the paid battle pass receive all items displayed at the bottom, however free users will only receive the free 100 CP item.

Software architecture diagram

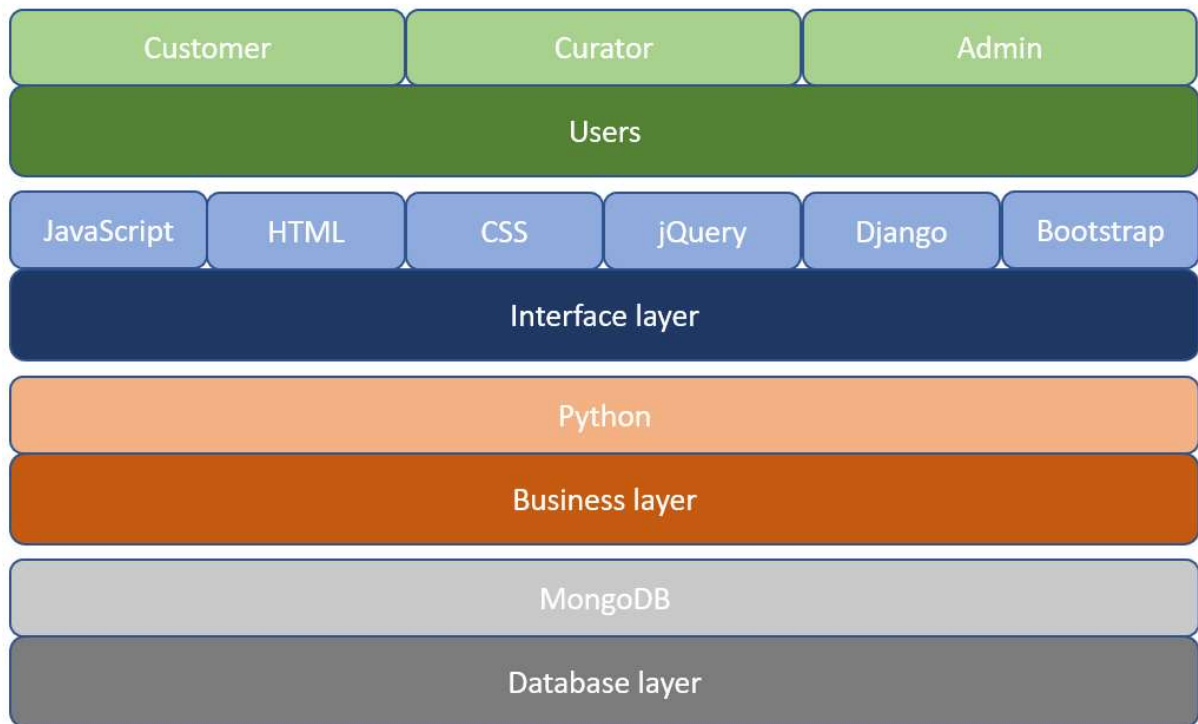


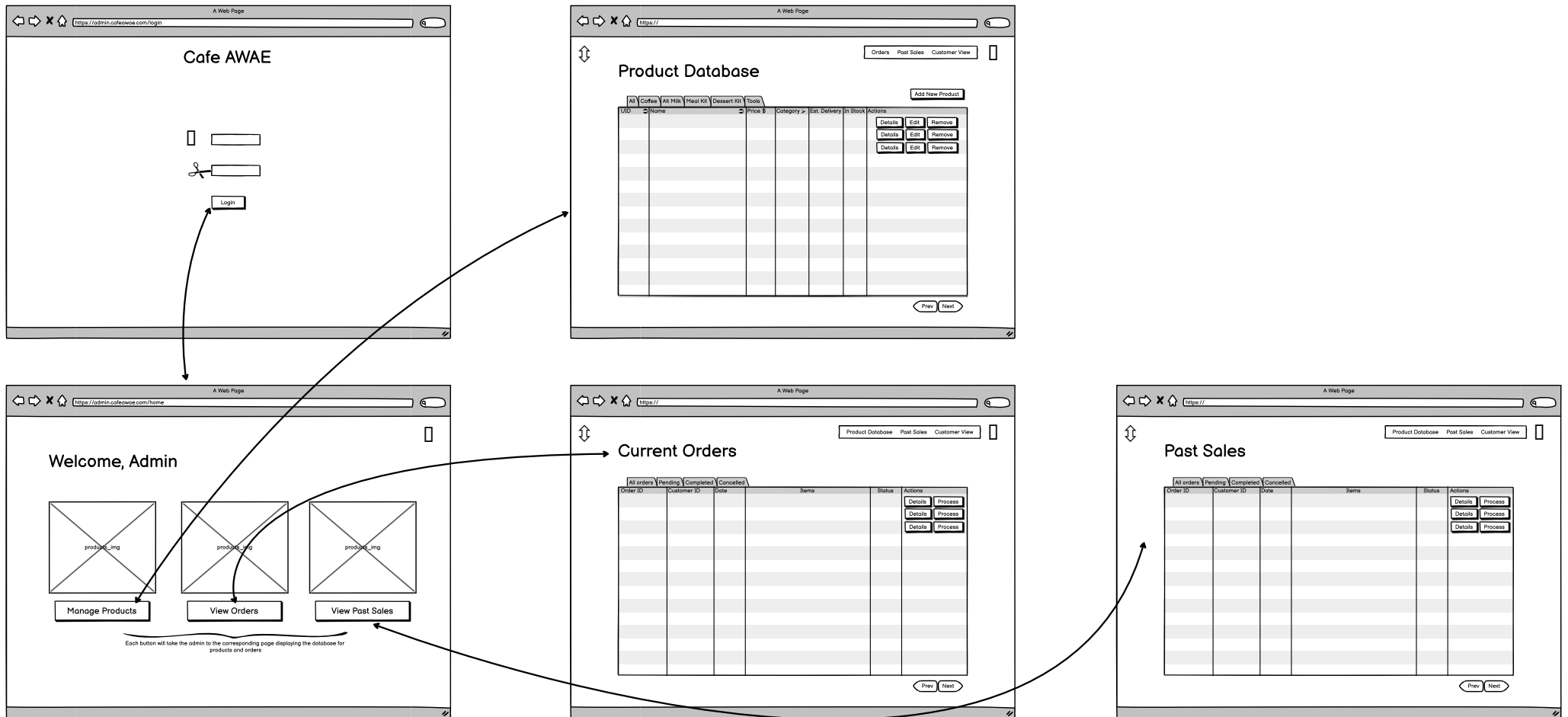
Figure 9: Software architecture diagram

Interface and flow diagrams

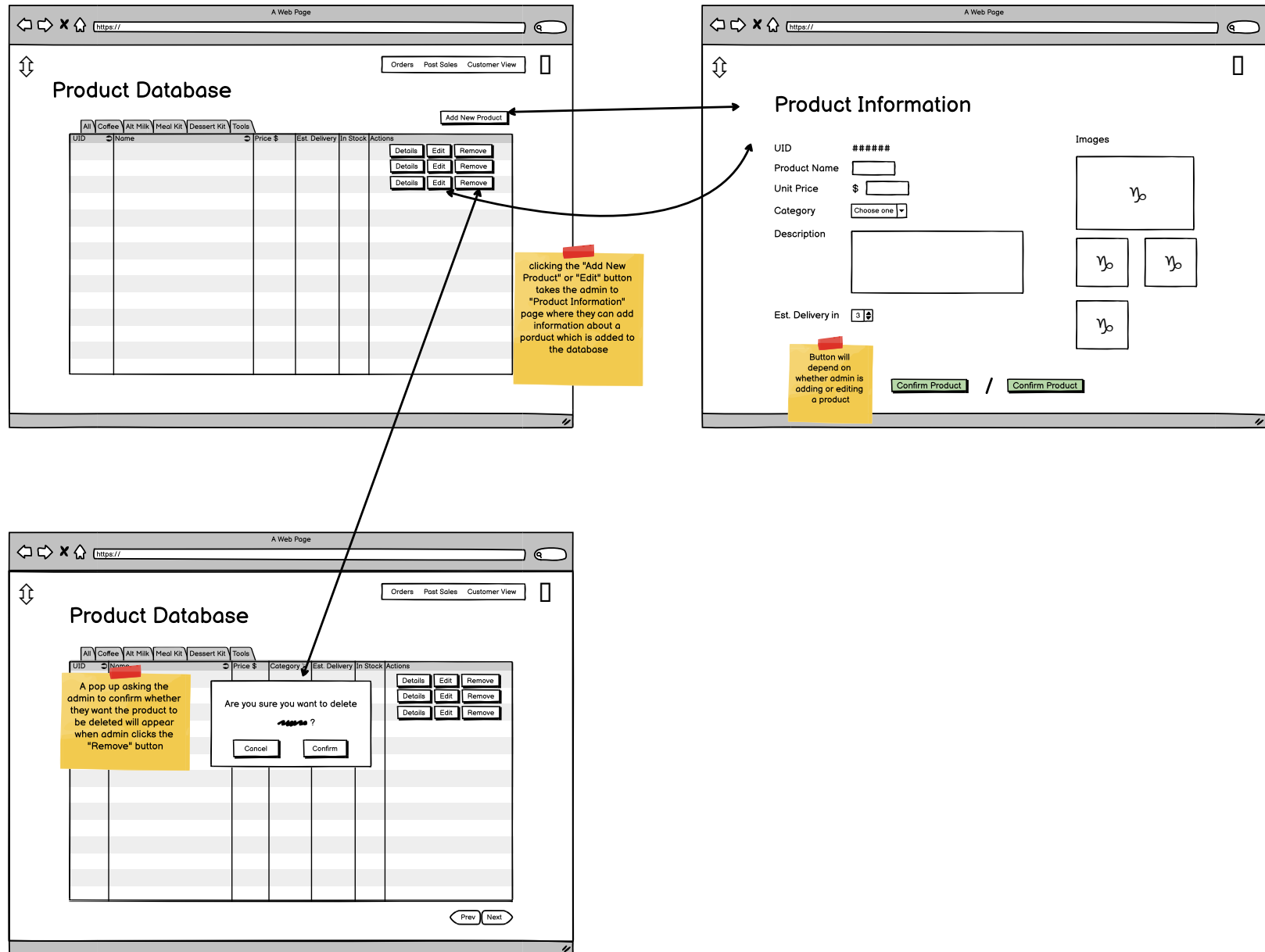
The table below shows provides a summary of the wireframes created for this project and which user stories they satisfy.

| Wireframe no. | Storyboard description | User Stories fulfilled |
|---------------|---|--------------------------------|
| 1 | Admin login and dashboard | CHA-22, CHA-23 |
| 2 | View products database and add, edit, or delete product from database | CHA-19 |
| 3 | User can browse, search for, and view details of products | CHA-27, CHA-28, CHA-61 |
| 4 | Curator profile and functionalities | CHA-62, CHA-63, CHA-64, CHA-65 |
| 5 | Café pass | CHA-39 |
| 6 | User sign in, registration and logout | CHA-24 |
| 7 | View and edit user's account information | CHA-25 |
| 8 | User's shopping cart and checkout | CHA-31, CHA-33. CHA-34 |
| 9 | View user's orders | CHA-33, CHA-37 |
| 10 | View and sort product reviews | CHA-60, CHA-112 |
| 11 | Add and edit their own product review | CHA-58, CHA-105 |
| 12 | Filter review by number of stars given | CHA-109 |
| 13 | User giving and editing a rating on a review | CHA-59 |

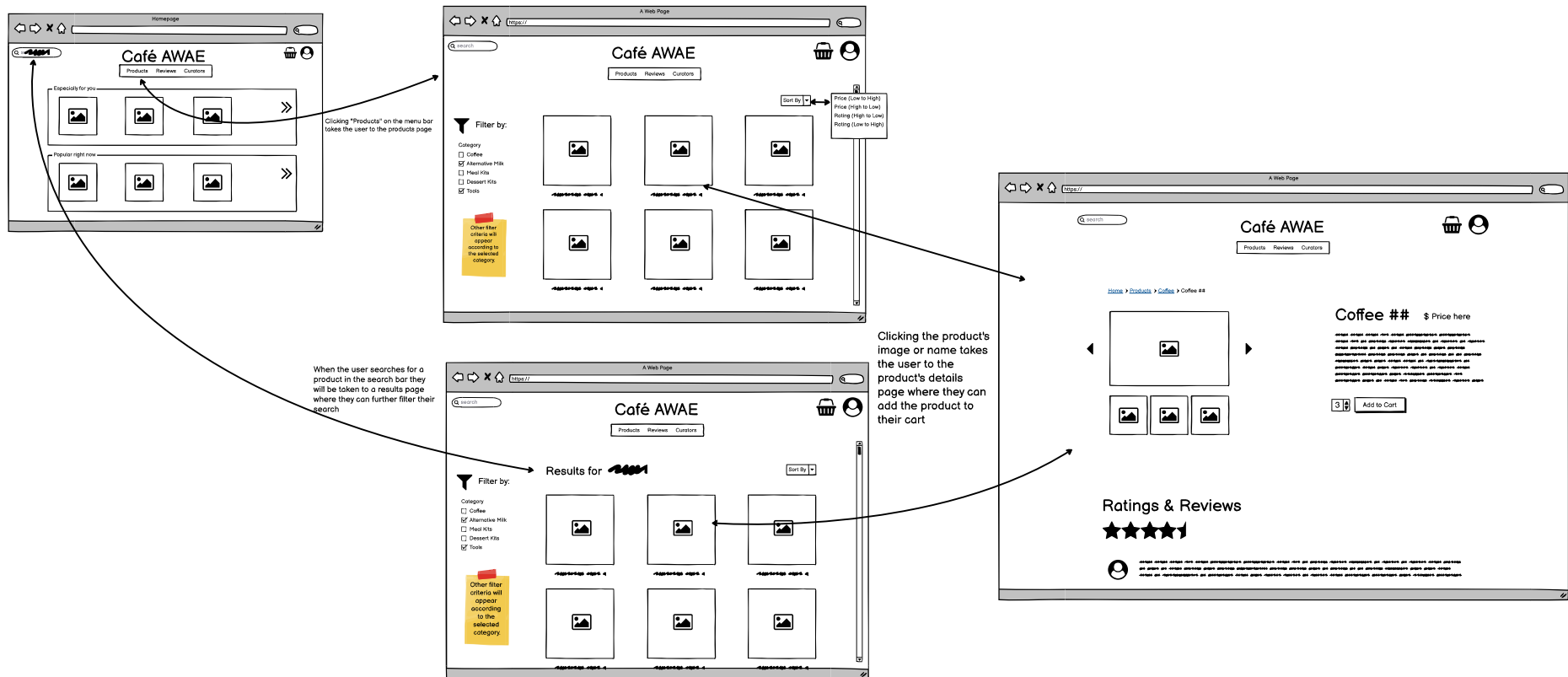
Wireframe 1



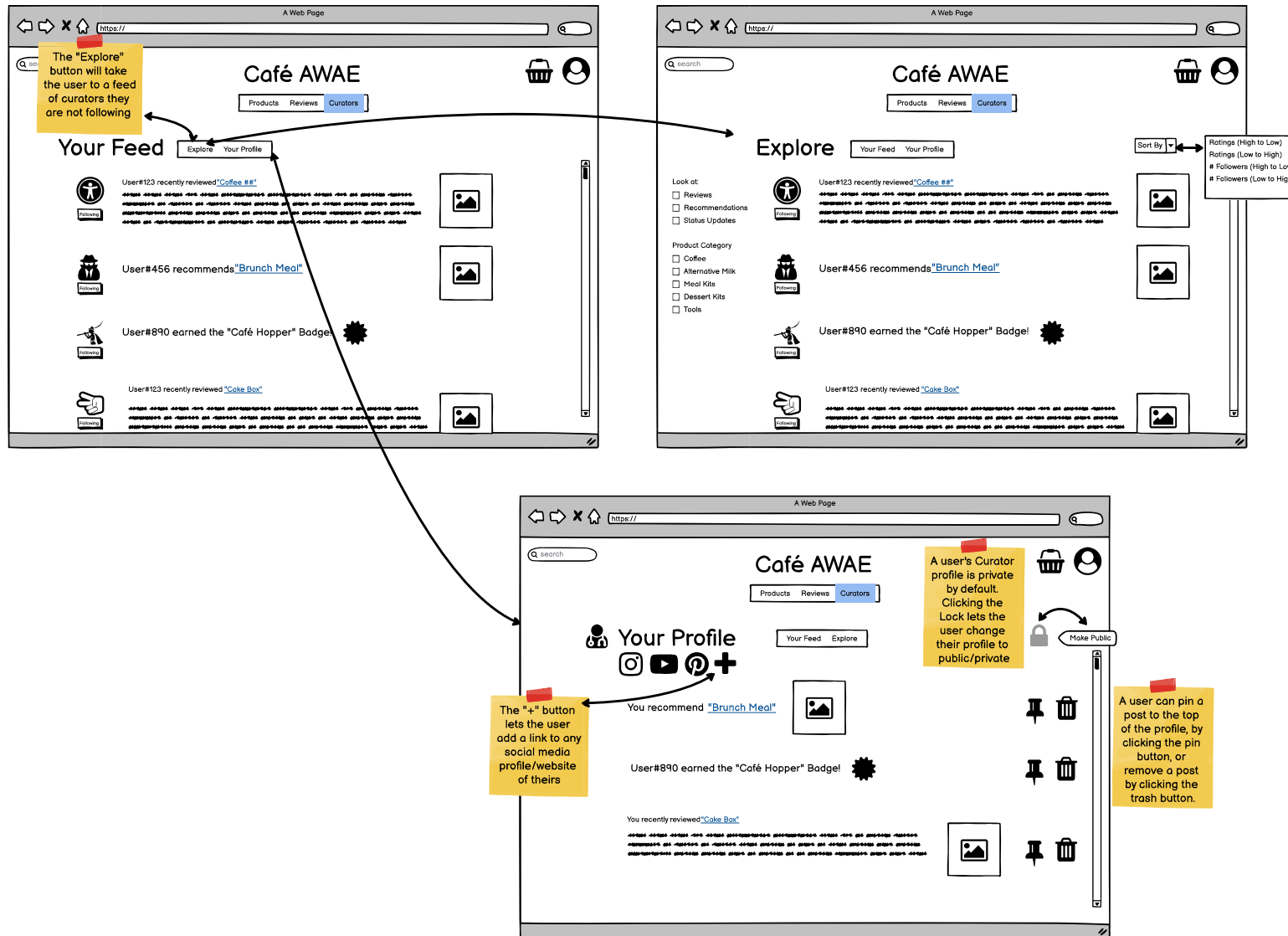
Wireframe 2



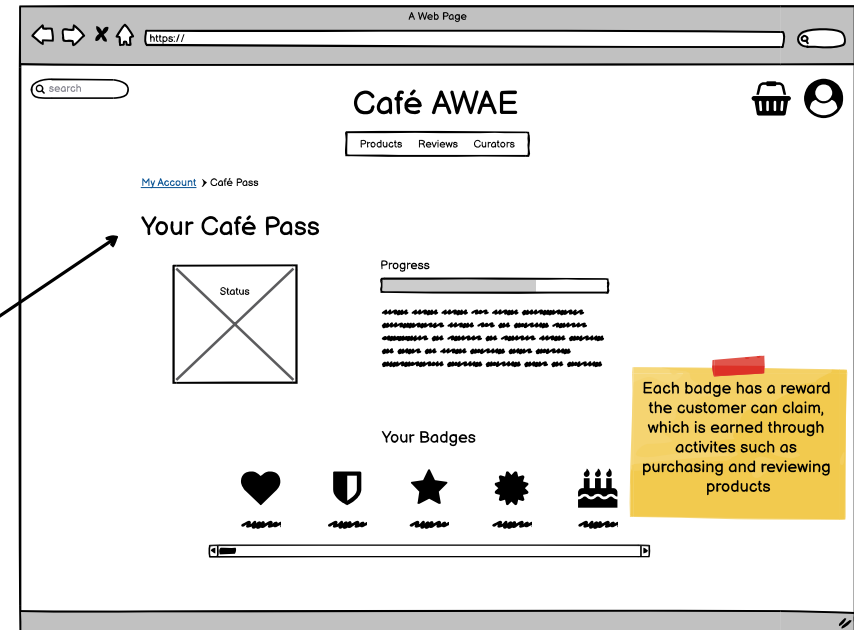
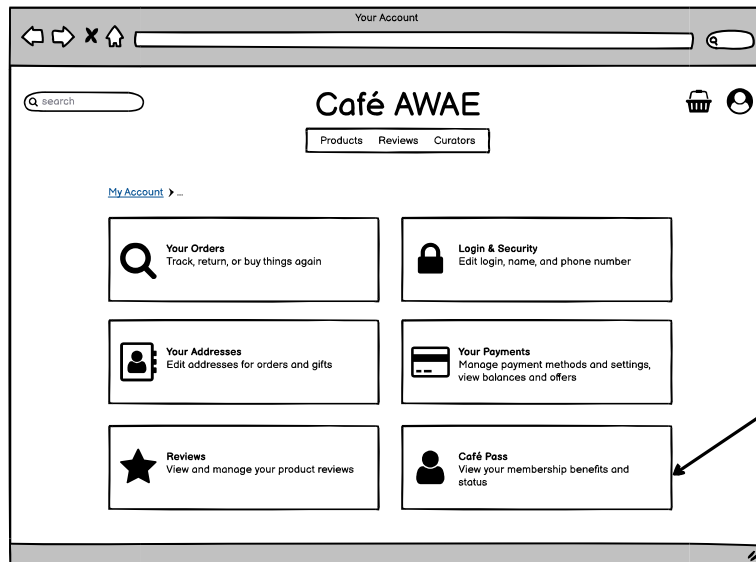
Wireframe 3



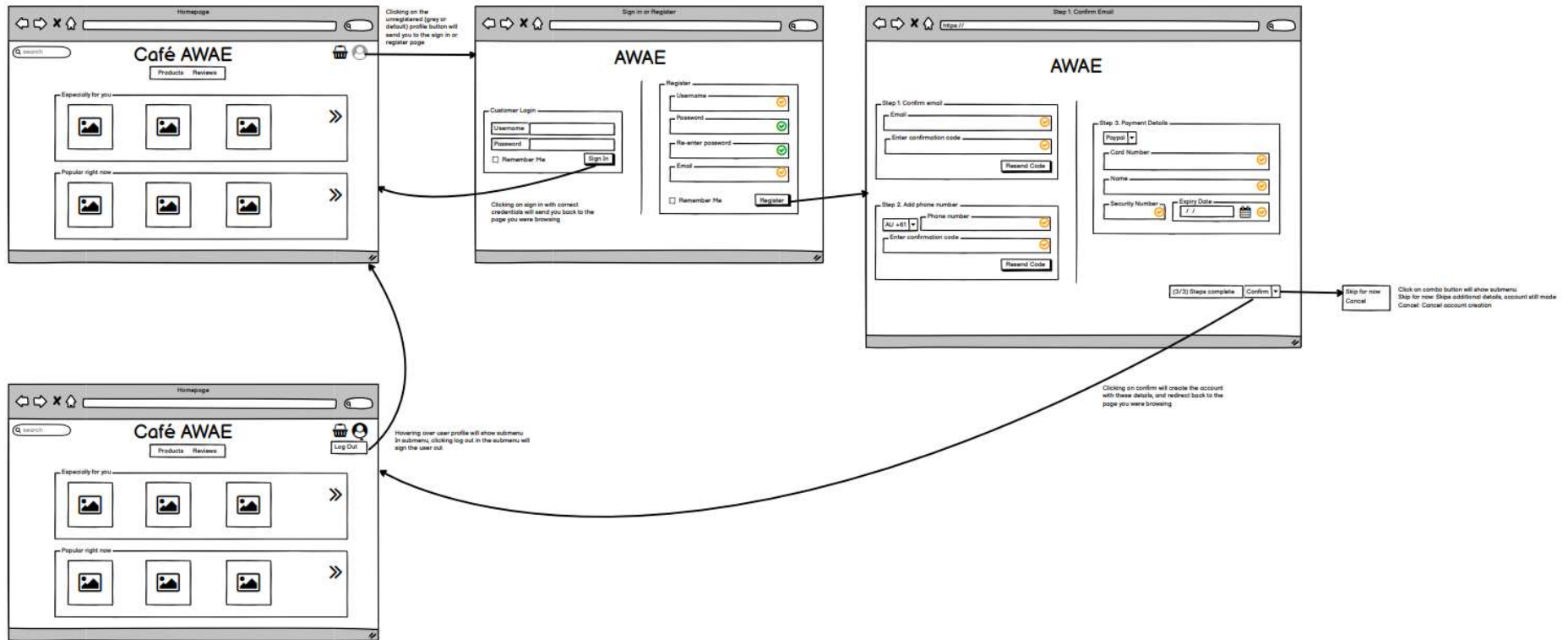
Wireframe 4



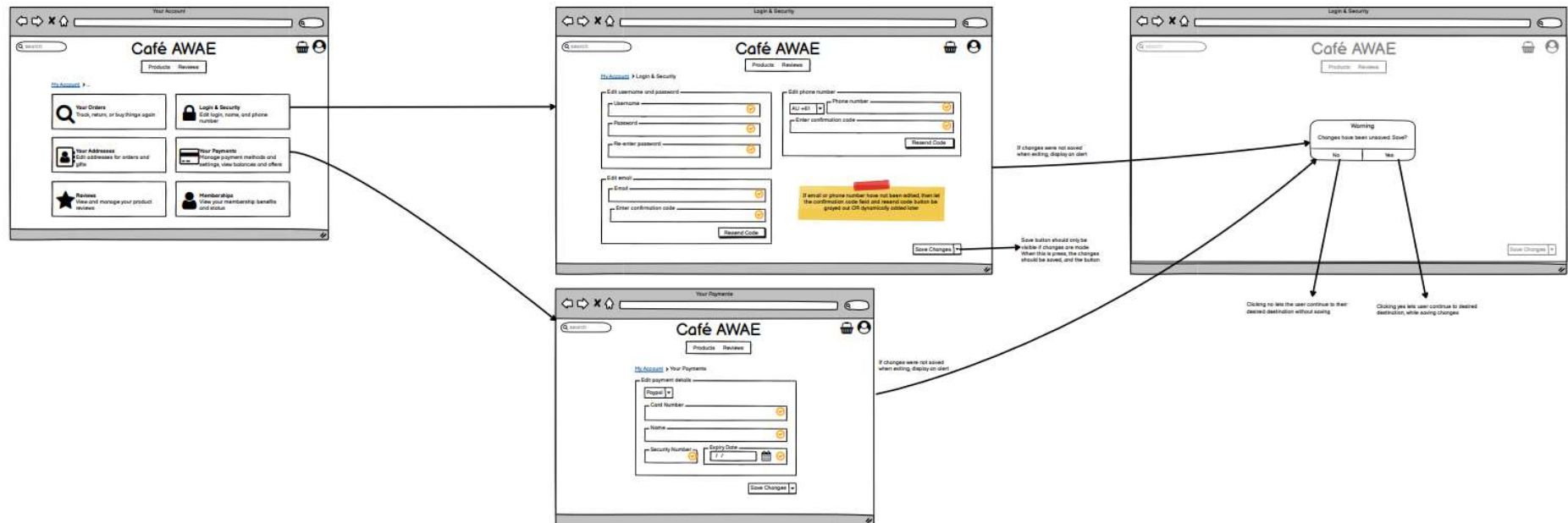
Wireframe 6 – Account sign in, registration and log out5



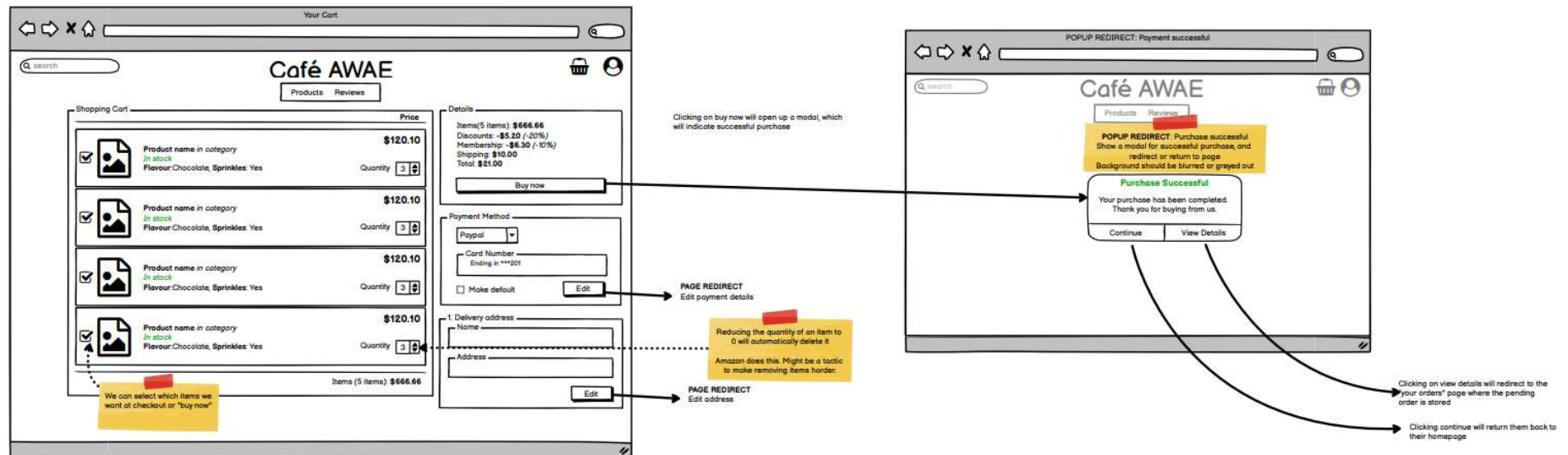
Wireframe 6



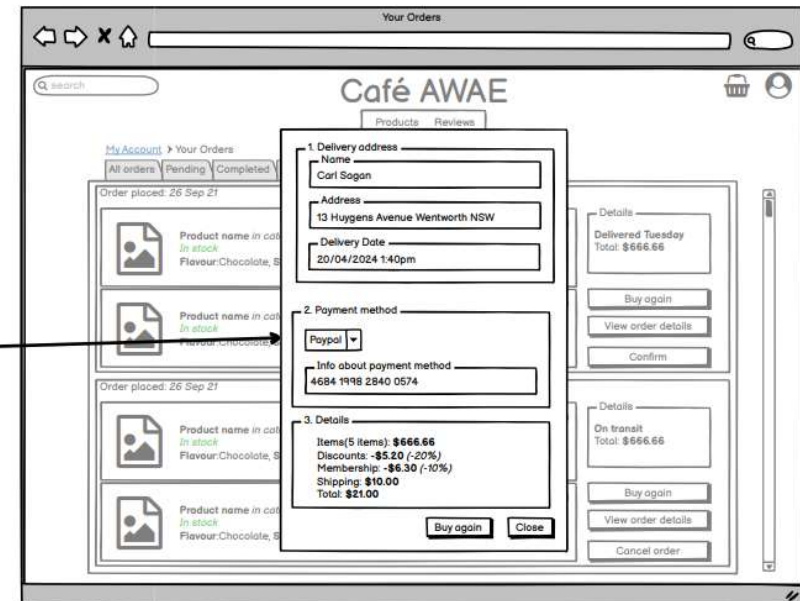
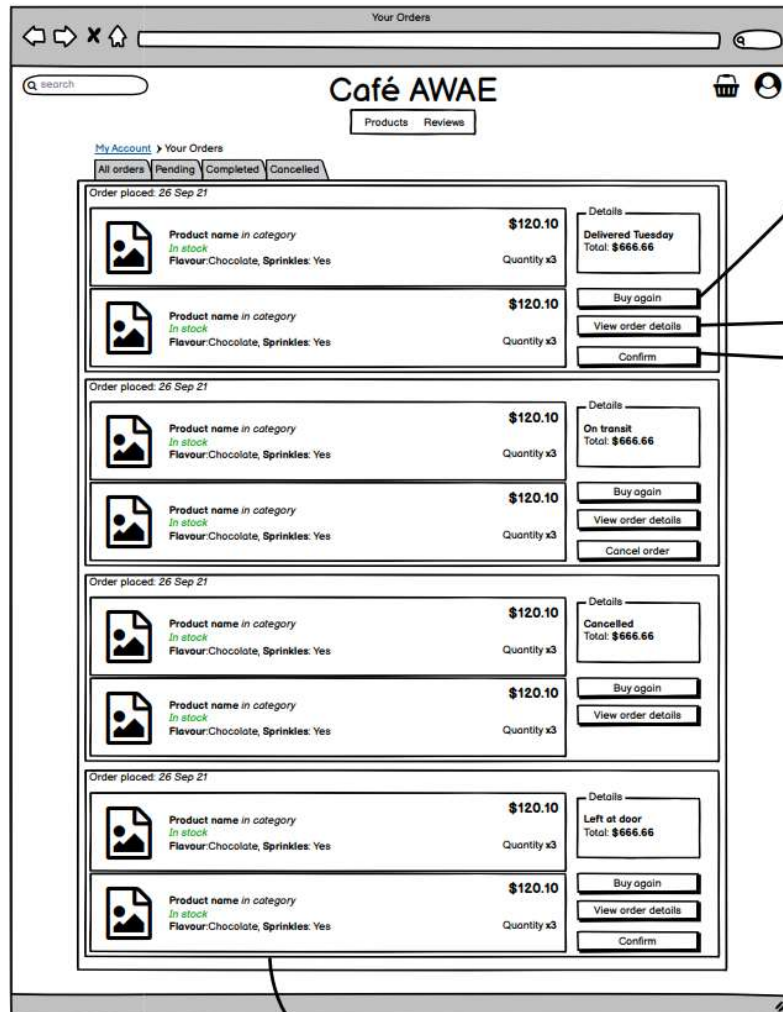
Wireframe 7 – Account information editing



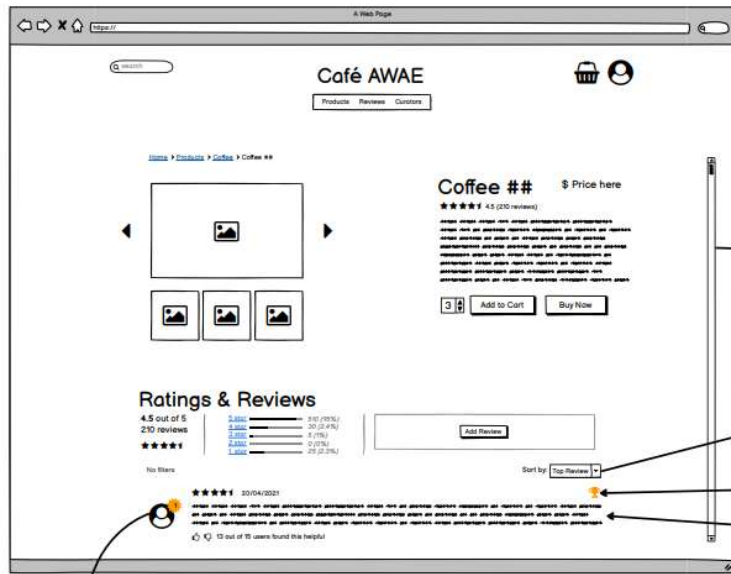
Wireframe 8 – Shopping cart and checkoutWireframe 8



Wireframe 9 – View orders for account



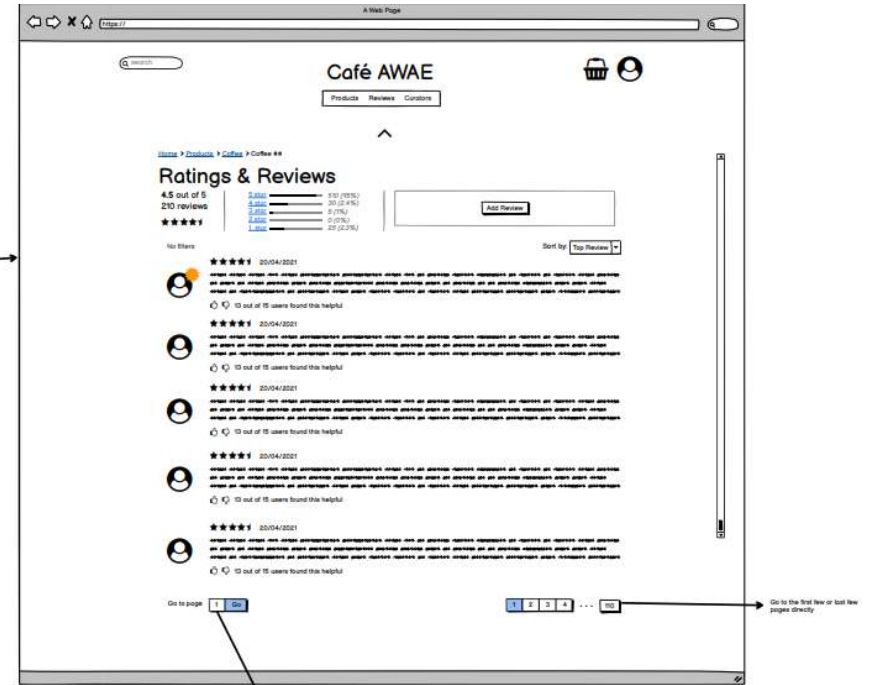
Wireframe 10 – View and sort product reviews



If the user is a customer, show a badge to indicate this, as well as text indicating their customer level.

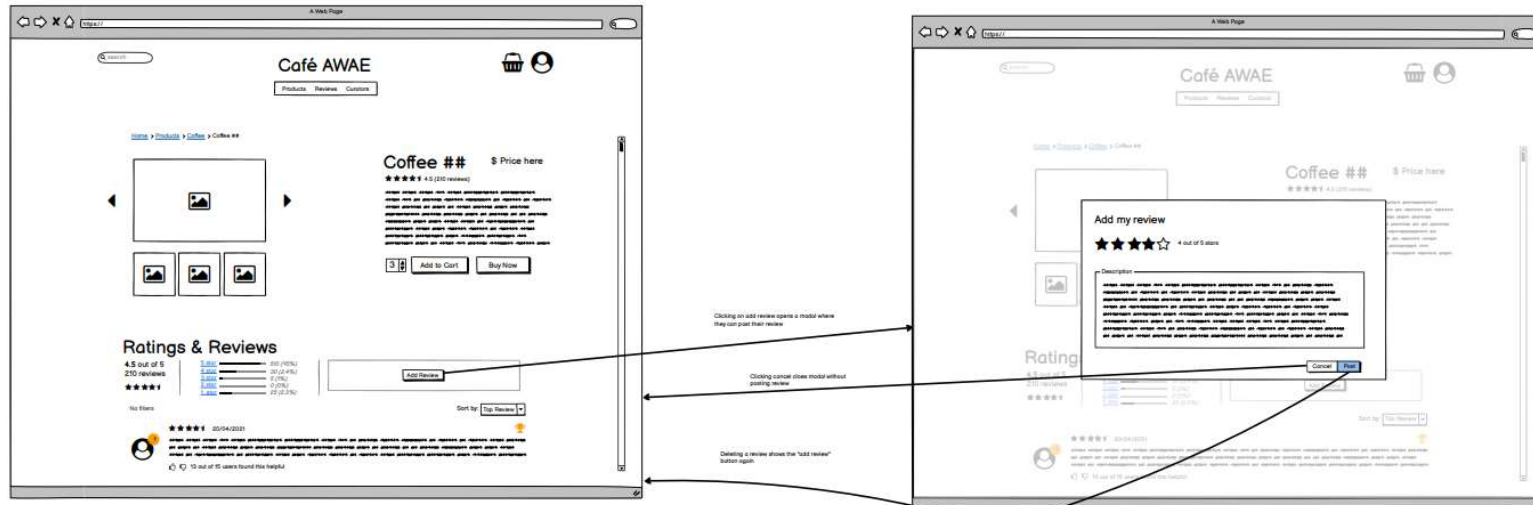
Clicking on their profile will open up their customer profile.

If the user isn't a customer, then this badge doesn't exist, and clicking on their profile does nothing.

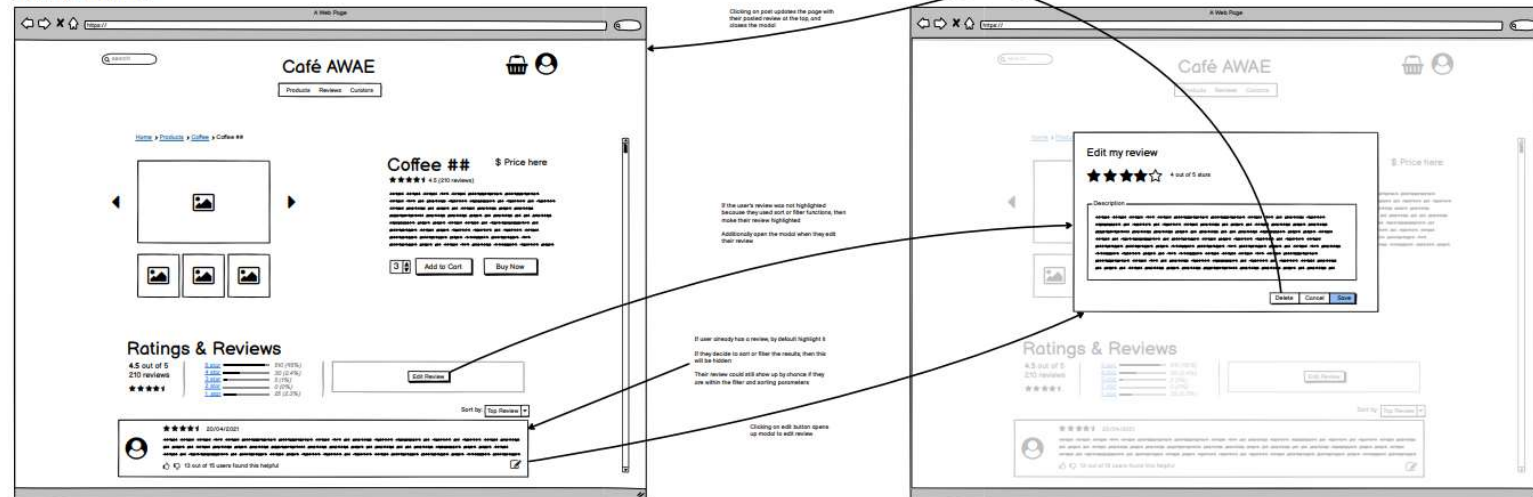


Wireframe 11 – Add and edit a review

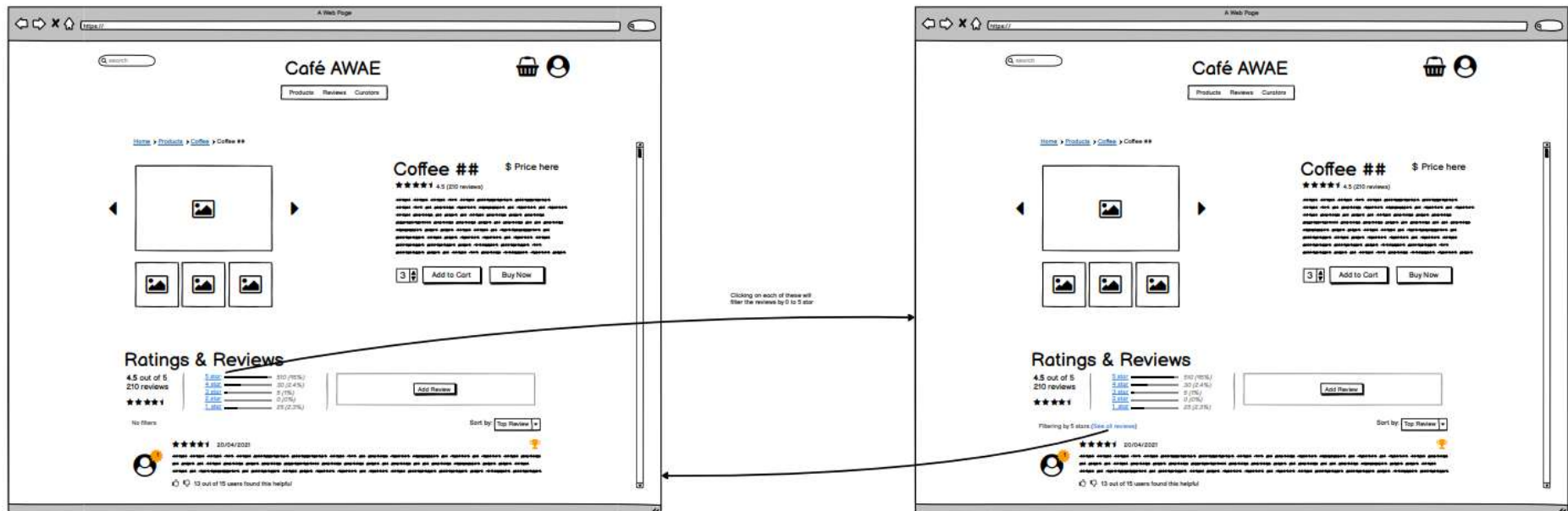
Adding a review



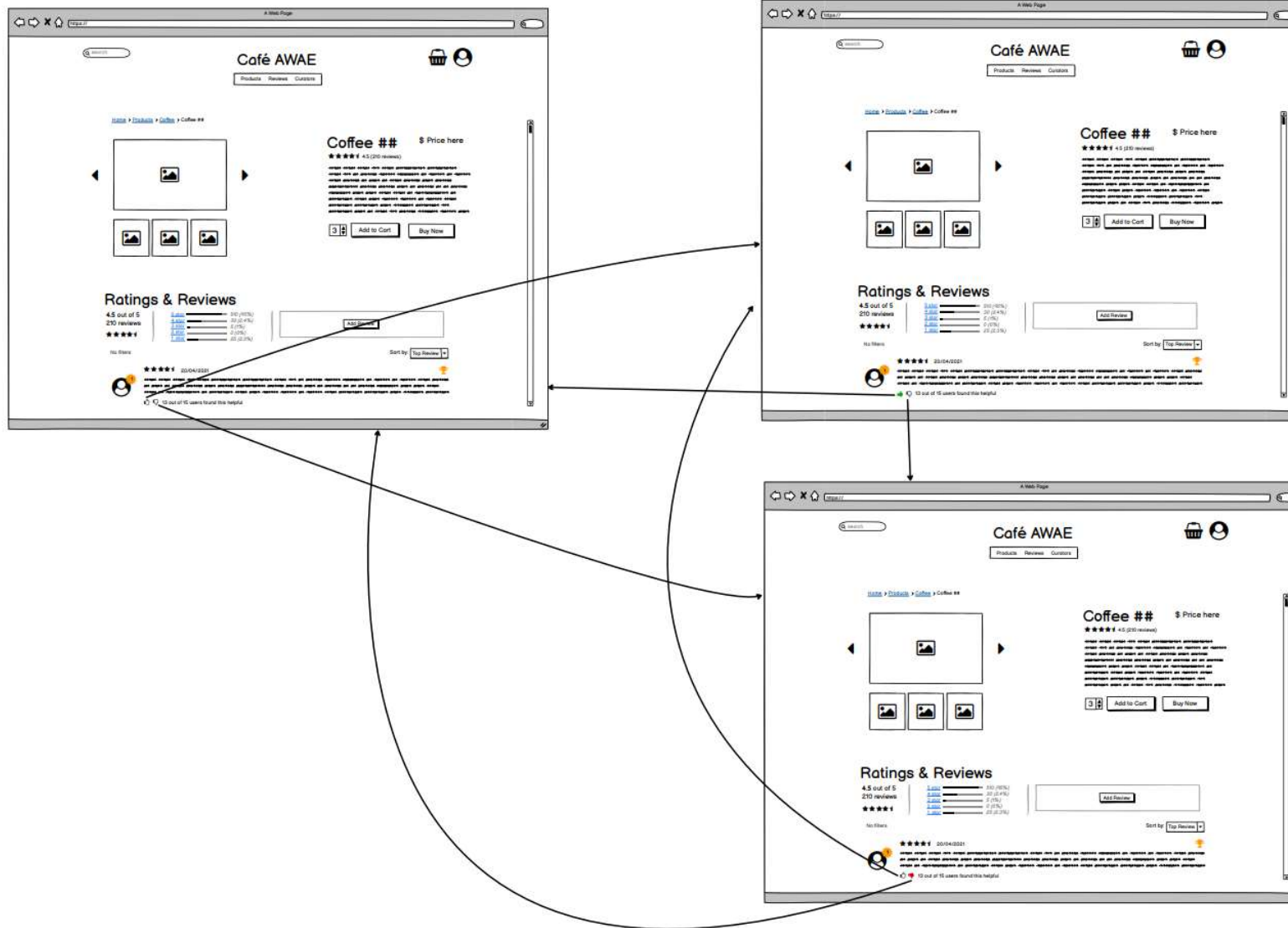
Editing a review



Wireframe 12 – Filter reviews by number of stars given



Wireframe 13 – Give and edit a rating on a review



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