

# **Final Project for SW Engineering**

**CSC 648-848-01 Summer 2023**

ArtisanAura Jewelry (Shopping Website)

Product URL: <https://artisan-aura-ifjhxbedya-uw.a.run.app/>

Team 05

Cassia Reddig, creddig@sfsu.edu (Team Lead)

James Donnelly (Github Master)

Daniel Moorhatch (Back End Lead)

Denean Le (Front End Lead)

Yitian Cai (Editor)

Tamer Senan

Milestone - Version	Date Submitted
M5V1	08/08/2023

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# Product Summary

**Name of Product:** ArtisanAura Jewelry (Shopping Website)

## **Committed P1 Functions:**

1. User
  - 1.1. General user: Does not need to login/register.
    - 1.1.1. (1) A general user shall be able to have unrestricted access to the website and view product details from many devices.
    - 1.1.2. (1) A general user shall be able to purchase many products by adding them into their shopping cart and completing the checkout process.
    - 1.1.3. (1) A general user shall choose at most one type of jewelry per product customized.
    - 1.1.4. (1) A general user shall have the option to register one and only one account by providing account registration details through the account creation form.
    - 1.1.5. (1) A general user shall be able to make changes to the items added to the shopping cart.
    - 1.1.6. (1) A general user shall be able to search for specific products by entering relevant keywords or product names into the search bar.
    - 1.1.7. (1) A general user shall be able to filter products by applying many filters to narrow the displayed products based on their preference.
    - 1.1.8. (1) A general user shall choose at most one design per product customized.
    - 1.1.9. (1) A general user shall choose at most one metal per product customized.
    - 1.1.10. (1) A general user shall choose at most one gem stone per product customized.

- 1.1.11. (1) A general user shall choose at most one size per product customized.
  - 1.1.12. (1) A general user shall choose at most one engraving per product customized.
  - 1.1.13. (1) A general user shall choose at most one packaging per product customized.
  - 1.1.14. (1) A general user shall choose to make a customized product or purchase a normal product.
- 1.2. Approved user: Needs to login/register.
    - 1.2.1. (1) An approved user shall be able to log into the system using their approved credentials that will verify user identity.
    - 1.2.2. (1) An approved user shall be able to log out from the system, which removes their current session from their account data.
2. Employee: Needs to login
    - 2.1. (1) An Employee shall be able to make changes to product details by modifying product descriptions, and price.
    - 2.2. (1) An Employee shall be able to create and post many new products into the system.
    - 2.3. (1) An Employee shall be able to remove many products from the system allowing data of the product to be removed.
3. Account:
    - 3.1. (1) An account shall be owned by one and only one user per email provided during creation of account.
4. Products
    - 4.1. (1) The system shall be able to display many products.
    - 4.2. (1) A product shall have a unique identifier to accurately track the product's information.

- 4.3. (1) A product shall have only one main image to be displayed on the catalog page.
  - 4.4. (1) A product shall have at least one price.
  - 4.5. (1) A product shall be able to be added to one and only one cart.
  - 4.6. (1) A product shall be reviewed many times.
5. Shopping cart
    - 5.1. (1) A cart shall be associated with at most one general user.
    - 5.2. (1) A cart shall be able to contain many products.
    - 5.3. (1) A cart shall calculate the sum of at most one price per product placed in the cart.
  6. Review/Rating
    - 6.1. (1) A review shall have one title.
    - 6.2. (1) A review shall have at most one description.
    - 6.3. (1) A review shall be associated with at most one product.
    - 6.4. (1) A review shall be associated with at most one approved user.
    - 6.5. (1) A review shall have at most one rating.

## **Product Summary:**

At ArtisanAura Jewelry, you're not just buying jewelry, you're buying handmade pieces from talented artisans. We at ArtisanAura Jewelry are firm believers that each and every piece of jewelry should be unique to their owner. That's why our online shopping experience offers a wide range of handmade jewelry, ranging from rings, bracelets and necklaces so you're sure to find the right piece that suits your individual style!

What sets us apart from other jewelry stores is our handcrafted jewelry made unique and with care, compared to mass produced jewelry suppliers. Our customization of jewelry that is done all through our online website also allows us to stand out from our competitors. Unlike the traditional jewelry stores where you may be able to customize your name or small engravings on pieces, we offer a wide range of customization ranging from different styles, gemstones and length. We also allow users to browse and customize pieces through our website freely without having to register an account with

us. For users who decide to create an account, special perks are made available such as being able to save and edit designs they have already created, making their shopping experience extremely convenient!

Users can start their shopping experience with us by browsing through our catalog of jewelry or starting fresh by customizing their own piece from scratch! After choosing their unique customized preferences, users are now able to add their design to their cart and proceed to checkout. Our user-friendly experience will ensure that your online jewelry shopping is a smooth and enjoyable process throughout each step. You will be able to track your order and view each update until it reaches your doorstep through your order number provided to you, so you don't have to worry about where or when you'll receive your jewelry. Once you receive your order, feel free to share your experience by leaving a review and rating through our website.

Discover the joy of owning a unique, handcrafted piece of jewelry that shows off your own personal style and craftsmanship of our expert artisans.

**Product URL:** <https://artisan-aura-ifjhxbedya-uw.a.run.app/>

## Milestone Documents – M1-M4

# **SW Engineering CSC648-848-01**

## **Summer 2023**

**Project Title:** Jewelry Shopping Site: ArtisanAura

**Team 05**

Cassia Reddig, creddig@sfsu.edu (Team Lead)

Daniel Moorhatch (Github Master)

Denean Le (Back End Lead)

Tamer Senan (Front End Lead)

James Donnelly (Editor)

Yitian Cai

Milestone - Version	Date Submitted
Milestone 1 Version 2	07/11/2023
Milestone 1 Version 1	06/22/2023

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# **Executive Summary**

ArtisanAura is a leading online jewelry shopping platform that combines innovation, personalization, and sustainability. Our platform connects customers with high-quality, unique artisan and locally crafted pieces, supporting our local artisans. With a specialization in necklaces, bracelets, rings, and engagement rings, we showcase handmade and locally made jewelry that stands out in the market.

To provide a personalized experience, we offer a charm and engraving feature that allows customers to customize their jewelry, along with an AI-driven quiz that suggests curated pieces based on individual style preferences. Our commitment to meaningful shopping goes beyond aesthetics, as we provide in-depth content on the symbolic and cultural meanings behind our pieces.

Transparency is at the core of our business. We prioritize ethical sourcing and sustainability, providing information about our supply chains to ensure conscious choices. Our thriving community of users forms the heart of our platform, and we prominently showcase customer reviews to guide new customers and receive valuable feedback.

The ArtisanAura homepage serves as a visual storytelling medium, featuring captivating clips of the jewelry crafting process and articles that align with our brand's ethos. We also cater to gift-giving customers with a dedicated section, offering product recommendations, personalized messages, and gift-wrapping options. Additionally, we streamline the browsing process for customers seeking specific styles through our filtered section.

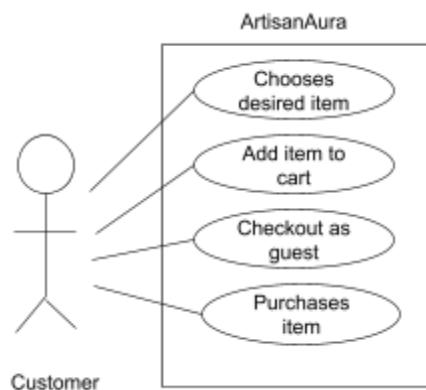
ArtisanAura merges technology, craftsmanship, and sustainable luxury to create a revolutionary online shopping platform. By investing in ArtisanAura, you support a promising business venture and contribute to our vision for a more ethical, sustainable, and customer-oriented future in the online jewelry retail industry. Join us in revolutionizing the way customers discover and connect with unique, meaningful jewelry.

# Use Cases

## Use Case: Purchasing as guest

### Actors: Customer (Tiffany)

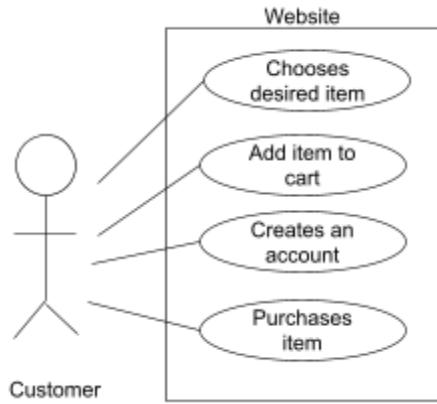
Description: Tiffany is a mother looking for a bracelet for her daughter's 16th birthday. While browsing through our ArtisanAura, she finds a bracelet that makes her very excited as the process was simple. It is something that suits her daughter perfectly and decides to purchase it. She adds the bracelet to her online shopping cart, where she is given the option to check out the item as a guest or sign into an account. She does not have an account and does not wish to create one, so she proceeds to checkout as a guest. She inputs her payment method and purchases the bracelet.



## Use Case: Purchasing as account user

### Actors: Customer (Emma)

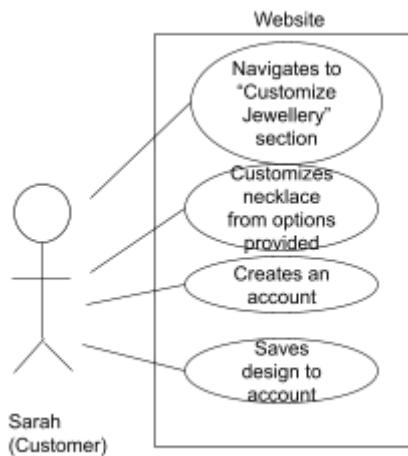
Description: Emma, a jewelry enthusiast, decides to purchase a necklace for an upcoming anniversary celebration. As she explores the diverse range of jewelry on the website, a gold and gemstone necklace catches her eye, perfectly embodying her unique taste. Without a moment's hesitation, she adds the necklace to her online shopping cart and navigates to checkout. As a first-time customer, she is presented with the option to either proceed as a guest or log into an account. Feeling invested and seeing potential for future purchases, she opts to create an account. Following the seamless process to set up her new account, Emma proceeds with her purchase, successfully securing the necklace for her special occasion.



## Use Case: Customizing a necklace on our website

**Actors: Customer(Sarah)**

Description: Sarah is a college student who enjoys shopping for jewelry online. While browsing through multiple online shops, she finds our website and decides to customize a necklace. Sarah navigates to the “Customize Jewelry” section and selects a necklace template to begin customizing. She picks from an array of different charms and builds her necklace. She then wants to save her design and is prompted to register for an account to save it. Sarah creates an account and saves her design.

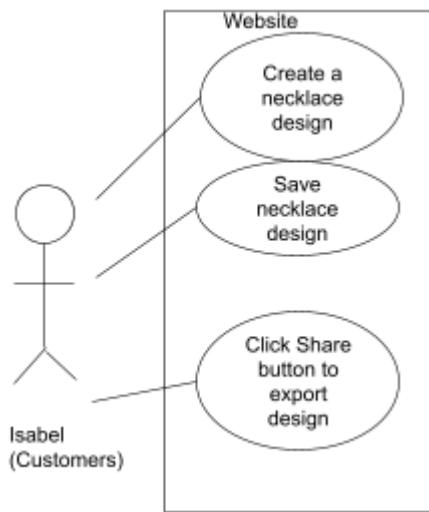


## Use Case: Saving & Sharing Designs

**Actor: Customer (Isabel)**

Description: Isabel wants to create a necklace. After she creates the necklace she decides she wants to save the design to come back to later because she is not sure if she wants it or not. She ends up creating an account to save her design. She ends up

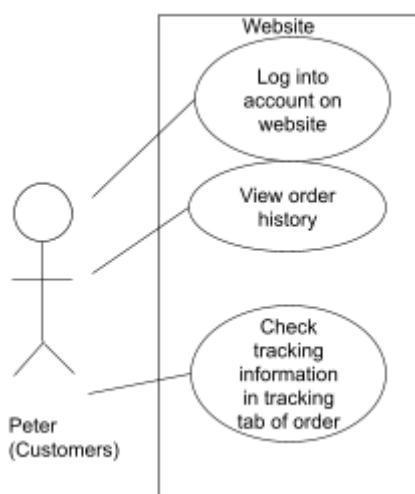
coming back but still isn't sure if she wants it or not so she decides to share it with some of her friends to ask for their opinion.



### Use Case: Checking status of an order

#### Actors: Customer(Peter)

Description: Peter recently placed an order for a necklace on the online website. He wanted to check the status of the order and see when it might be delivered. He logs into his account on the website and navigates to the “Orders” tab where he is able to view past orders and current. Peter selects his order and views the tracking information that confirms delivery tomorrow morning.

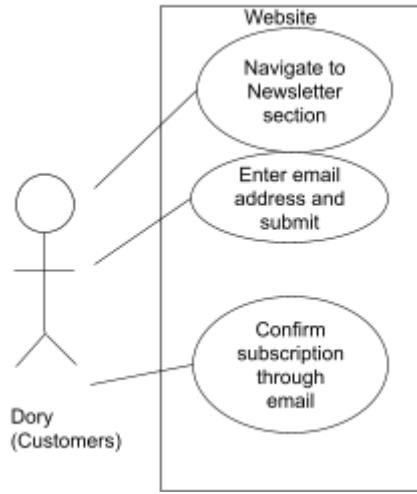


### Use Case: Joining mail subscription newsletter

#### Actor: Customer(Dory)

Description: Dory is checking out jewelry that is local to her and finds our website. She wants to stay updated on new products and promotions that may come in the future.

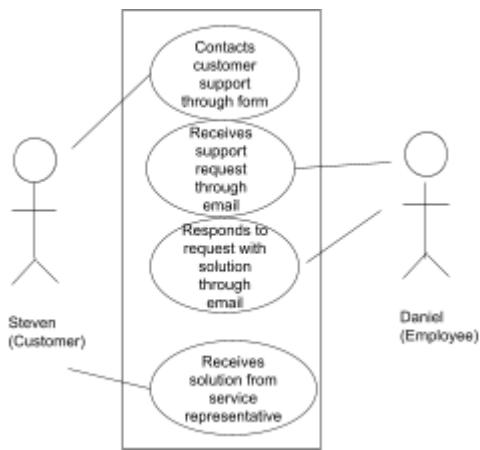
She decides to subscribe to the newsletter by navigating to the newsletter section and inputting her email. After she receives and accepts the confirmation email she receives a “Welcome code” discount for her next purchase.



### **Use Case: Contacting Customer Support**

**Actors:Customer(Steven), Employee(Daniel)**

Description: Steven is browsing through our website when he notices a particular necklace that he likes is out of stock. Steven wants to know when there might be a restock on the necklace and navigates to the “Contact” page where he is prompted to enter his email and a brief message describing his inquiry. After Steven sends his contact form out, he receives a reply from an employee named Daniel about 4 hours later informing Steven that there will be no restock on this item.

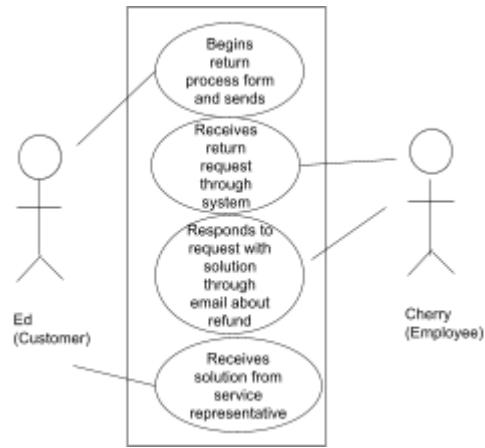


### **Use Case: Request Refund, After-Sales Service**

**Actor: Customer (Ed), Employee (Cherry)**

Description: Ed purchases a necklace from our website but realizes that they are not entirely satisfied with the product and it has some minor defects. Ed logs into their

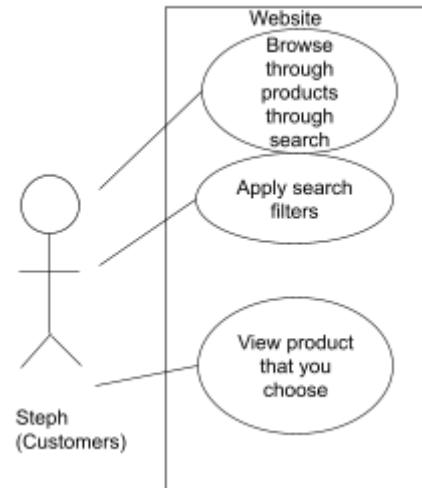
account and navigates to the "return policy" section in the order history. They then contact our customer service representative to inquire about the return process and request a refund.



### Use Case: Searching for products

#### Actor: Customer(Steph)

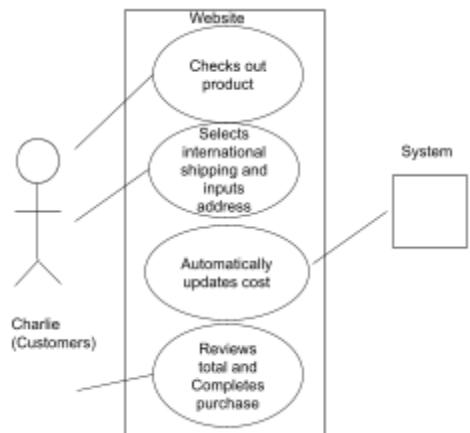
Description: Steph is a customer who has registered for an account on our website already. He is looking to find a gift for his partner from our shop. He visits the homepage and finds an assortment of items to pick from. Steph then filters the search results to “necklaces” and “lowest price” where he finds the perfect gift and purchases it.



## Use Case: International shipping

### Actor: Customer (Charlie)

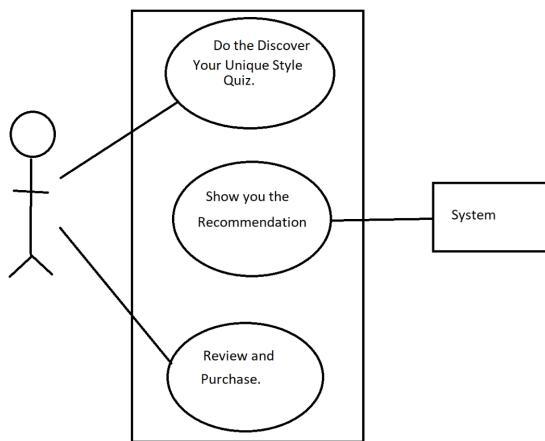
Description: Charlie wants to purchase an expensive necklace from our website and lives in another country. When checking out, Charlie selects the international shipping option which prompts him to input his address. The website then automatically updates shipping fees and taxes for Charlie and he is able to complete his order.



## Jewelry Recommendation for Special Occasions

### Actor: Customer (Alexa)

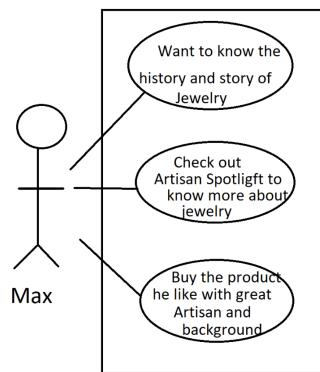
Description: Alexa is looking for a piece of jewelry to celebrate her anniversary. She visits ArtisanAura and discovers a specialized feature, AI driven quiz, that provides jewelry recommendations for unique occasions. With this information the platform generates a curated selection of jewelry pieces that symbolize love, commitment, and milestone celebrations, helping Alexa find the perfect anniversary gift.



## Artisan Spotlight

### Actor: Customer (Max)

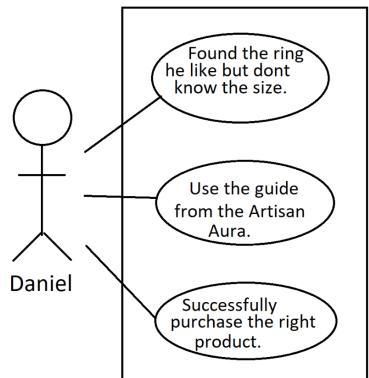
Max is a jewelry enthusiast who appreciates the history and motivation behind unique pieces. When Max visits ArtisanAura, he finds the Artisan Spotlight feature of the website, which showcases individual artisans and their inspiration behind pieces. With this Max gains a deeper appreciation for the artisans' work given their inspiration shown. The Artisan Spotlight feature not only adds value and meaning to the jewelry but also gives recognition to the artists behind the pieces. Through this use case, customers like Max can explore the Artisan Spotlight section, connecting with the artistry and stories that shape the jewelry they admire and supporting the talented artisans who create them.



## Jewelry Sizing Guide

### Actor: Customer (Daniel)

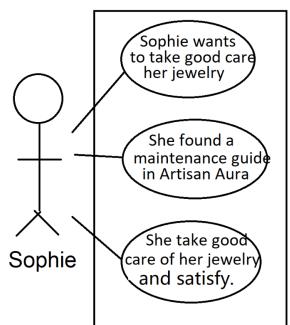
Description: Daniel is interested in purchasing a ring for his partner but is unsure about the appropriate size. ArtisanAura offers a Jewelry Sizing Guide that helps customers determine their accurate ring size. Daniel accesses the guide, which provides step-by-step instructions and printable ring sizers. By following the guide's recommendations, Daniel can confidently select the correct ring size, ensuring a perfect fit for his partner.



## Jewelry Care and Maintenance Guides

### Actor: Customer (Sophie)

Description: Sophie wants to ensure that her jewelry pieces remain in pristine condition. ArtisanAura provides comprehensive Jewelry Care and Maintenance Guides on their website. Sophie accesses the guide, where she finds detailed instructions on how to clean, store, and maintain different types of jewelry. This information empowers Sophie to take proper care of her precious pieces, extending their longevity and preserving their beauty.



## **Data items / Entities**

1. General User
2. Approved user
3. Employee
4. Account
5. Product
6. Cart
7. Order
8. Payment
9. Shipping Information
10. Billing Information
11. Review/rating

# **Functional Requirements**

1. User
  - 1.1. General user: Does not need to login/register.
    - 1.1.1. A User shall be able to access the website and view product details.
    - 1.1.2. A User shall be able to purchase products.
    - 1.1.3. A User shall be able to make customizations.
    - 1.1.4. A User shall be able to register an account.
    - 1.1.5. A User shall be able to add items into their shopping cart.
    - 1.1.6. A user shall be able to track the status of their orders.
    - 1.1.7. A user shall be able to search for a product.
    - 1.1.8. A user shall be able to filter products.
    - 1.1.9. A user shall have a tracking id.
  - 1.2. Approved user: Needs to login/register.
    - 1.2.1. An approved user shall be able to save customizations.
    - 1.2.2. An approved user shall be able to edit customizations.
    - 1.2.3. An approved user shall be able to view current/past orders.
    - 1.2.4. An approved user shall be able to delete the account.
    - 1.2.5. An approved user shall be able to provide feedback for products.
    - 1.2.6. An approved user shall be able to manage shipping address(es).
    - 1.2.7. An approved user shall be able to manage their payment methods.
    - 1.2.8. An approved user shall be able to log in.
    - 1.2.9. An approved user shall be able to log out.
2. Employee: Needs to login
  - 2.1. An Employee shall be able to make changes to product details.
  - 2.2. An Employee shall be able to post new products.

- 2.3. An Employee shall be able to remove products.
  - 2.4. An Employee shall have access to store transactions that include user information and order details.
  - 2.5. An Employee shall be able to manage product inventory.
  - 2.6. An Employee shall be able to track sales.
3. Account:
- 3.1. An account shall be owned by one and only one user.
4. Products
- 4.1. Shall be able to display many products.
  - 4.2. A product shall have one or multiple images associated with it.
  - 4.3. A product shall have a quantity selection..
  - 4.4. A product shall have a unique identifier.
  - 4.5. A product shall have only one main image.
  - 4.6. A product shall have one description.
  - 4.7. A product shall have at least one price.
  - 4.8. A product shall have stock availability.
  - 4.9. A product shall have one or multiple images associated with it.
  - 4.10. A product shall be ordered by many users.
  - 4.11. A product shall be able to be added to multiple carts.
  - 4.12. A product shall be ordered many times.
  - 4.13. A product shall be reviewed many times.
  - 4.14. A product shall be able to be compared with at most one product.
5. Shopping cart
- 5.1. A cart shall be associated with a user.
  - 5.2. A cart shall contain multiple products with quantities.
  - 5.3. A cart shall calculate the total price of all products.
  - 5.4. A cart shall be able to be saved for later by an approved user.
  - 5.5. A cart shall contain many products.

5.6. A cart shall be able to be converted into an order.

6. Order:

6.1. An order shall be associated with at most one approved user.

6.2. An order shall have a unique order number.

6.3. An order shall contain multiple products with quantities.

6.4. An order shall have a total price.

6.5. An order shall have an order status.

6.6. An order shall include shipping information.

6.7. An order shall include billing information

6.8. An order shall have only one billing address.

6.9. An order shall have only one shipping address.

6.10. An order shall be able to be returned.

6.11. An order shall be able to be canceled.

6.12. An order shall have a payment status.

6.13. An order shall include shipment tracking details.

6.14. An order shall be placed many times.

7. Review/Rating

7.1. A review shall have one title

7.2. A review shall have one description/review.

7.3. A review shall be associated with only one product.

7.4. A review shall be associated with one and only one approved user.

7.5. A review shall have a rating.

8. Payment:

8.1. A payment shall be associated with an order.

8.2. A payment shall be associated with multiple orders.

8.3. A payment shall have one total amount.

8.4. A payment shall have a unique id.

- 8.5. A payment shall have a payment method.
- 8.6. An approved user shall have at most one default payment method.
- 8.7. A payment method shall be associated with one or many approved users.

# **Non-Functional Requirements**

1. Users
  - 1.1. General Users shall be required to input order number and email to access order details.
  - 1.2. Approved Users shall be required to log in to access account details.
2. Product
  - 2.1. Each product shall have a corresponding image that transitions with user input..
3. Systems
  - 3.1. The system shall have real-time inventory updates to prevent overselling.
  - 3.2. System shall detect customer location, to generate shipping details.
4. Storage
  - 4.1. Each table shall be assigned 10MB of memory
  - 4.2. The database system should support persistent storage.
5. Website
  - 5.1. The website shall support a search feature with a filter tool.
  - 5.2. The website shall support error messages such as “Cart is full” or “out of stock”..
  - 5.3. The website should be compatible with main web browsers such as chrome(v114)), safari(v16.4.1), edge(v114) and firefox(v114).
  - 5.4. Each page on the website shall have the same template of hyperlinks at the bottom of the page.
  - 5.5. The website shall be compatible with various devices of different sizes.
  - 5.6. All actions done on website shall have smooth transitions
  - 5.7. The response time shall be or be under the average accepted response time.
  - 5.8. The website shall have a visually pleasing interface and incorporate modern trends to keep customers engaged.
  - 5.9. The website design should be related the image of the company
  - 5.10. The website should have a consistent design pattern.
  - 5.11.
6. Security:
  - 6.1. The system shall encrypt passwords.
  - 6.2. The system shall encrypt payment information.
  - 6.3. The system shall include HTTPS to protect data during exchange between server and client.

- 6.4. The server shall reject invalid, unexpected, and malicious inputs and accept valid inputs.
  - 6.5. The website shall have a valid SSL/TLS certificate that is properly configured to the server.
  - 6.6. Server side validation logic shall be regularly reviewed and updated as system requirements evolve.
7. Sessions:
    - 7.1. The system shall generate a unique session id upon user login.
    - 7.2. The system shall include a mechanism to invalidate a session upon logout.
    - 7.3. The system shall provide session timeouts to logout inactive users.
  8. Localization:
    - 8.1. The system shall support and handle localized date and time formats, currency, and other locale-specific conventions.
  9. Data Integrity:
    - 9.1. The system shall ensure the accuracy and consistency of data stored in the database.
    - 9.2. The system shall implement proper data validation and sanitization.
  10. Usability:
    - 10.1. The user interface shall be user-friendly and easy to navigate.
  11. Availability:
    - 11.1. The system shall maintain high availability to ensure users can access the website.
  12. Environmental
    - 12.1. All documents such as order confirmations, shipping details, communication, etc. shall be digital to save paper
    - 12.2. The system shall use optimized files to lower amount of data processed through the network
    - 12.3. The system shall make use of System Side Rendering to save energy
  13. Legal
    - 13.1. Terms and conditions shall be easily accessible from all pages of the website via a link on the footer.
    - 13.2. Acknowledgement of Agreement shall be required for all users to agree to the terms and conditions during first use of service.
    - 13.3. Users shall be notified of changes to terms and conditions and prompted to agree with them again.
  14. Copyright

- 14.1. The website shall comply with all relevant copyright laws and regulations.
  - 14.2. All content on the website shall be original, licensed, or within fair use.
  - 14.3. A copyright notice shall be displayed on the website in the footer
15. Cookies
    - 15.1. The website shall inform users of cookies and obtain consent where required in compliance with applicable laws.
    - 15.2. Cookies shall be used in a way that enhances user experience without compromising user privacy.
16. Maintenance
    - 16.1. The website shall have a routine and planned maintenance schedule to update content, improve functionality, security patches, and update backend services.
    - 16.2. Downtime for maintenance shall be scheduled during off peak hours to minimize impact on users.
    - 16.3. Regular backups shall be made of website data and configurations.

# Competitive Analysis

Feature	Pandora <a href="https://us.pandora.net/">https://us.pandora.net/</a>	Zales <a href="https://www.zales.com/">https://www.zales.com/</a>	Moon Magic <a href="https://moonmagic.com/">https://moonmagic.com/</a>	Ian Charms <a href="https://iancharms.com/">https://iancharms.com/</a>	Tiffany & co <a href="https://www.tiffany.com/">https://www.tiffany.com/</a>
Strengths	Great design, highlights variety of jewelry, targets audience of all ages	Organized in terms of finding what kind of price range the consumer is looking for in specific. Easy to locate different types of jewelry	Landing page is informative with links for different categories of jewelry, overall design is well made.	Great sponsorship/advertising from famous celebrities shown on landing page.	Super good design. First page showing their categories instead of showing individual item.
Weaknesses	Lots of animations making the website slow, inconsistent font size and font style makes it hard to read sometimes.	Overall appearance has a very odd appearance in terms of colors. Some photos will look very vibrant but feel out of place in terms of appearance.	Method of categorizing jewelry on navigation bar is overwhelming when opening the drop down menu, only being able to view shopping cart as a side bar is inconvenient.	Has a weird/niche aesthetic that doesn't cater to the general public well, rather a specific targeted audience.	You can see the item price until you move your mouse to the picture.
Pricing	Ranging from \$20 to \$4000	Pricing seems to go from \$15	Ranging from \$10 to \$5000	Ranging from \$75 to \$450	Ranging from \$100 to \$10,000

		dollars up to about \$55,000			
Social Media	Blog posts, Instagram, Facebook	Blog posts, Instagram, Facebook	Blog posts, Facebook	Blog posts, Instagram, Facebook	Blog posts, Instagram, Facebook
Onboarding Experience	Smooth instructions	Smooth instructions	Moderate number of steps	Seamless, very few steps required	Smooth instructions

Feature	Pandora	Zales	Moon Magic	Ian Charms	Tiffany &co	ArtisanAura (Planned)
Customization	+	+	-	+	+	++
Shopping cart	+	+	+	+	+	+
Wishlist	++	+	+	-	+	+
Customer Reviews	+	+	+	-	-	+

Key: + implemented/basic, ++ unique/special , - does not exist

Summary:

Compared to our competitors, ArtisanAura plans to offer a more interactive customization option. We will have a whole section of the website dedicated solely towards this. This will give unique features in terms of usability and intuitiveness in the design. We allow customers to select a design amongst a variety of options and choose the material and gemstone that make up the piece of jewelry. We will also have a minimal amount of options for filtering. This will make the design much more appealing and straightforward compared to cluttered messes with way too many options making the user lose focus.

# System Architecture / Technologies

**7. High-level system architecture and technologies used (complete this section only after you finish checkpoint #2):** Briefly provide itemized list of all main SW components such as frameworks, APIs, tools and systems to be

- Server Host: Google Compute Engine 1vCPU 2 GB RAM
- Operating System: Ubuntu 20.04 Server
- Database: MySQL 8.0
- Web Server: NGINX 1.24
- Server-Side Language: Javascript
- Additional Technologies:
  - Web Framework: Express
  - IDE: VScode
  - SSL Cert: Lets Encrypt (Cert Bot)

## Check List

- Team found a time slot to meet outside of the class Github master chosen
  - DONE
- Team decided and agreed together on using the listed SW tools and deployment server
  - DONE
- Team ready and able to use the chosen back and front end frameworks and those who need to learn are working on learning and practicing
  - DONE
- Team lead ensured that all team members read the final M1 and agree/understand it before submission
  - DONE
- Github organized as discussed in class (e.g. master branch, development branch, folder for milestone documents etc.)
  - DONE

# List of Contributions

- Tamer
  - CheckPoint #1
    - Brainstorm executive summary, write use cases,
  - CheckPoint #2
    - Research+test tech stack, added about me html page to our repo
- Denean
  - CheckPoint #1
    - Brainstorm executive summary, write use cases, edit competitive analysis
  - CheckPoint #2
    - Research+test tech stack, added about me html page to our repo, deployed html site to VM
- Daniel
  - CheckPoint #1
    - Brainstorm executive summary, write use cases, edit use cases+diagrams
  - CheckPoint #2
    - Added a testing and dev branch to github, added the ip of our site to github, added about me html page to our repo
- James
  - CheckPoint #1
    - M1 document editor, brainstorm executive summary, edit executive summary, write use cases, add/edit functional requirements,
  - CheckPoint #2
    - Research+test tech stack, added about me html page to our repo
- Yitian

- CheckPoint #1
  - Brainstorm executive summary, write use cases, edit data items/entities,
- CheckPoint #2
  - Research tech stack, added about me html page to our repo

<b>Member</b>	<b>Score</b>
Tamer	2
Denean	2
Daniel	2
James	2
Yitian	2

Total of all scores = 10

Member	Email Sent to Professor(feedback)
Cassia	Done
Daniel	Done
Denean	Done
Tamer	Done
Yitian	Done
James	Done

# **SW Engineering CSC648-848-01**

## **Summer 2023**

Project Title: Jewelry Shopping Site: ArtisanAura

Team 05

Cassia Reddig, creddig@sfsu.edu (Team Lead)

Denean Le (Github Master)

Tamer Senan (Back End Lead)

Yitian Cai (Front End Lead)

Daniel Moorhatch (Editor)

James Donnelly

Milestone - Version	Date Submitted
M2V1	07/11/2023
M2V2	07/25/2023

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# 1. Data Definitions

- User
  - General user: Do not require logging in.
    - General users are able to view, search, purchase, and customize products.
    - Attributes: ID
  - Approved user: Require logging in.
    - Approved users inherit privileges from general users, with the addition of many more features offered by our application.
    - Attributes:
      - ID
      - Account
- Account: Every approved user has an account that contains user information.
  - Customer account
    - Customer accounts have access to saved product customizations and past orders.
    - Attributes:
      - User ID
      - Name
      - Email
      - Password
  - Admin account
    - Admin accounts have access to privileges like creating and removing product pages and reviewing customer orders.
    - Attributes:
      - User ID
      - Name
      - Email
      - Password
- Product
  - Ready-made product
    - Ready-made products are products that do not offer any options for changing the way the product appears with the exception of size adjustments.
    - Attributes:

- ID
  - Name
  - Type: refers to type of jewelry such as ring, bracelet, etc.
  - Material
  - Gemstone
  - Description
  - Price
  - Images
    - Images will only be in PNG format with a maximum size of 3MB each
  - Size
  - Created\_at
- Customized product
  - Customized products are products that have options for the general user to change the way the product appears.
  - Attributes:
    - ID
    - Type
    - Design
    - Material
    - Gemstone
    - Packaging
    - Size
    - Created\_at
- Cart
  - Cart is similar to a shopping cart where the user will be able to add one or more products for purchase.
  - Attributes:
    - ID
    - User ID
    - Product ID
- Order
  - Order is referring to the user information and list of products within a single transaction. It is used to keep track of what products are purchased and by who.
  - Attributes:
    - ID

- Cart ID
  - Created\_at
- Review
  - Reviews are posts created by users who have purchased a product and would like to share their opinions about that specific product.
  - Attributes:
    - ID
    - Product ID
    - User ID
    - Description
    - Rating
    - Created\_at
- Payment
  - Payment is the card information used to purchase an item. This will be associated to only one user.
  - Attributes:
    - ID
    - User ID
    - Name
    - Billing address
    - Card number
    - Expiration date
    - Security code

## 2. Prioritized Functional Requirements

### Priority 1:

1. User
  - 1.1. General user: Does not need to login/register.
    - 1.1.1. (1) A general user shall be able to have unrestricted access to the website and view product details from many devices.
    - 1.1.2. (1) A general user shall be able to purchase many products by adding them into their shopping cart and completing the checkout process.
    - 1.1.3. (1) A general user shall choose at most one type of jewelry per product customized.
    - 1.1.4. (1) A general user shall have the option to register one and only one account by providing account registration details through the account creation form.
    - 1.1.5. (1) A general user shall be able to add many items into their shopping cart for purchase at a later date while being able to continue shopping.
    - 1.1.6. (1) A general user shall be able to make changes to the items added to the shopping cart.
    - 1.1.7. (1) A general user shall be able to track the status of their placed orders using an order ID provided through their order confirmation page or email.
    - 1.1.8. (1) A general user shall be able to search for specific products by entering relevant keywords or product names into the search bar.
    - 1.1.9. (1) A general user shall be able to filter products by applying many filters to narrow the displayed products based on their preference.

- 1.1.10. (1) A general user shall have a tracking id provided once their order has been completed which allows them to check the shipment status with the postal service.
  - 1.1.11. (1) A general user shall choose at most one design per product customized.
  - 1.1.12. (1) A general user shall choose at most one metal per product customized.
  - 1.1.13. (1) A general user shall choose at most one gem stone per product customized.
  - 1.1.14. (1) A general user shall choose at most one size per product customized.
  - 1.1.15. (1) A general user shall choose at most one engraving per product customized.
  - 1.1.16. (1) A general user shall choose at most one packaging per product customized.
  - 1.1.17. (1) A general user shall choose to make a customized product or purchase a normal product.
- 1.2. Approved user: Needs to login/register.
- 1.2.1. (1) An approved user shall be able to log into the system which will grant access to save customizations and retrieve these customizations.
  - 1.2.2. (1) An approved user shall be able to edit customizations that have been previously saved.
  - 1.2.3. (1) An approved user shall be able to view current/past orders through the system displaying order history along with relevant information such as dates, items and price.

- 1.2.4. (1) An approved user shall be able to delete the account after confirming deletion through a prompt, allowing removal of their profile and data from the system.
  - 1.2.5. (1) An approved user shall be able to manage shipping address(es) by editing, adding or deleting shipping addresses.
  - 1.2.6. (1) An approved user shall be able to manage their payment methods by editing, adding and deleting payment options from their account.
  - 1.2.7. (1) An approved user shall be able to log into the system using their approved credentials that will verify user identity.
  - 1.2.8. (1) An approved user shall be able to log out from the system, which removes their current session from their account data.
2. Employee: Needs to login
    - 2.1. (1) An Employee shall be able to make changes to product details by modifying product descriptions, price and images.
    - 2.2. (1) An Employee shall be able to create and post many new products into the system.
    - 2.3. (1) An Employee shall be able to remove many products from the system allowing data of the product to be removed.
    - 2.4. (1) An Employee shall have access to store transactions that include user information and order details.
    - 2.5. (1) An Employee shall be able to manage product inventory allowing adjustment of stock levels.
  3. Account:
    - 3.1. (1) An account shall be owned by one and only one user per email provided during creation of account.
  4. Products
    - 4.1. (1) The system shall be able to display many products.

- 4.2. (1)A product shall have a quantity selection in respect to the amount of product available in the database.
  - 4.3. (1)A product shall have a unique identifier to accurately track the product's information.
  - 4.4. (1)A product shall have only one main image to be displayed on the catalog page.
  - 4.5. (1)A product shall have at least one price.
  - 4.6. (1)A product shall have zero or many stock availability.
  - 4.7. (1)A product shall be ordered by many users.
  - 4.8. (1)A product shall be able to be added to one and only one cart.
  - 4.9. (1)A product shall be ordered many times.
  - 4.10. (1)A product shall be reviewed many times.
5. Shopping cart
    - 5.1. (1) A cart shall be associated to at most one general user.
    - 5.2. (1) A cart shall be able to contain many products.
    - 5.3. (1) A cart shall calculate the sum of at most one price per product placed in the cart.
  6. Order
    - 6.1. (1) An order shall be associated to at most one general user.
    - 6.2. (1) An order shall have at most one unique order number.
    - 6.3. (1) An order shall contain at least one product.
    - 6.4. (1) An order shall have at most one total price.
    - 6.5. (1) An order shall include at most one shipping information.
    - 6.6. (1) An order shall include at most one billing information
  7. Review/Rating
    - 7.1. (1) A review shall have at most one title.
    - 7.2. (1) A review shall have at most one description.
    - 7.3. (1) A review shall be associated to at most one product.

7.4. (1) A review shall be associated with at most one approved user.

7.5. (1) A review shall have at most one rating.

### **Priority 2:**

1. User

1.1. Approved user: Needs to login/register.

1.1.1. (2) An approved user shall be able to provide feedback for products purchased by them through a star rating and text based reply.

2. Employee: Needs to login

2.1. (2) An Employee shall be able to track sales on each product in the system.

3. Account

4. Products

4.1. (2) A product shall have one or multiple images associated with it.

4.2. (2) A product shall have one and only one description.

4.3. (2) A product shall be able to be compared with at most one product.

5. Shopping cart

5.1. (2) A cart shall be able to be saved for later by at most one approved user.

6. Order

6.1. (2) An order shall have at most one order status.

6.2. (2) An order shall be able to be returned at most once.

6.3. (2) An order shall be able to be canceled at most once.

### **Priority 3:**

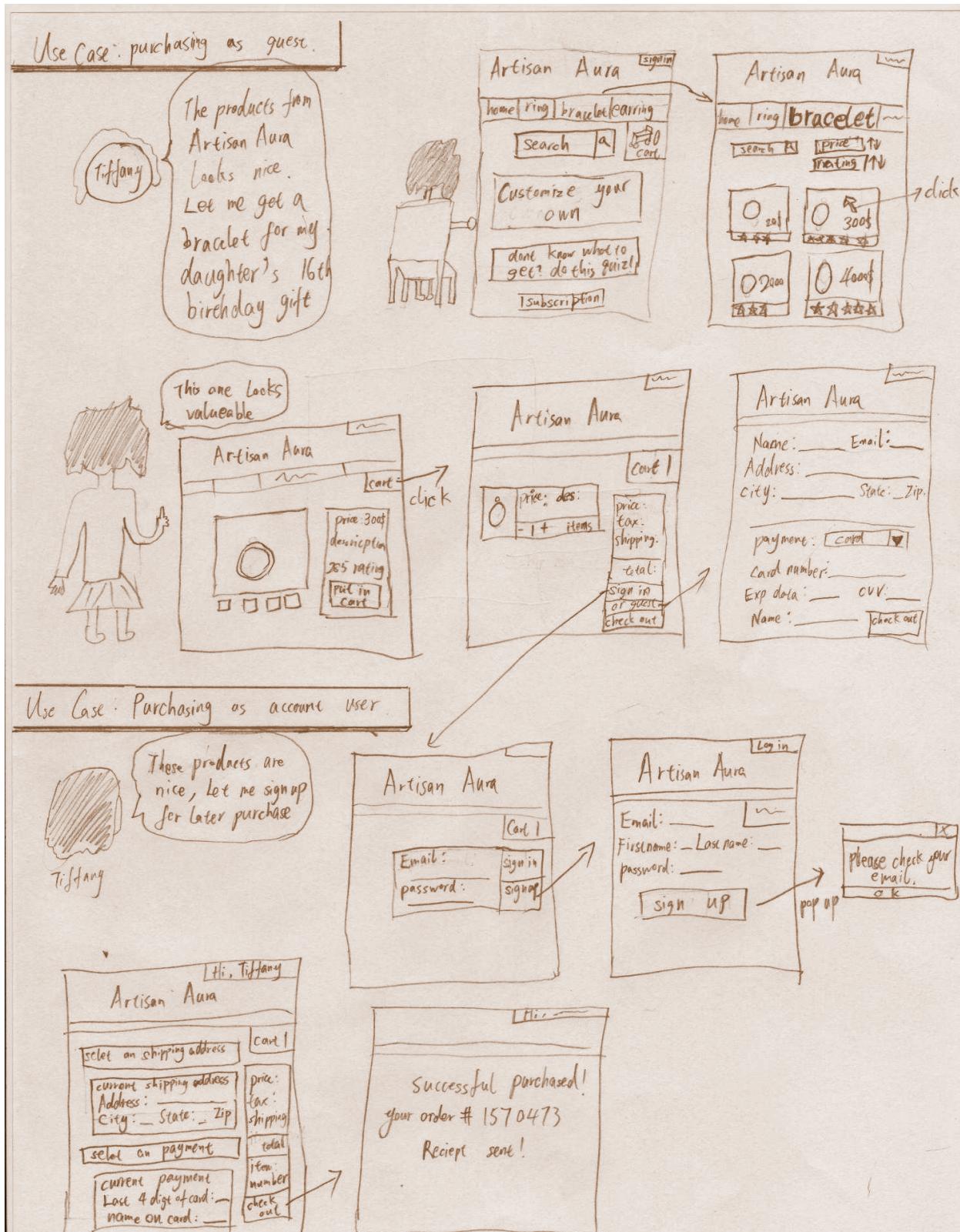
6. Order

6.1. (3) An order shall include at most one shipment tracking details.

7. Payment

7.1. (3) A default payment method shall be associated to at most one approved user.

### 3. UI Mockups and Storyboards (high level only)



**Use Case: Customizing a necklace on our website**

Finally, I found a website that can create your own

Sarah

Artisan Aura home page Create your own

Artisan Aura necklace style: available style: preview estimate price: please sign in to save share save

store in center: FB by Diamond

→ after sign in:

click

Artisan Aura personal profile purchased history saved items favorite items subscription

Artisan Aura Person profile saved item

- style: materials made
- available style: different style that made of that materials. steel, string, etc...
- "Save" will save the current customize. user will need an account to save

**Use Case: Saving & sharing Designs**

Let me share my designs to my friends

Isabel

after sign in then click on personal profile

click

Artisan Aura personal profile saved items

pop:

enter email that you want to share. email:

**Use Case: Checking status of an order**

Let me sign in and check my order

Peter

Artisan Aura personal profile purchased history order number # items order number # items

Artisan Aura order tracking # frank package

- status
  - arriving tomorrow
  - delivered
  - arrived

### Use Case : Joining mail subscription news Letters



Artisan Aura have some good designs!  
Let me subscribe for promotion code and more discount!

Artisan Aura

Customize  
LAS quiz  
  
get 20% off after subscription!

click

Artisan Aura

discount notice  
 limited Items  
 new products  
 please sign in to continue

note: code generate by card!

\* after account sign in

Artisan Aura

personal profile  
subscription  
discount notice   
Limited Item   
new products   
present discount email   
cancel sub

### Use Case: Contacting Customer Support



This item is out of stock!  
Let me contact their employee

Steven

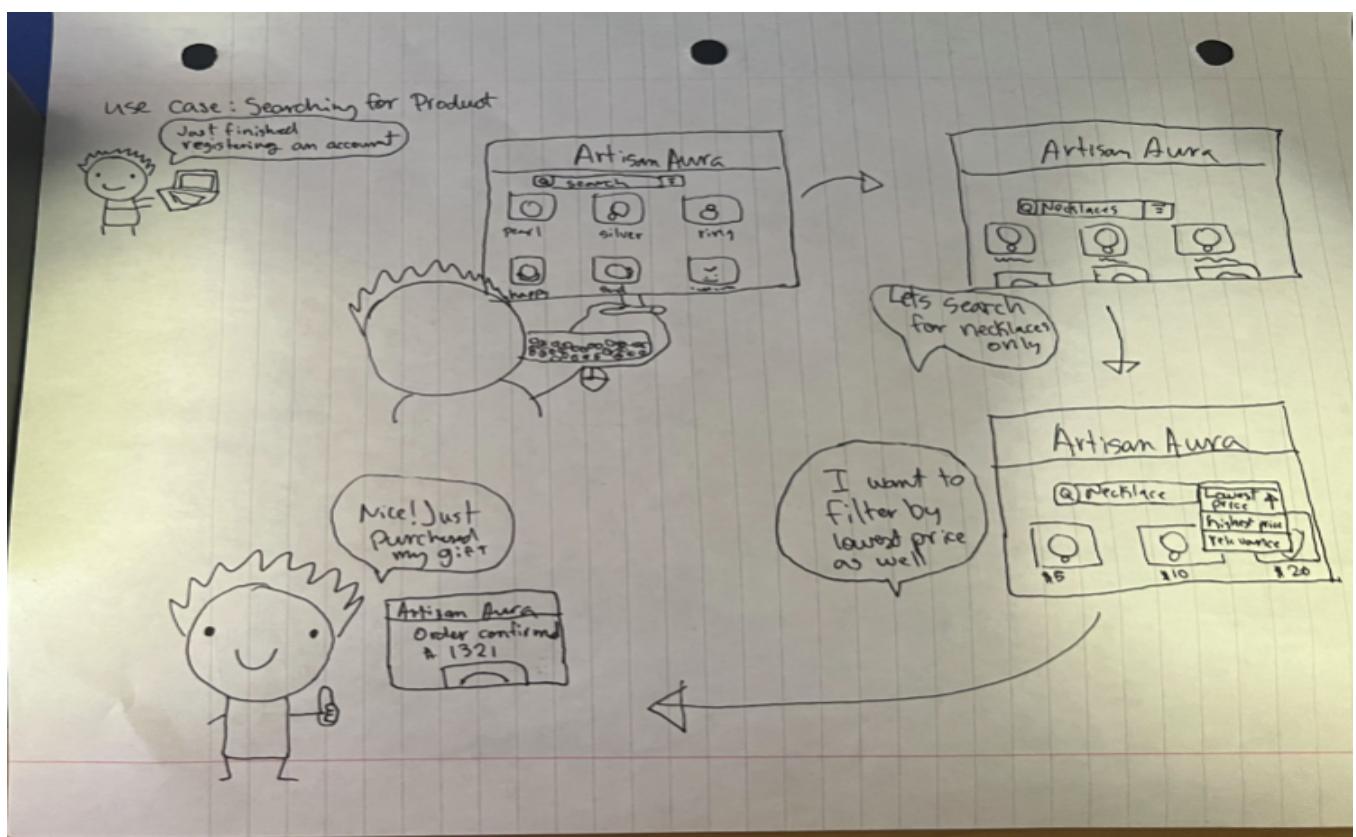
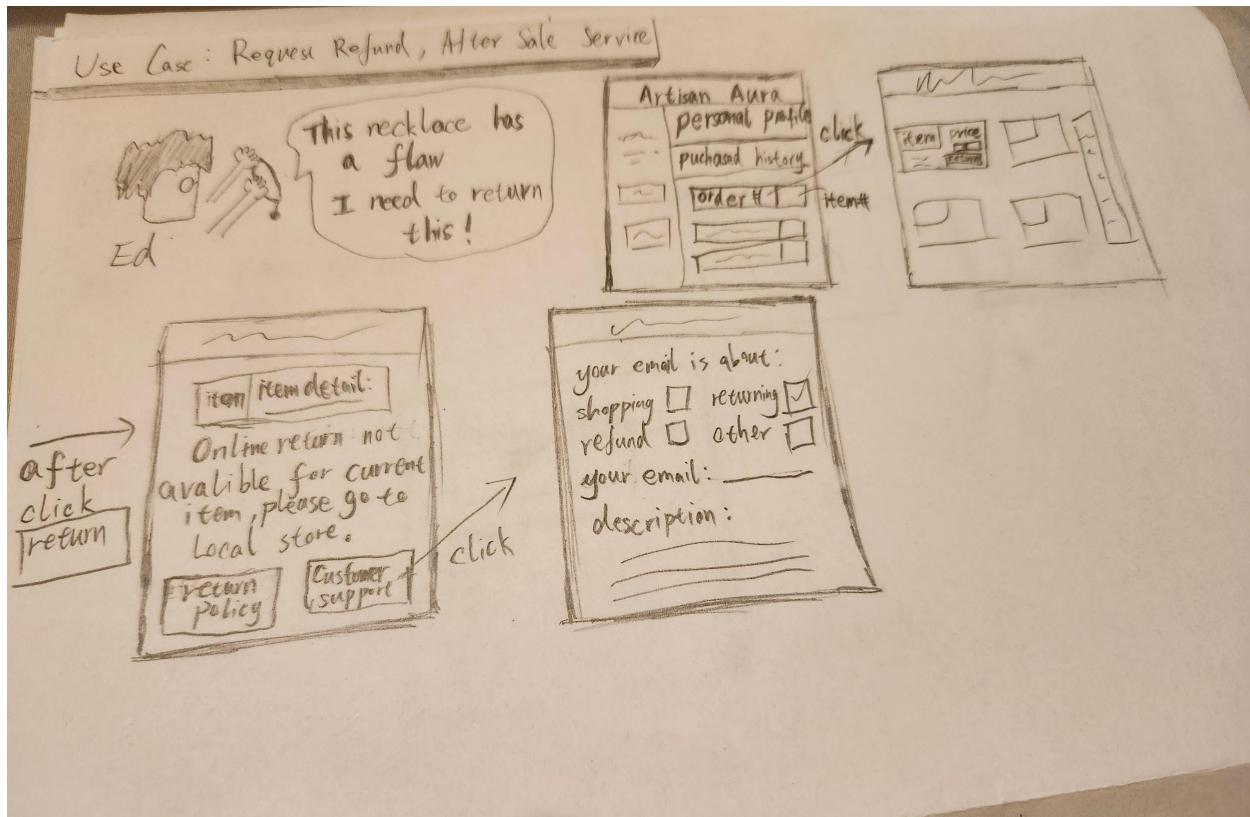
out of stock

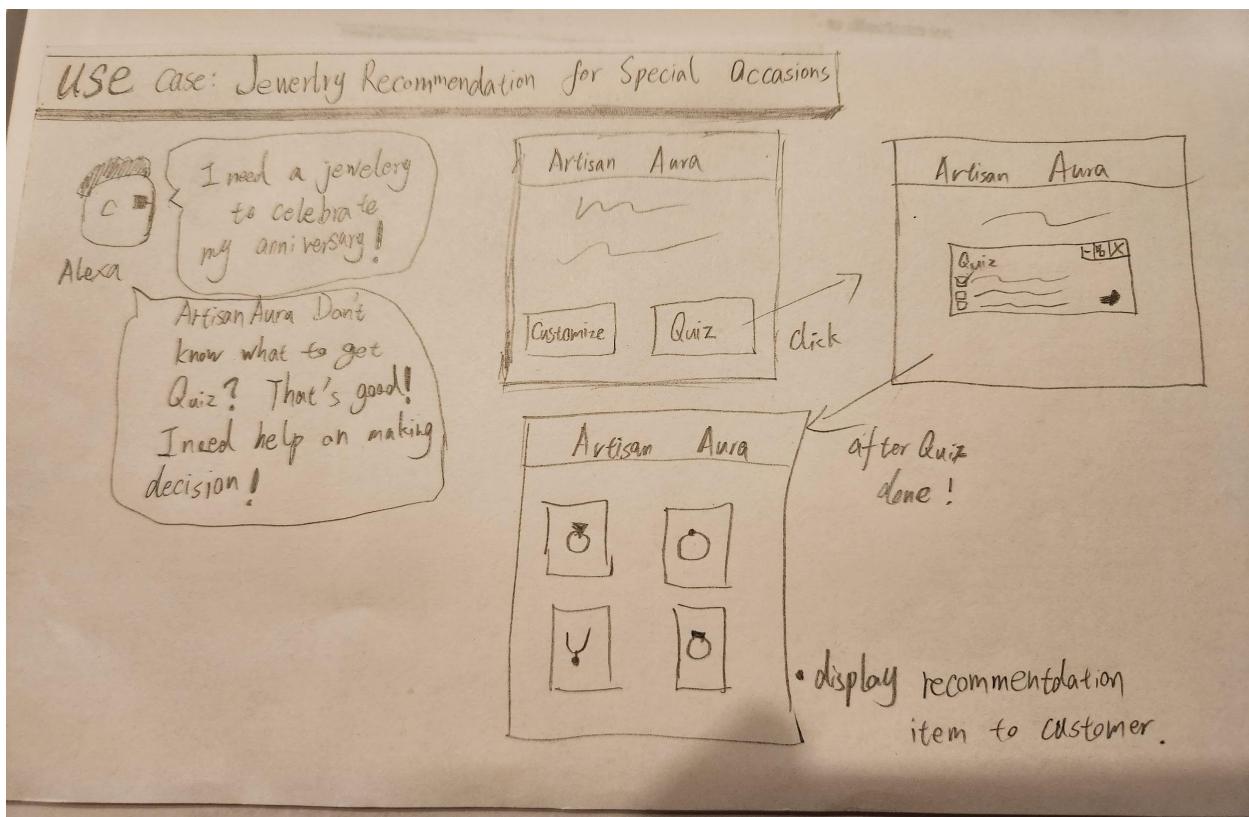
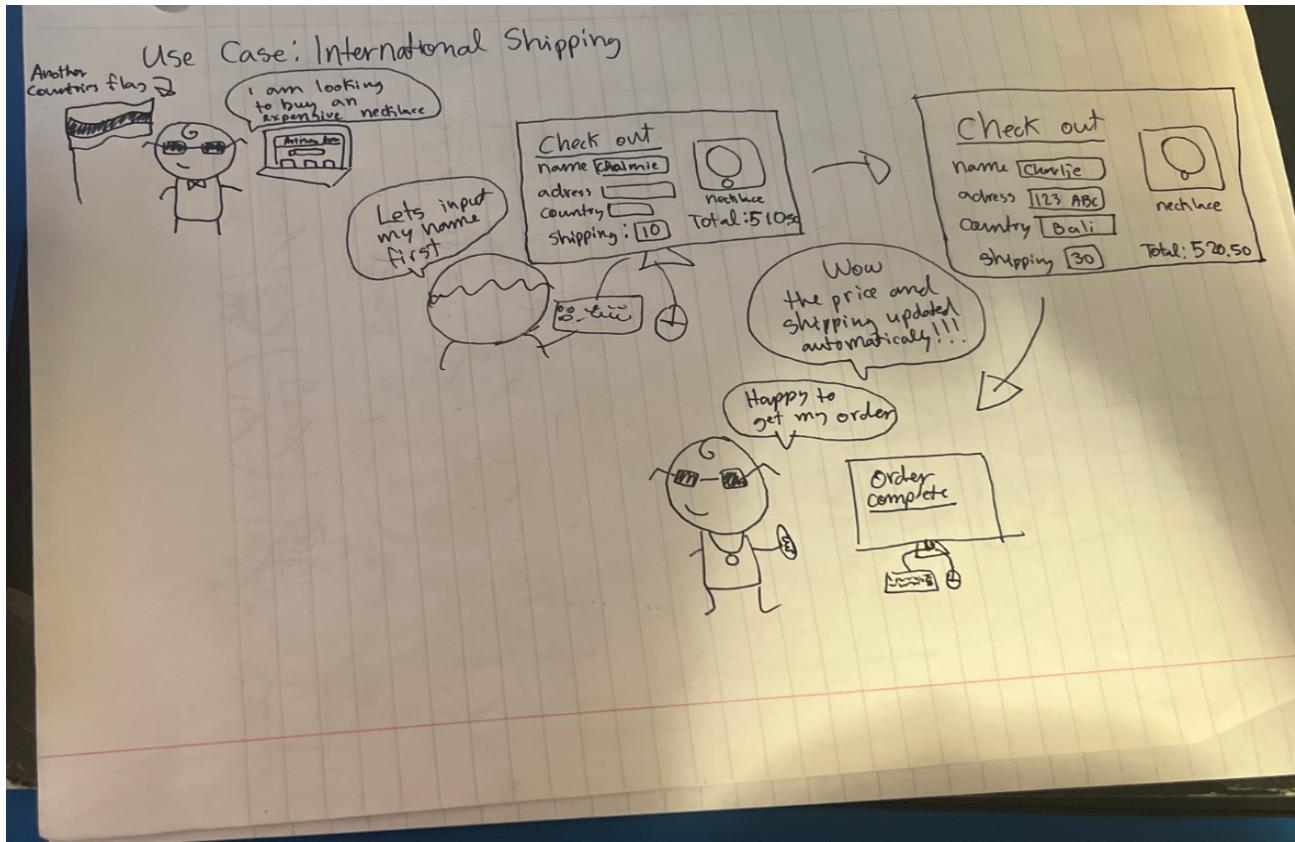
click

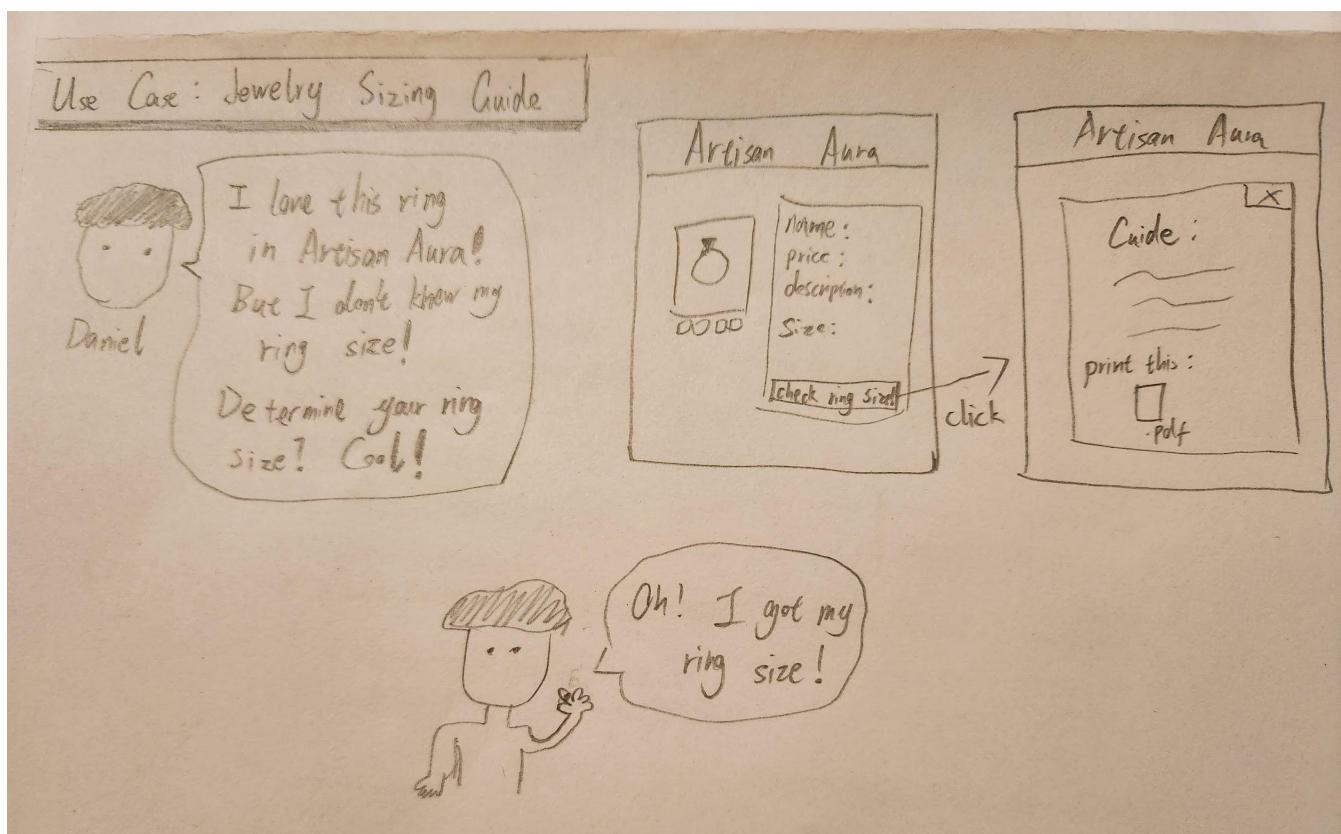
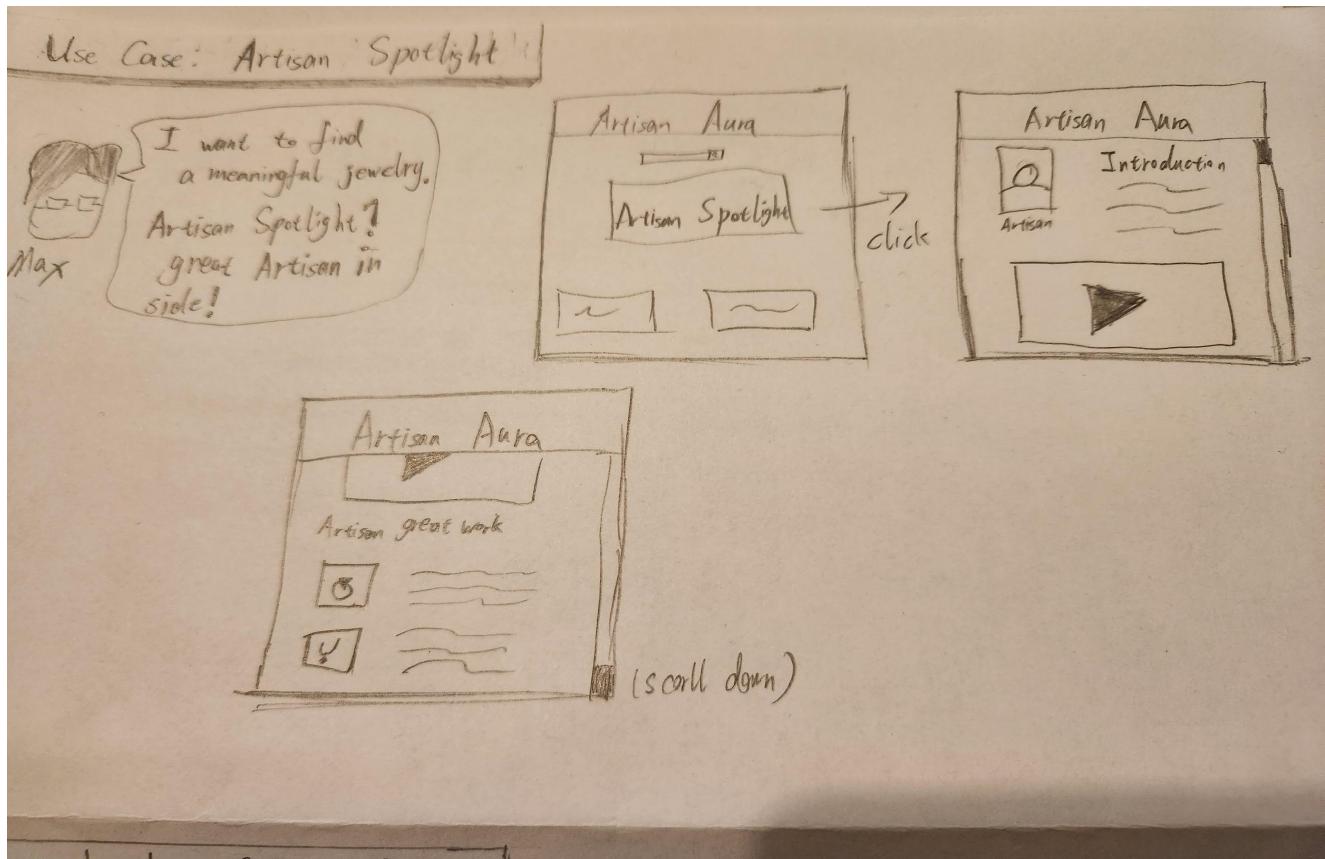
your email is about  
shopping  returning   
refund  after   
your email: \_\_\_\_\_  
description: \_\_\_\_\_

click

Email Sent!  
One of our worker will answer your question in 1 or 2 days.  
Or you can go to nearest store for details!



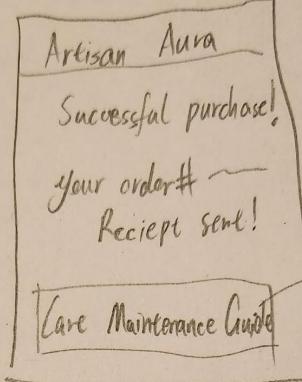




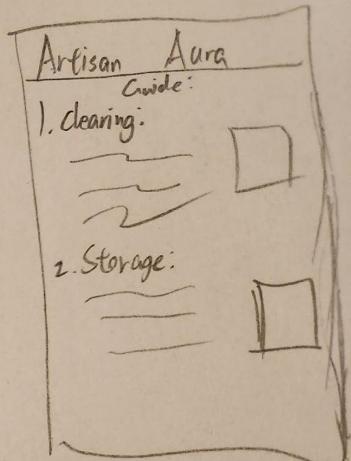
## Use Case: Jewelry Care and Maintenance Guides



Jewelry is too  
expensive! AH!  
This Care and Maintenance  
Just right to me!



click



## **4. High level database architecture and organization**

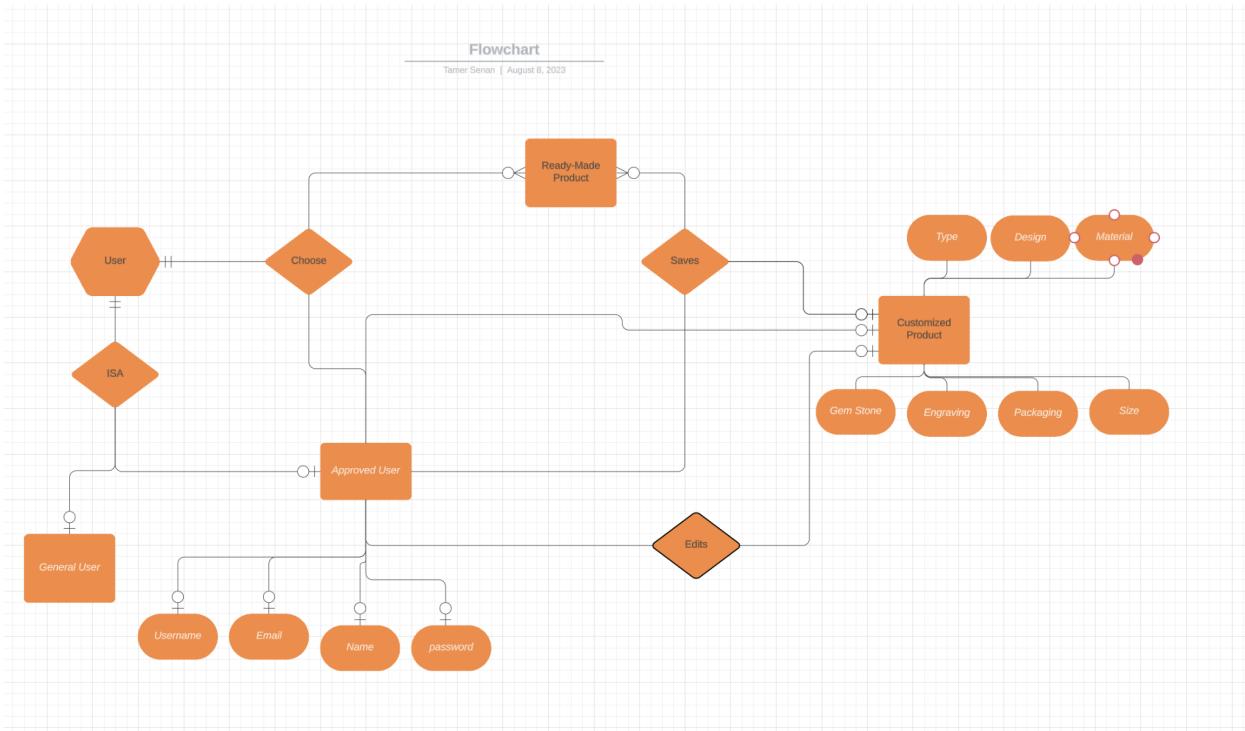
Database requirements:

- 1.1.3. (1) A general user shall choose at most one type of jewelry per product customized.
- 1.2.1. (1) An approved user shall be able to save many customizations.
- 1.2.2. (1) An approved user shall be able to edit at least one previously saved customizations
- 1.1.10 (1) A general user shall choose at most one design per product customized.
- 1.1.11 (1) A general user shall choose at most one material per product customized.
- 1.1.12 (1) A general user shall choose at most one gem stone per product customized.
- 1.1.13 (1) A general user shall choose at most one size per product customized.
- 1.1.14 (1) A general user shall choose at most one engraving per product customized.
- 1.1.15 (1) A general user shall choose at most one packaging per product customized.
- 1.1.16 (1) A general user shall choose to make a customized product or purchase a normal product.

Entities, attributes, relationships, and domains at the high level:

- User (Domain)
  - General User (Entity)
    - Attributes:
      - Id: integer
  - Approved User (Entity)
    - Attributes:
      - Id: integer
      - Email: varchar(255)
      - Name: varchar(128)
      - Password: varchar(255)
- Customized Product (Entity)
  - Attributes:
    - Type: varchar(128)
    - Design: integer
    - Material: varchar(128)
    - Gemstone: varchar(128)
    - Size: varchar(128)
    - Engraving: varchar(128)
    - Packaging: varchar(128)
- Ready-Made Product (Entity)
- Relationship: Choose, Save, Edit
  - General User chooses between customized product or ready-made product
  - Approved User saves customization
  - Approved User edits saved customizations

Entity Relationship Diagram ( ERD ) based on DB requirements:



DBMS:

- MySQL is the DBMS we will choose because we believe it is the most efficient and the team is more familiar with it.

Media storage:

- Our database will have images in the format of PNG or JPEG file with a maximum size of 3MB. Images will be used in association with products and stored in a file called “images”. We will store references to the images in the database.

Search and filter architecture and implementation:

- To search for a product, the string typed into the search bar will be used to compare with product names in the database. The database will give back a list of products that match the string, starting from the newest products added to the database to the oldest products added.

Example search query:

```
SELECT * from Product p  
WHERE p.name=?  
ORDERBY p.created_at DESC;
```

- To filter products, there will be a side panel to allow for filtering. The inputted choices from the user will be used to compare with product attributes in the database. The database will give back a list of products that match the constraints given by the general user, starting from the newest to oldest products added to the database.

Ex. If the user decided that they would only like to view gold rings:

```
SELECT * from Product p  
WHERE p.type="ring" AND p.material="gold"  
ORDERBY p.created_at DESC;
```

## 5. High Level APIs and Main Algorithms

High Level API features:

- Purchase product
  - To purchase products, the user will be required to provide name, email, address, and card information. The frontend will send a request to the backend, where the backend will store the information into our database and generate a “created\_at” date and order ID. The backend will then respond to the request by sending the frontend the order ID for order confirmation. By giving the user the order ID, the user will be able to search and view their order details.
- Post reviews
  - To post a review, the user will be required to provide title, description, and a rating ranging from one star to five stars. The frontend will send a request to the backend, where the backend will store the information into our database and generate a “created\_at” date and review ID. The backend will respond to the request by sending back the information along with the date generated to the frontend. The frontend will display the information for all users to view on the associated product page.
- Upload product page
  - To upload a product page, the user is required to be an employee. The page required the employee to enter the product name, description, type, material, and images associated with the product. Once the information is submitted, the frontend will send a request to the backend, where the backend will store the information into our database and generate a “created\_at” date and product ID. The backend will respond to the request by sending a message indicating success or failure. If successful, the frontend will display the product page for all users to view.

Main Algorithms:

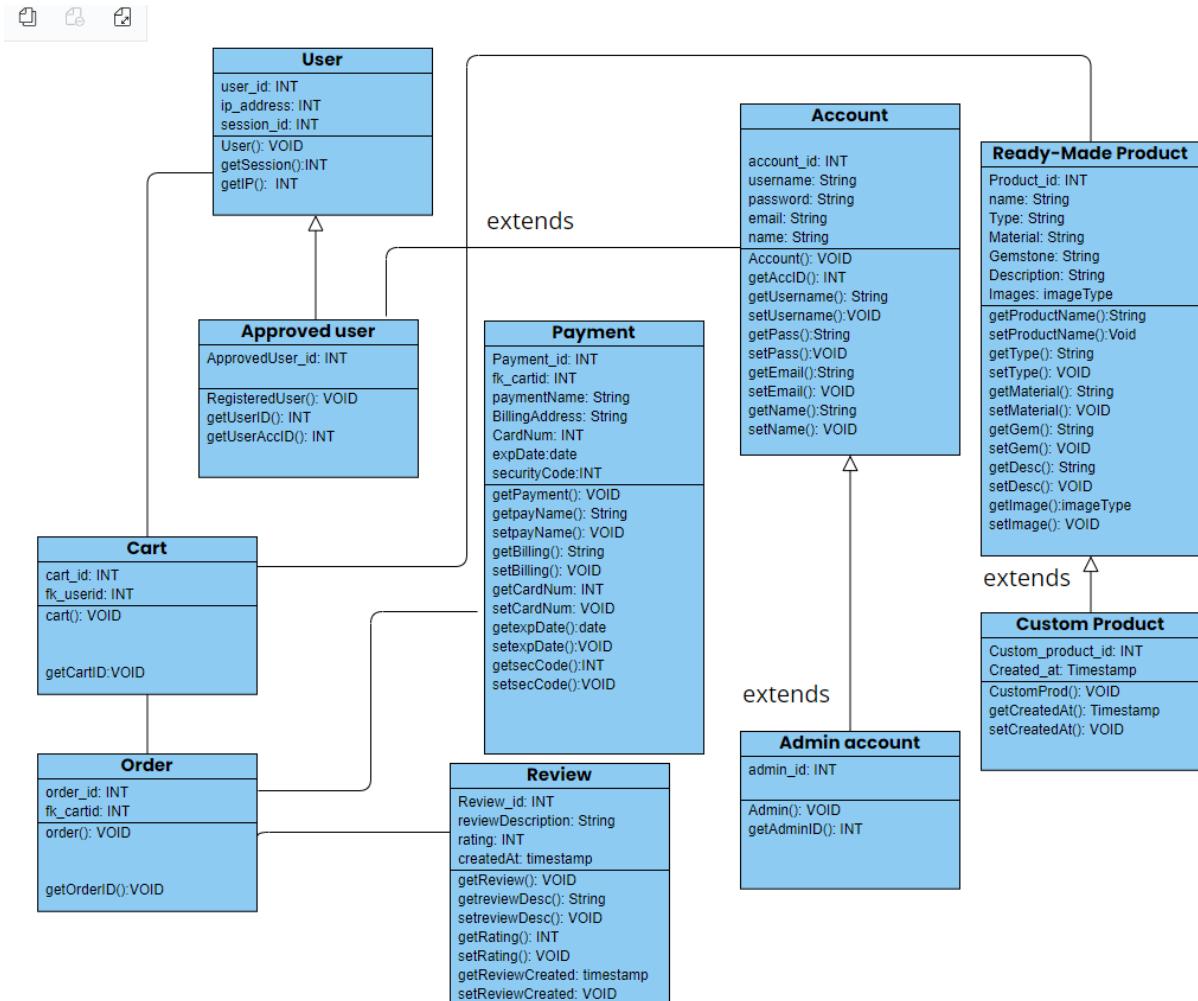
- Products will be posted in the order of newest to oldest by default. The “created\_at” dates associated with the products will be used to make this process possible. However, users may change the order in which the products

are posted by selecting from a drop down menu. The options provided will be sorting by date or price in descending or ascending order.

New software or framework:

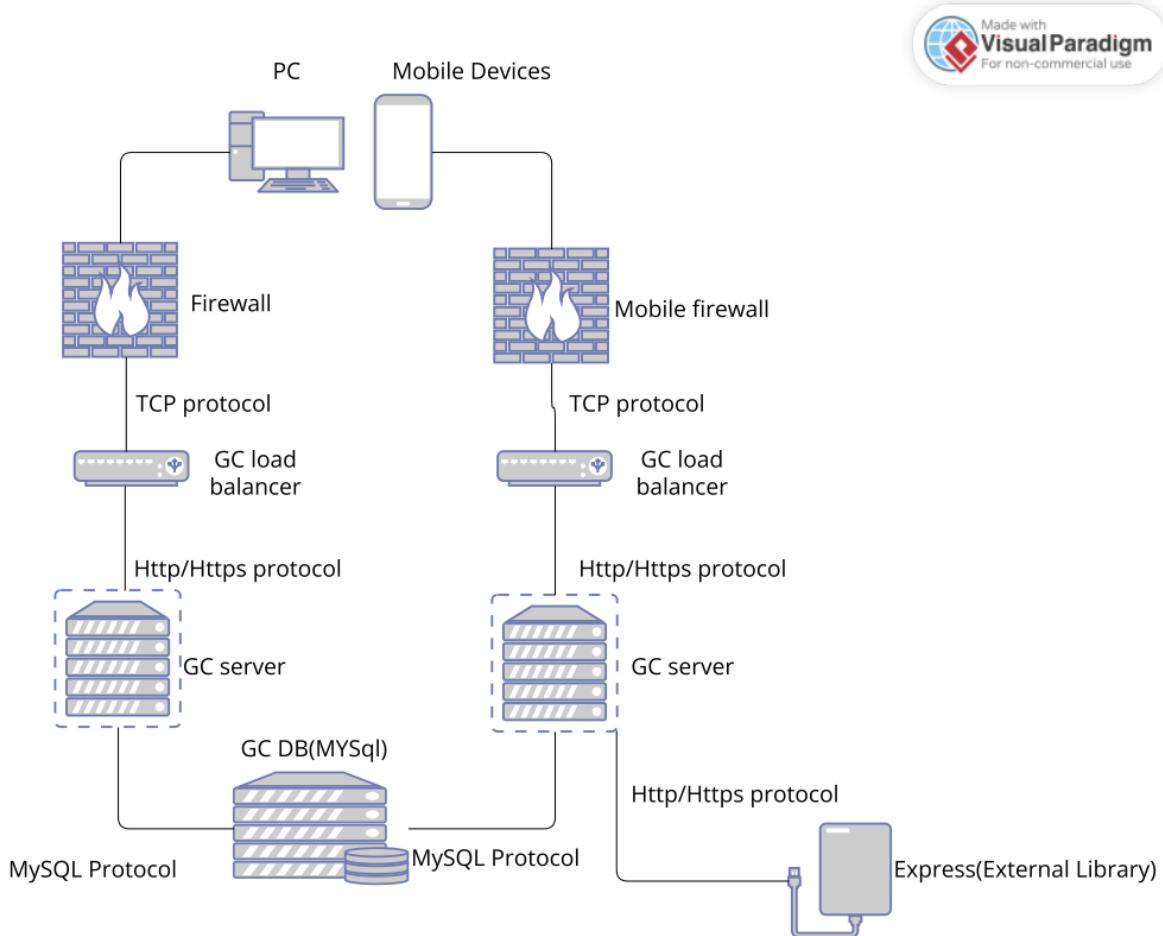
- No changes to software tools and framework.

## 6. High Level UML Diagrams

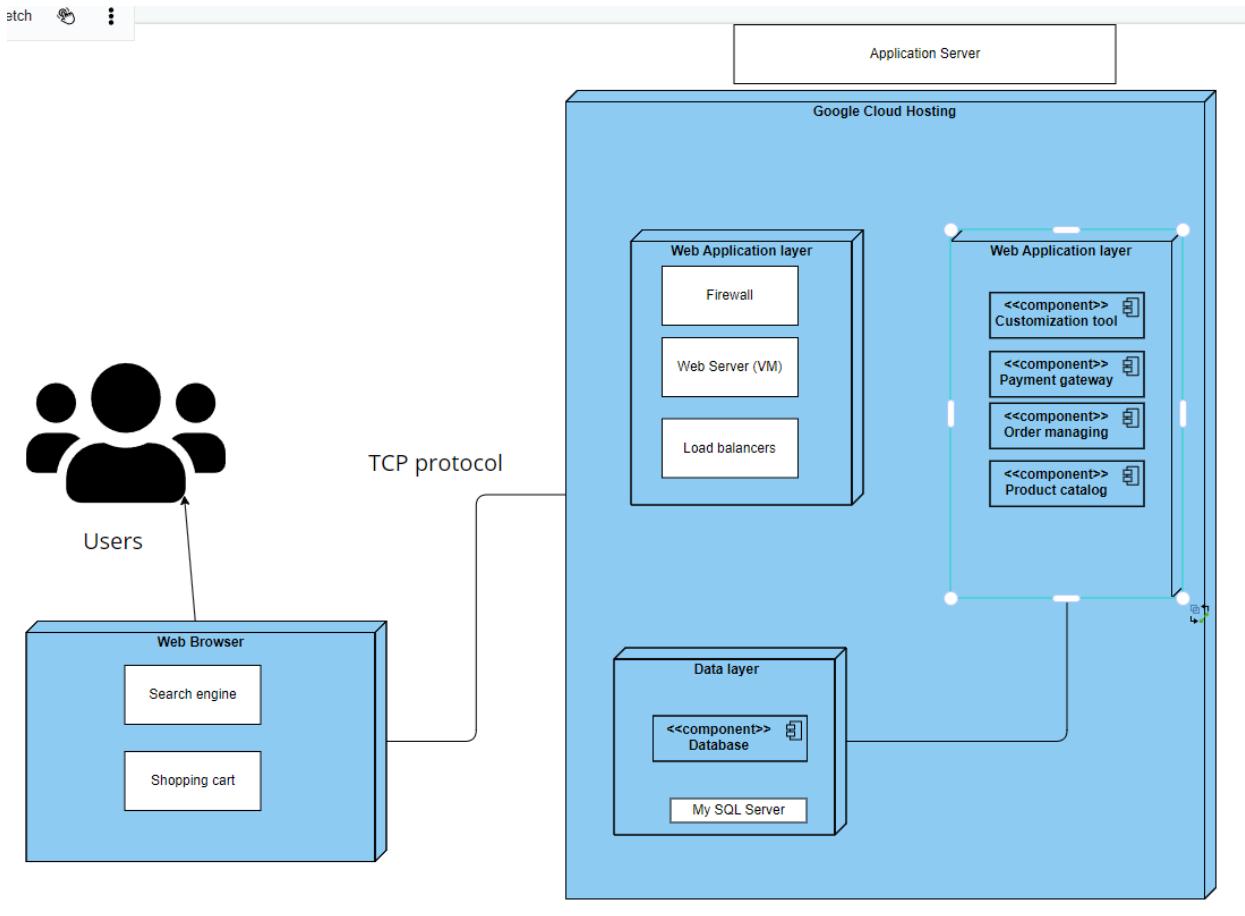


## 7. High Level Application Network and Deployment Diagrams

Application Networks Diagram:



## Deployment Diagram:



## **8. Identify *actual* key risks for your project at this time**

**Skills risk:** There is a risk that we as a team do not have the skill set or experience to create a feature that allows us to customize our jewelry and features of our products.

**Solution:** We are going to assess each other's previous experience and current skills to see who has the most experience working with a tool like this. If we conclude that we cannot implement this tool, we will substitute it with something similar that we can complete.

**Schedule risk:** There is a risk that some of us may not be able to work as much as others due to time conflicts.

**Solution:** We have scheduled meetings that work with everyone's schedule that allow for quick check-ins and delegation of tasks. We also utilize Trello with task and mini due dates to help us work as individuals outside of our work meetings.

**Technical risk:** Currently our main technical risk is ensuring that our database ERD diagram is properly implemented.

**Solution:** We are discussing as a team how we want our ERD entities and relationships to be handled in our database. How we're going to resolve this issue is to try two variations of our ERD and compare between the two seeing where each one fails.

## **9. Project management**

Throughout the M2 phase, our team effectively used various digital tools to facilitate task management and collaboration. Trello was central to our workflow management, where we assigned tasks to team members and tracked their progress. Trello's board and card system allowed us to visualize our workflow, shifting tasks from "To Do", to "Doing", and finally marking them as "Done". Another tool we utilized was Google Docs for our brainstorming space, sharing technical documentation, and sharing notes. Its real-time collaboration capabilities enabled us to simultaneously work on the same documents, boosting our productivity and efficiency. Discord served as our go-to communication tool in our day-to-day interactions. Discord channels helped us categorize discussions by topic, creating a centralized space for quick updates, resource sharing, and answering questions. We used Zoom for regular work sessions and meetings. We held virtual meetings every two days to review progress, address concerns, and strategically plan ahead. For future tasks, we plan to maintain these tools, as they have proven to be effective in managing our workflow, communication, and collaboration.

## 10. Detailed list of contributions

- Tamer
  - Describe and define APIs, Describe significant non-trivial algorithm/process, Describe changed SW tools and frameworks, Design high level DB and create ERD-Models, Determine media storage, Determine search/filter architecture and implementation, Back-end and Front-end teams connect UI with back-end, Create MySQL databases
- Denean
  - Describe and define APIs, Describe significant non-trivial algorithm/process, Describe changed SW tools and frameworks, Design high level DB and create ERD-Models, Determine media storage, Determine search/filter architecture and implementation, Back-end and Front-end teams connect UI with back-end, Research and document how to create public SSH username and keys, Generate public SSH user and keys, Prioritize and expand functional requirements, Data Definitions and Glossary, Update GitHub branches, Connect GitHub to Google VM, Create MySQL databases
- Daniel
  - Back-end and Front-end teams connect UI with back-end, Prioritize and expand functional requirements, Establish GitHub workflow, Update GitHub branches, Connect GitHub to Google VM, Identify Key Risks, Create application network and deployment diagrams, Create UI mockups and storyboards, help design Home Page for Vertical Prototype, Home Page UI/UX, UML Diagrams and Network/Deployment diagrams.

- James
  - Build Home Page for Vertical Prototype, Home Page UI/UX, Home Page design and handlebars, Home Page quiz, Back-end and Front-end teams connect UI with back-end, Connect GitHub to Google VM, Create use cases based on executive summary in M1, Revise M1 document, Research and troubleshooting connect to DB, Login/Registration function, Database statements
- Yitian
  - Build Home Page for Vertical Prototype, Home Page UI/UX, Back-end and Front-end teams connect UI with back-end, Create UI mockups and storyboards, Research and troubleshooting connect to DB, Search Bar function, Search results page, Database statements

<b>Member</b>	<b>Score</b>
Tamer	2
Denean	2
Daniel	2
James	2
Yitian	2

Total of all scores = 10

Member	Email Sent to Professor (feedback)
Cassia	DONE
Daniel	DONE
Denean	DONE
Tamer	DONE
Yitian	DONE
James	DONE

# **SW Engineering CSC648-848-01**

## **Summer 2023**

**Project Title:** Jewelry Shopping Site: ArtisanAura

**Team 05**

Cassia Reddig, creddig@sfsu.edu (Team Lead)

Tamer Senan (Github Master)

Yitian Cai (Back End Lead)

James Donnelly (Front End Lead)

Denean Le (Editor)

Daniel Moorhatch

Milestone - Version	Date Submitted
M3V1	07/25/2023
M3V2	08/01/2023

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# 1. Data Definitions

- User
  - General user: Do not require logging in.
    - General users are able to view, search, purchase, and customize products.
    - Attributes: ID
  - Approved user: Require logging in.
    - Approved users inherit privileges from general users, with the addition of many more features offered by our application.
    - Attributes:
      - ID
      - Account
- Account: Every approved user has an account that contains user information.
  - Customer account
    - Customer accounts have access to saved product customizations and past orders.
    - Attributes:
      - User ID
      - Name
      - Email
      - Password
  - Admin account
    - Admin accounts have access to privileges like creating and removing product pages and reviewing customer orders.
    - Attributes:
      - User ID
      - Name
      - Email
      - Password
- Product
  - Ready-made product
    - Ready-made products are products that do not offer any options for changing the way the product appears with the exception of size adjustments.
    - Attributes:

- ID
  - Name
  - Type: refers to type of jewelry such as ring, bracelet, etc.
  - Material
  - Gemstone
  - Description
  - Price
  - Images
    - Images will only be in PNG format with a maximum size of 3MB each
  - Size
  - Created\_at
- Customized product
  - Customized products are products that have options for the general user to change the way the product appears.
  - Attributes:
    - ID
    - Type
    - Design
    - Material
    - Gemstone
    - Packaging
    - Size
    - Created\_at
- Cart
  - Cart is similar to a shopping cart where the user will be able to add one or more products for purchase.
  - Attributes:
    - ID
    - User ID
    - Product ID
- Order
  - Order is referring to the user information and list of products within a single transaction. It is used to keep track of what products are purchased and by who.
  - Attributes:
    - ID

- Cart ID
  - Created\_at
- Review
  - Reviews are posts created by users who have purchased a product and would like to share their opinions about that specific product.
  - Attributes:
    - ID
    - Product ID
    - User ID
    - Description
    - Rating
    - Created\_at
- Payment
  - Payment is the card information used to purchase an item. This will be associated to only one user.
  - Attributes:
    - ID
    - User ID
    - Name
    - Billing address
    - Card number
    - Expiration date
    - Security code

## 2. Functional Requirements

### **Priority 1:**

1. User
  - 1.1. General user: Does not need to login/register.
    - 1.1.1. (1) A general user shall be able to have unrestricted access to the website and view product details from many devices.
    - 1.1.2. (1) A general user shall be able to purchase many products by adding them into their shopping cart and completing the checkout process.
    - 1.1.3. (1) A general user shall choose at most one type of jewelry per product customized.
    - 1.1.4. (1) A general user shall have the option to register one and only one account by providing account registration details through the account creation form.
    - 1.1.5. (1) A general user shall be able to make changes to the items added to the shopping cart.
    - 1.1.6. (1) A general user shall be able to search for specific products by entering relevant keywords or product names into the search bar.
    - 1.1.7. (1) A general user shall be able to filter products by applying many filters to narrow the displayed products based on their preference.
    - 1.1.8. (1) A general user shall choose at most one design per product customized.
    - 1.1.9. (1) A general user shall choose at most one metal per product customized.
    - 1.1.10. (1) A general user shall choose at most one gem stone per product customized.

- 1.1.11. (1) A general user shall choose at most one size per product customized.
  - 1.1.12. (1) A general user shall choose at most one engraving per product customized.
  - 1.1.13. (1) A general user shall choose at most one packaging per product customized.
  - 1.1.14. (1) A general user shall choose to make a customized product or purchase a normal product.
- 1.2. Approved user: Needs to login/register.
    - 1.2.1. (1) An approved user shall be able to log into the system using their approved credentials that will verify user identity.
    - 1.2.2. (1) An approved user shall be able to log out from the system, which removes their current session from their account data.
2. Employee: Needs to login
    - 2.1. (1) An Employee shall be able to make changes to product details by modifying product descriptions, price and images.
    - 2.2. (1) An Employee shall be able to create and post many new products into the system.
    - 2.3. (1) An Employee shall be able to remove many products from the system allowing data of the product to be removed.
3. Account:
    - 3.1. (1) An account shall be owned by one and only one user per email provided during creation of account.
4. Products
    - 4.1. (1) The system shall be able to display many products.
    - 4.2. (1) A product shall have a unique identifier to accurately track the product's information.

- 4.3. (1) A product shall have only one main image to be displayed on the catalog page.
  - 4.4. (1) A product shall have at least one price.
  - 4.5. (1) A product shall be able to be added to one and only one cart.
  - 4.6. (1) A product shall be reviewed many times.
5. Shopping cart
    - 5.1. (1) A cart shall be associated to at most one general user.
    - 5.2. (1) A cart shall be able to contain many products.
    - 5.3. (1) A cart shall calculate the sum of at most one price per product placed in the cart.
  6. Review/Rating
    - 6.1. (1) A review shall have one title.
    - 6.2. (1) A review shall have at most one description.
    - 6.3. (1) A review shall be associated to at most one product.
    - 6.4. (1) A review shall be associated with at most one approved user.
    - 6.5. (1) A review shall have at most one rating.

## **Priority 2:**

1. User
  - 1.1. General user: Does not need to login/register.
    - 1.1.1. (2) A general user shall have a tracking id provided once their order has been completed which allows them to check the shipment status with the postal service.
    - 1.1.2. (2) A general user shall be able to add many items into their shopping cart for purchase at a later date while being able to continue shopping.

- 1.1.3. (2) A general user shall be able to track the status of their placed orders using an order ID provided through their order confirmation page or email.
- 1.2. Approved user: Needs to login/register.
  - 1.2.1. (2) An approved user shall be able to provide feedback for products purchased by them through a star rating and text based reply.
  - 1.2.2. (2) An approved user shall be able to manage shipping address(es) by editing, adding or deleting shipping addresses.
  - 1.2.3. (2) An approved user shall be able to manage their payment methods by editing, adding and deleting payment options from their account.
  - 1.2.4. (1) An Employee shall be able to make changes to product details by modifying product images.
  - 1.2.5. (1) An approved user shall be able to log into the system which will grant access to save customizations and retrieve these customizations.
  - 1.2.6. (1) An approved user shall be able to edit customizations that have been previously saved.
  - 1.2.7. (1) An approved user shall be able to view current/past orders through the system displaying order history along with relevant information such as dates, items and price.
  - 1.2.8. (1) An approved user shall be able to delete the account after confirming deletion through a prompt, allowing removal of their profile and data from the system.
2. Employee: Needs to login
  - 2.1. (2) An Employee shall be able to track sales on each product in the system.

- 2.2. (2) An Employee shall have access to store transactions that include user information and order details.
  - 2.3. (2) An Employee shall be able to manage product inventory allowing adjustment of stock levels.
3. Account
  4. Products
    - 4.1. (2) A product shall have one or multiple images associated with it.
    - 4.2. (2) A product shall have one and only one description.
    - 4.3. (2) A product shall be able to be compared with at most one product.
    - 4.4. (1) A product shall have a quantity selection in respect to the amount of product available in the database.
    - 4.5. (1) A product shall have zero or many stock availability.
    - 4.6. (1) A product shall be ordered many times.
    - 4.7. (1) A product shall be ordered by many users.
  5. Shopping cart
    - 5.1. (2) A cart shall be able to be saved for later by at most one approved user.
  6. Order
    - 6.1. (2) An order shall have at most one order status.
    - 6.2. (2) An order shall be able to be returned at most once.
    - 6.3. (2) An order shall be able to be canceled at most once.
    - 6.4. (1) An order shall be associated to at most one general user.
    - 6.5. (1) An order shall have at most one unique order number.
    - 6.6. (1) An order shall contain at least one product.
    - 6.7. (1) An order shall have at most one total price.
    - 6.8. (1) An order shall include at most one shipping information.
    - 6.9. (1) An order shall include at most one billing information

**Priority 3:**

6. Order

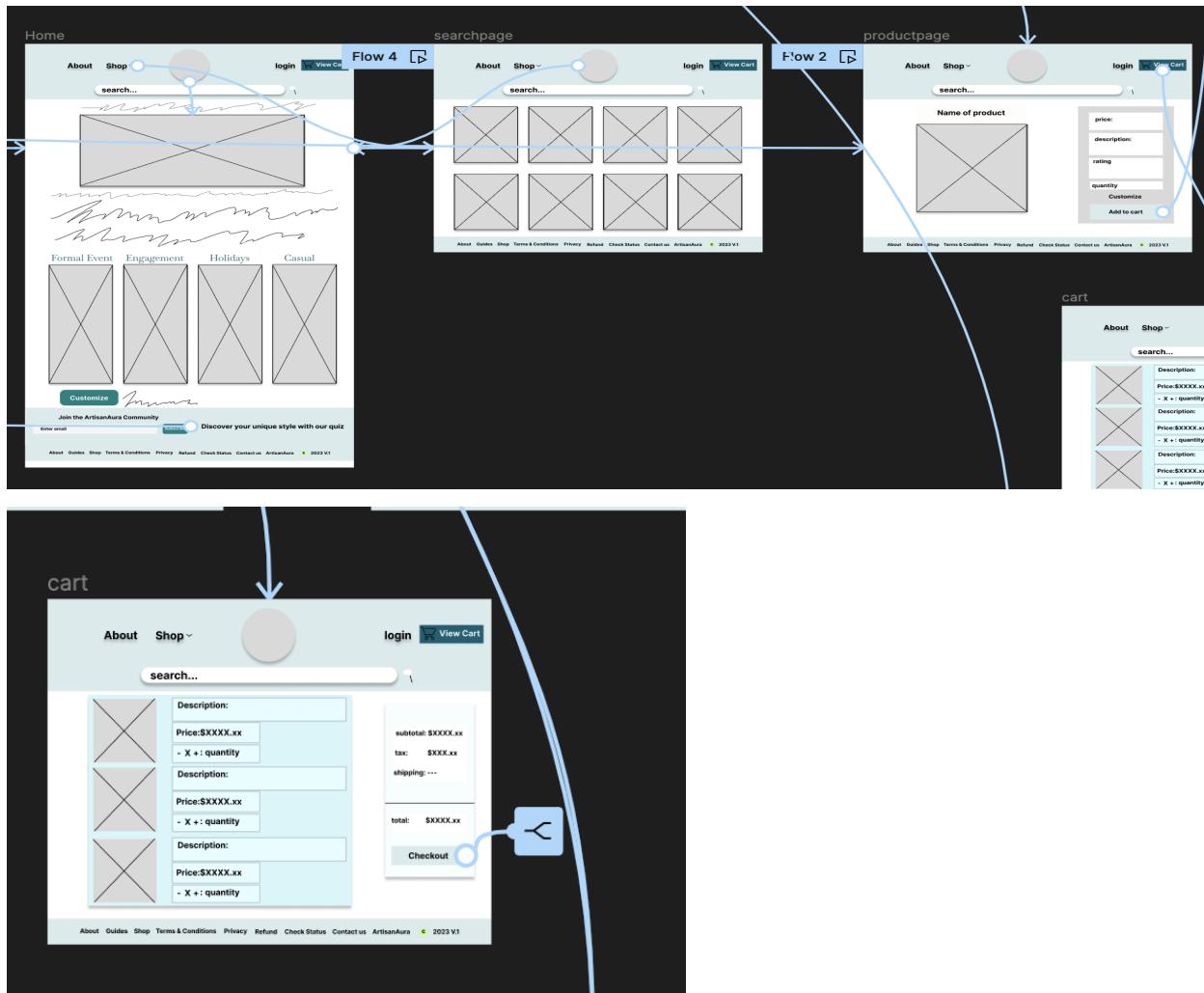
6.1. (3) An order shall include at most one shipment tracking details.

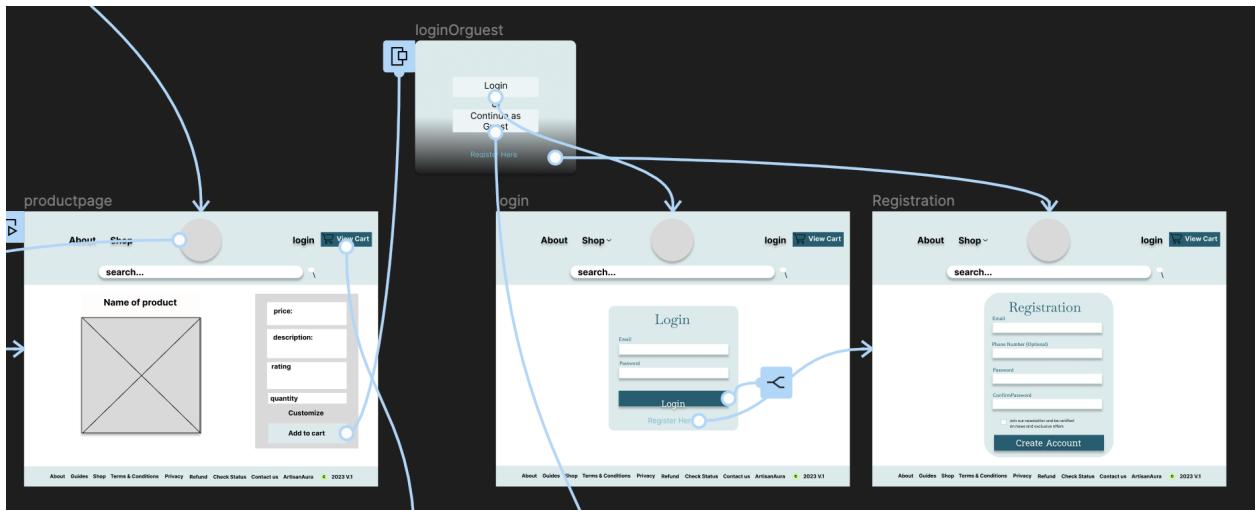
7. Payment

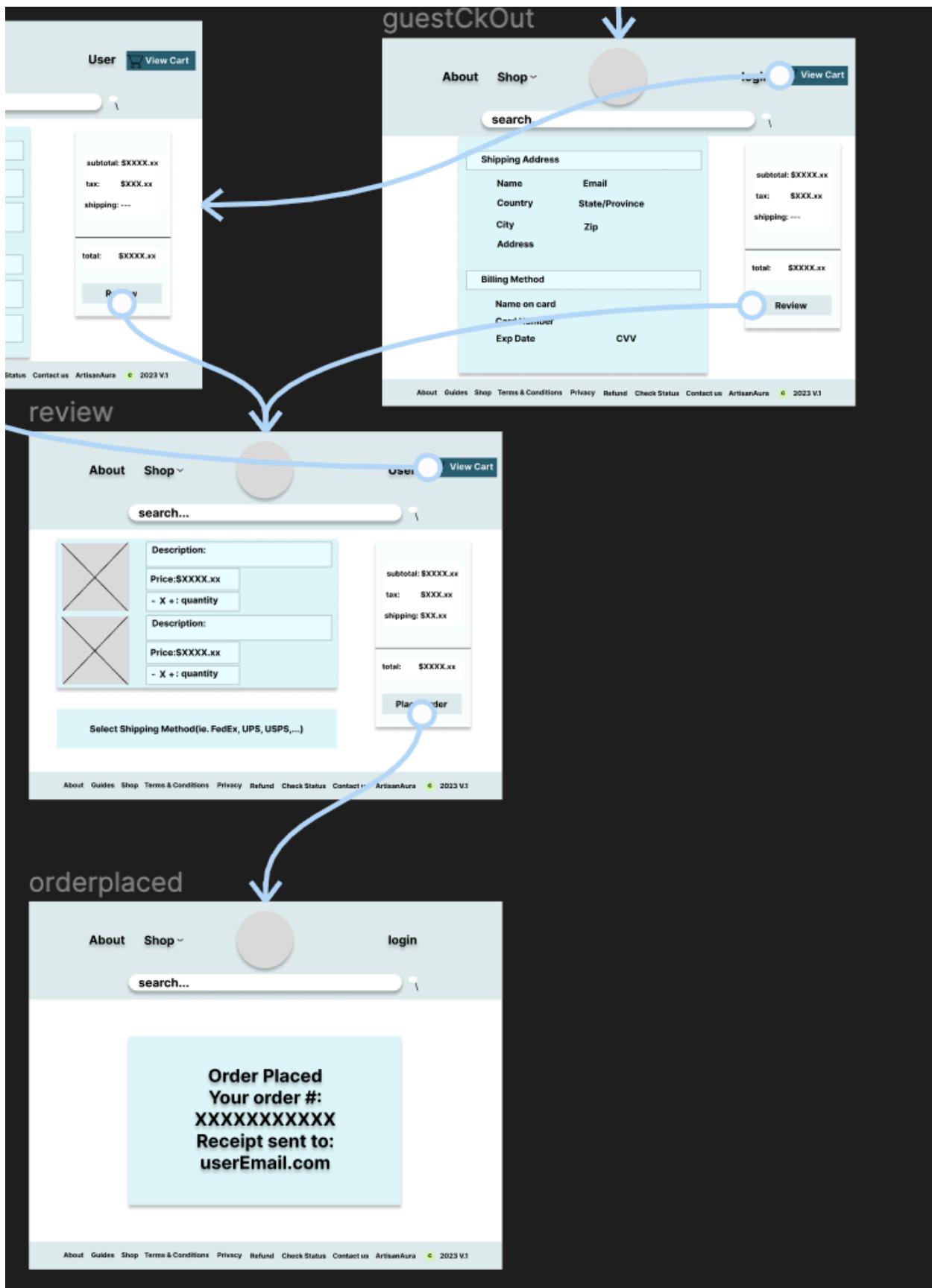
7.1. (3) A default payment method shall be associated to at most one approved user.

### 3. Wireframes Based on Mockups/Storyboards

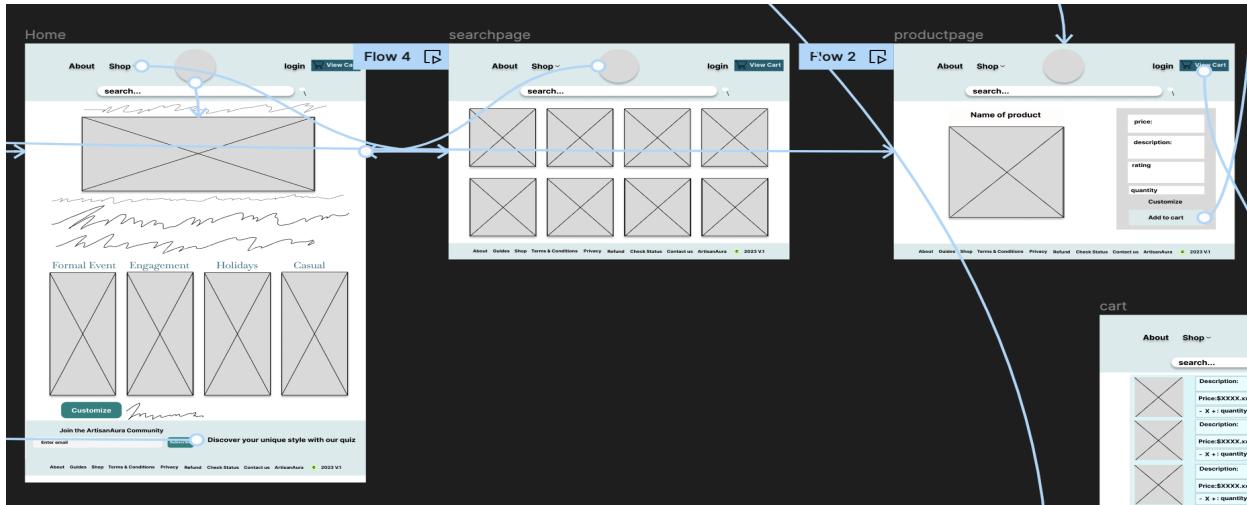
#### Guest purchase

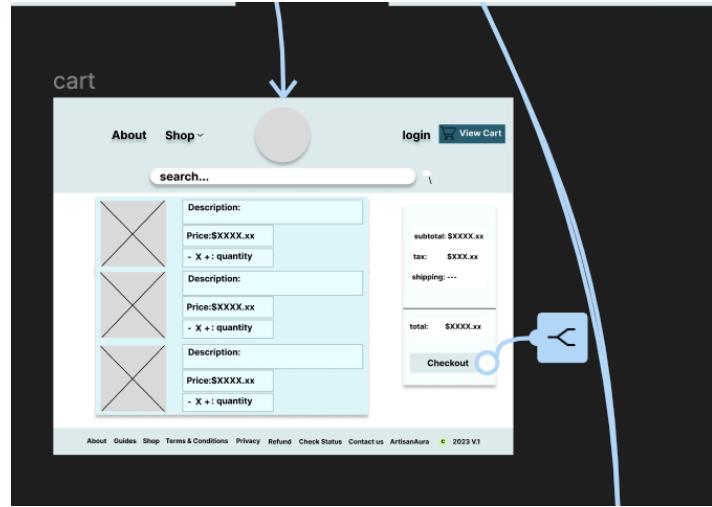


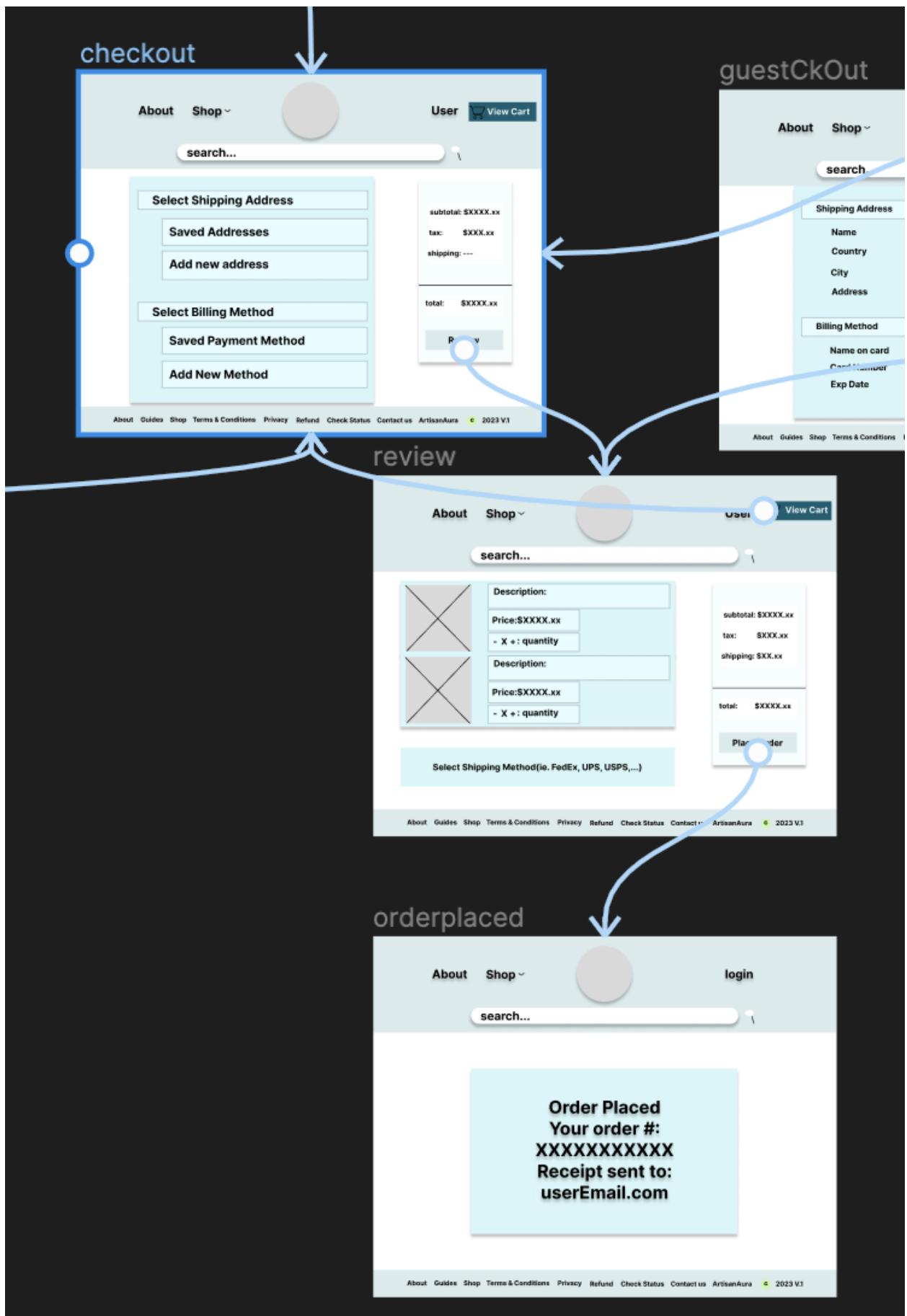




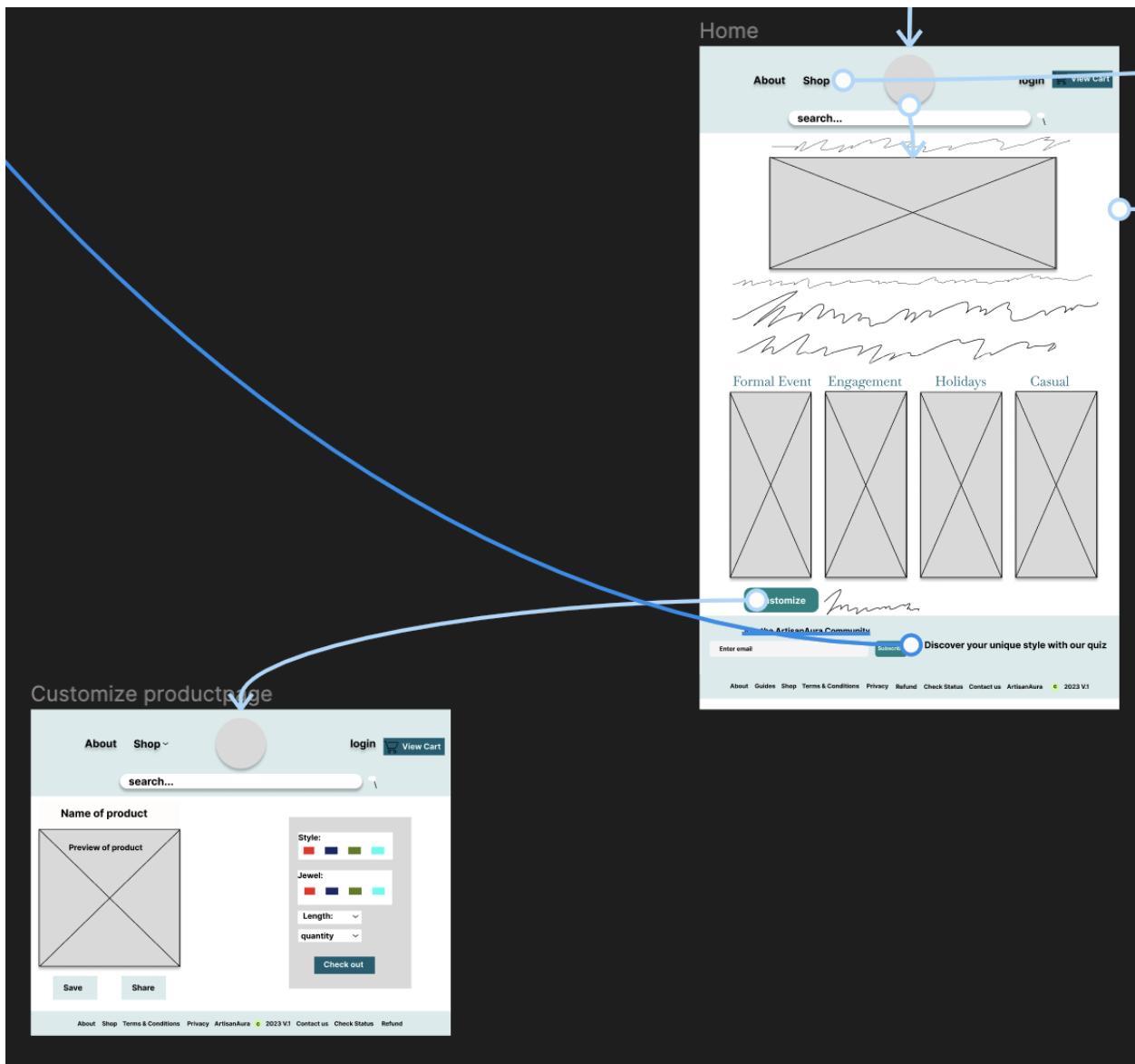
## Account Checkout

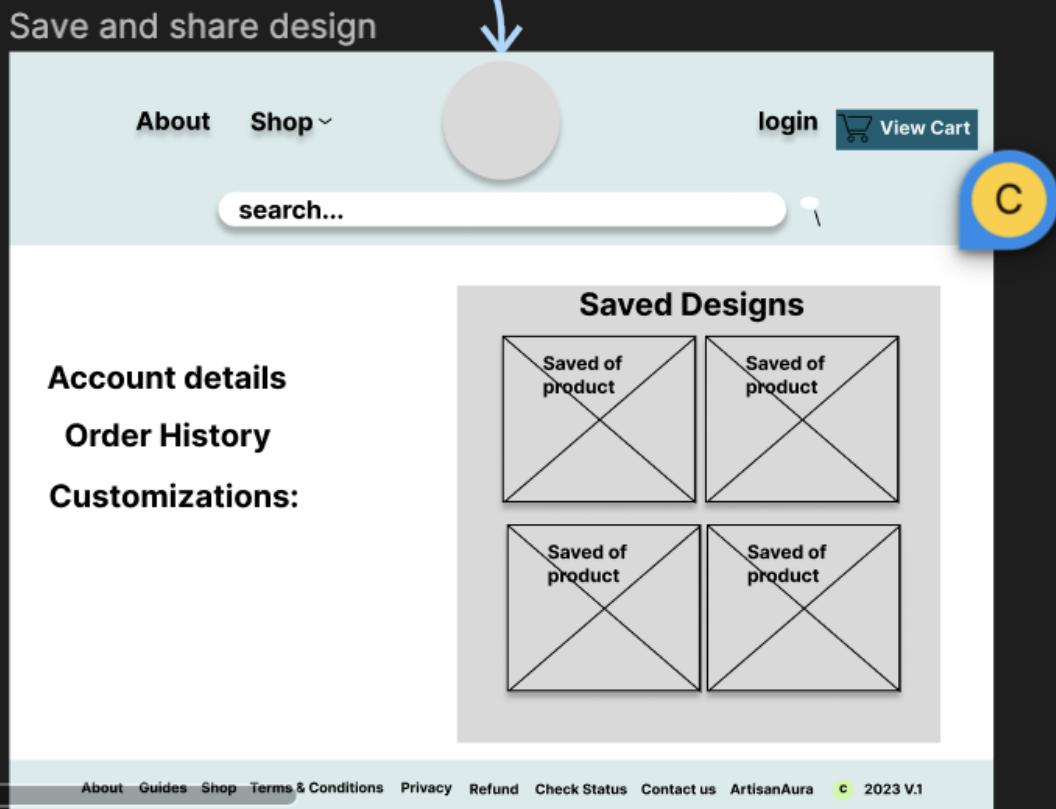
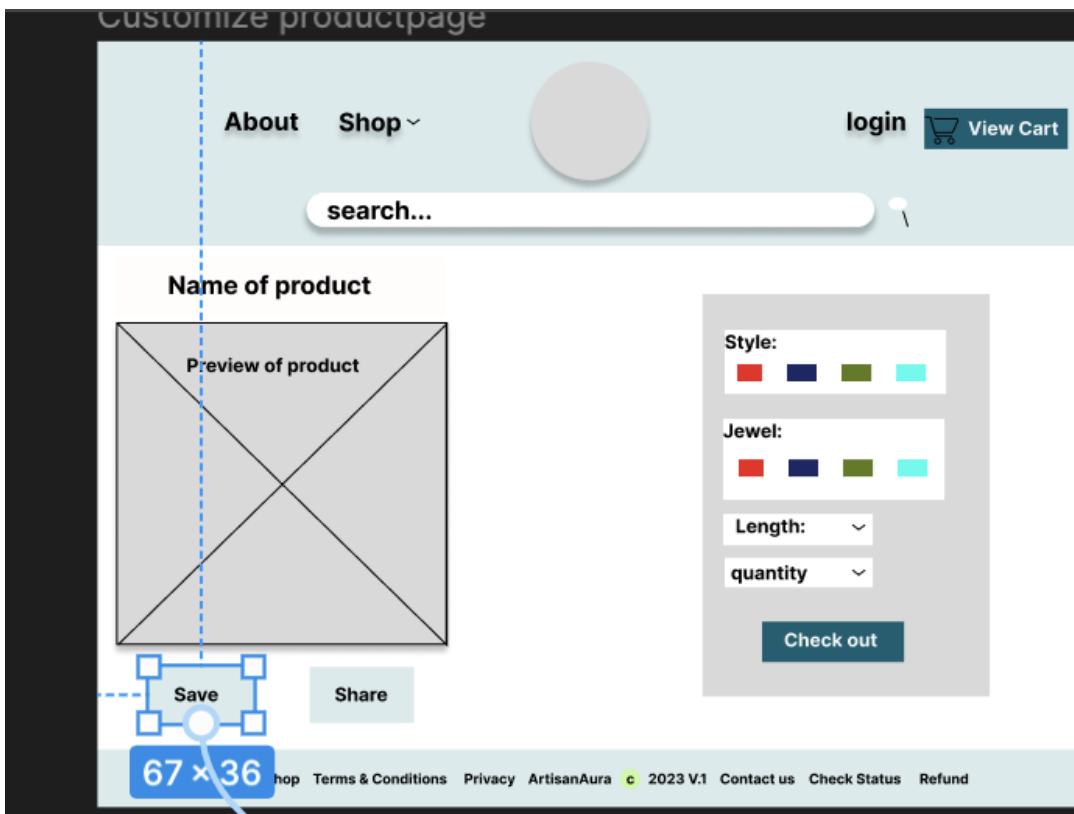




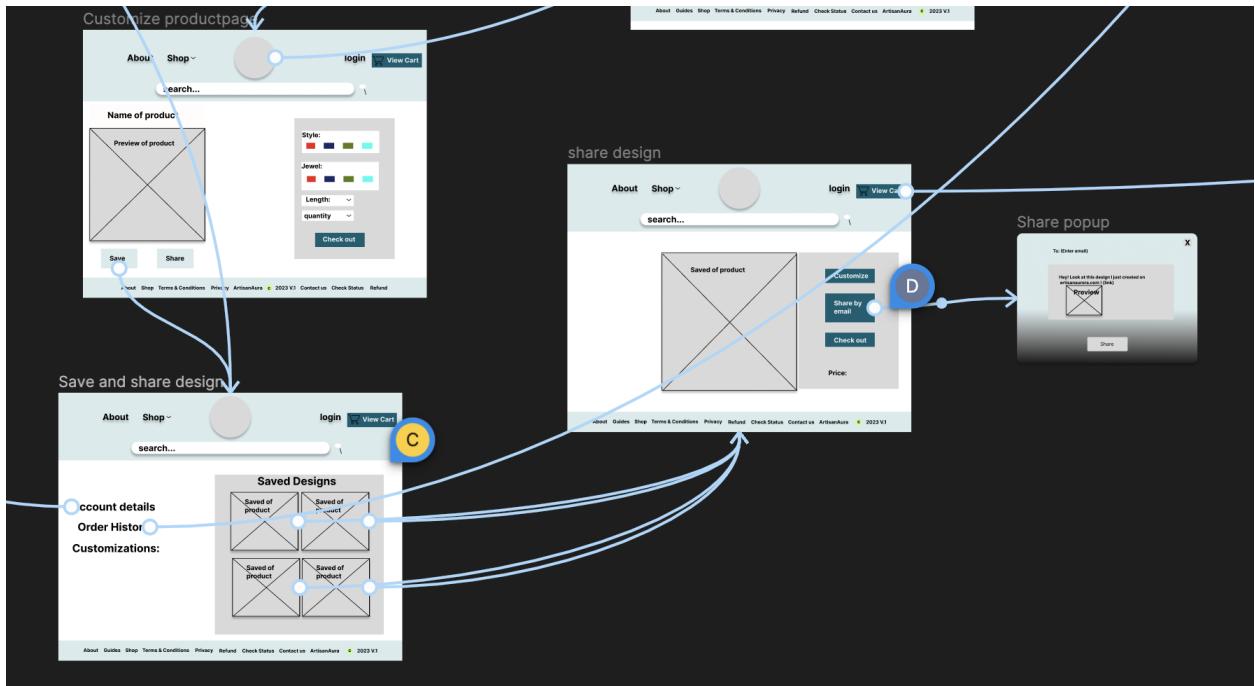


## Customize necklace/jewelry

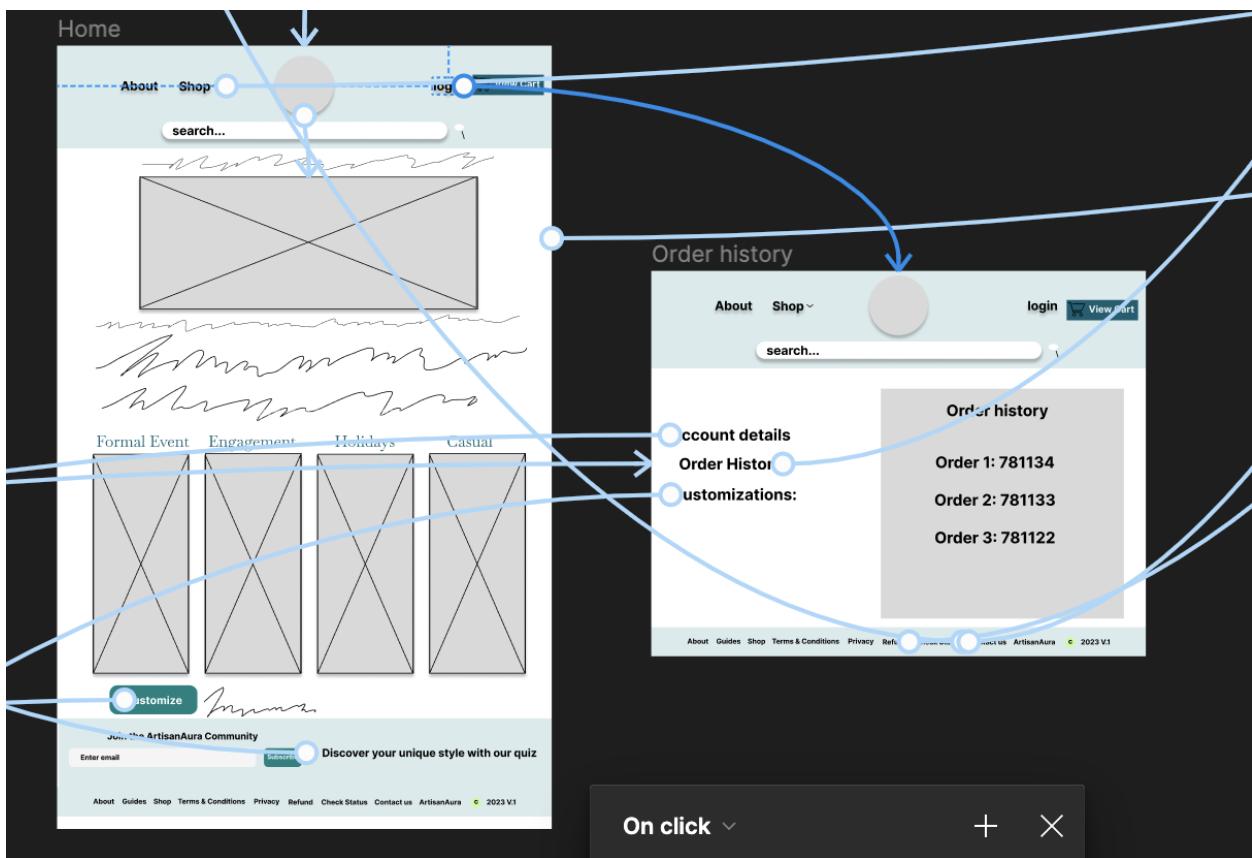




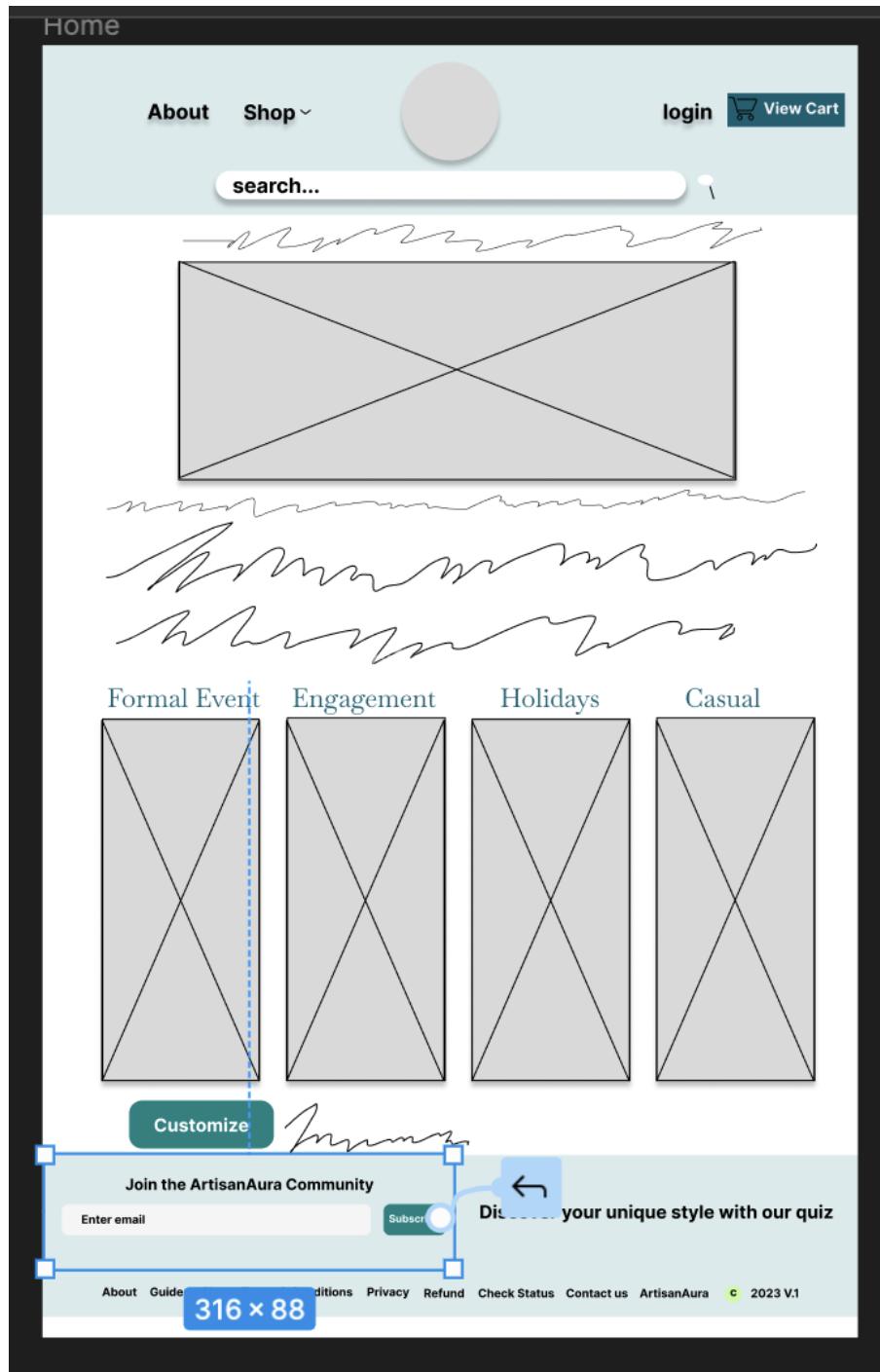
# Save and Share Designs



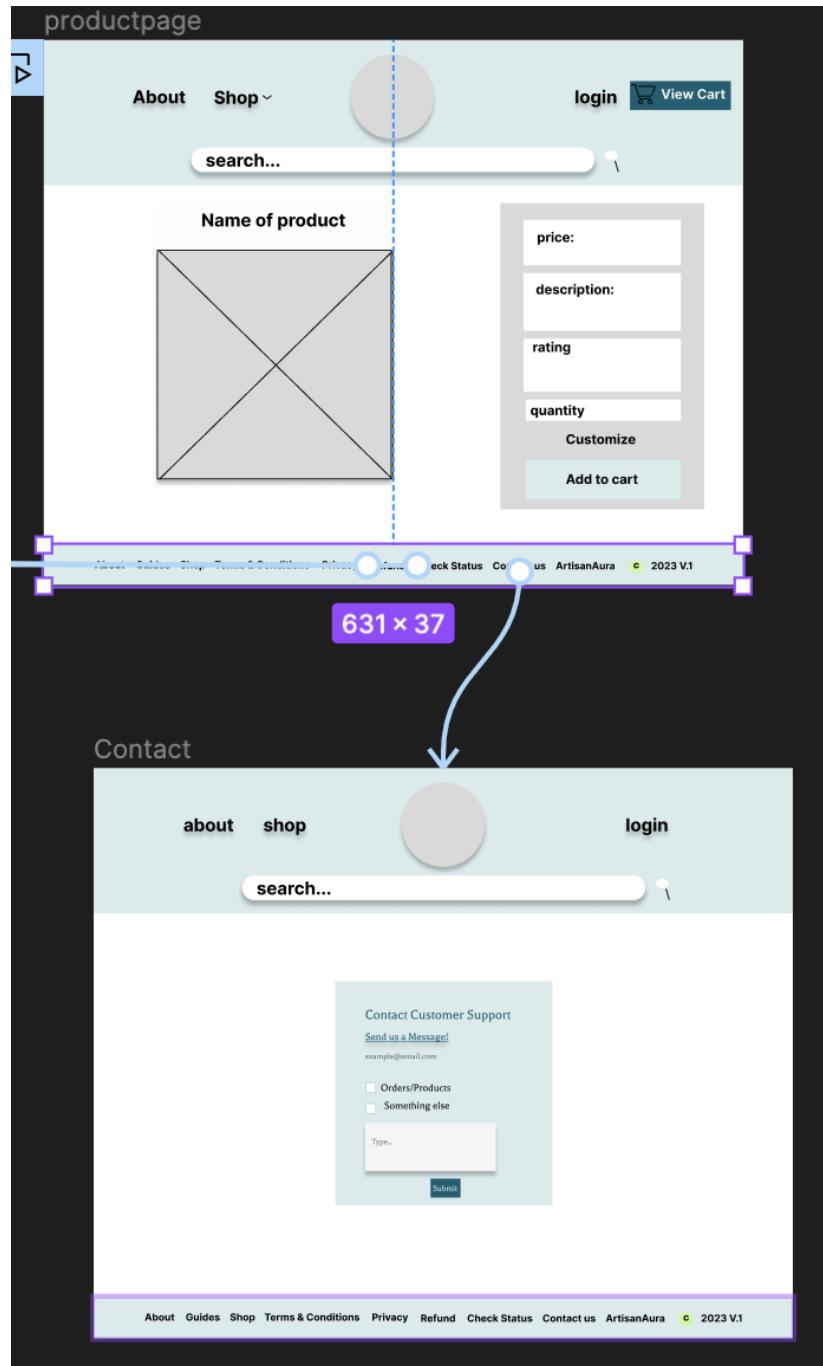
## Checking status of order



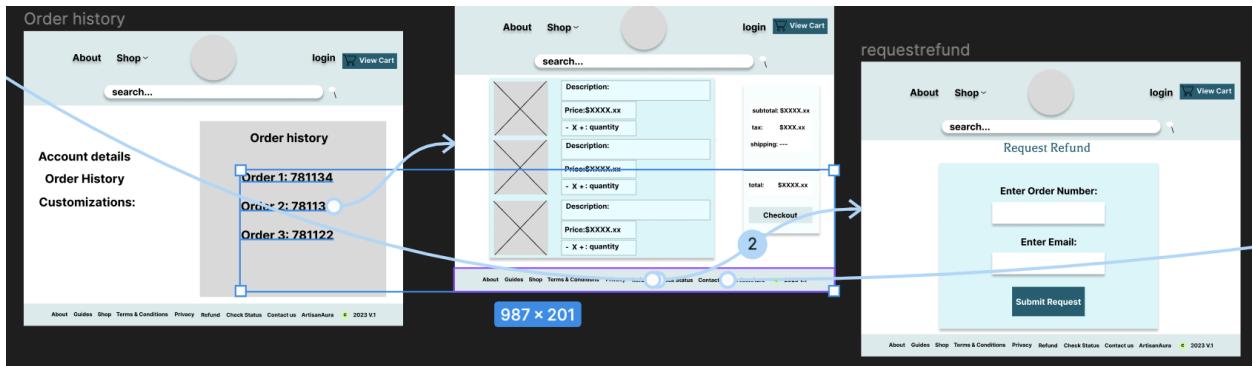
## Sign up for newsletter



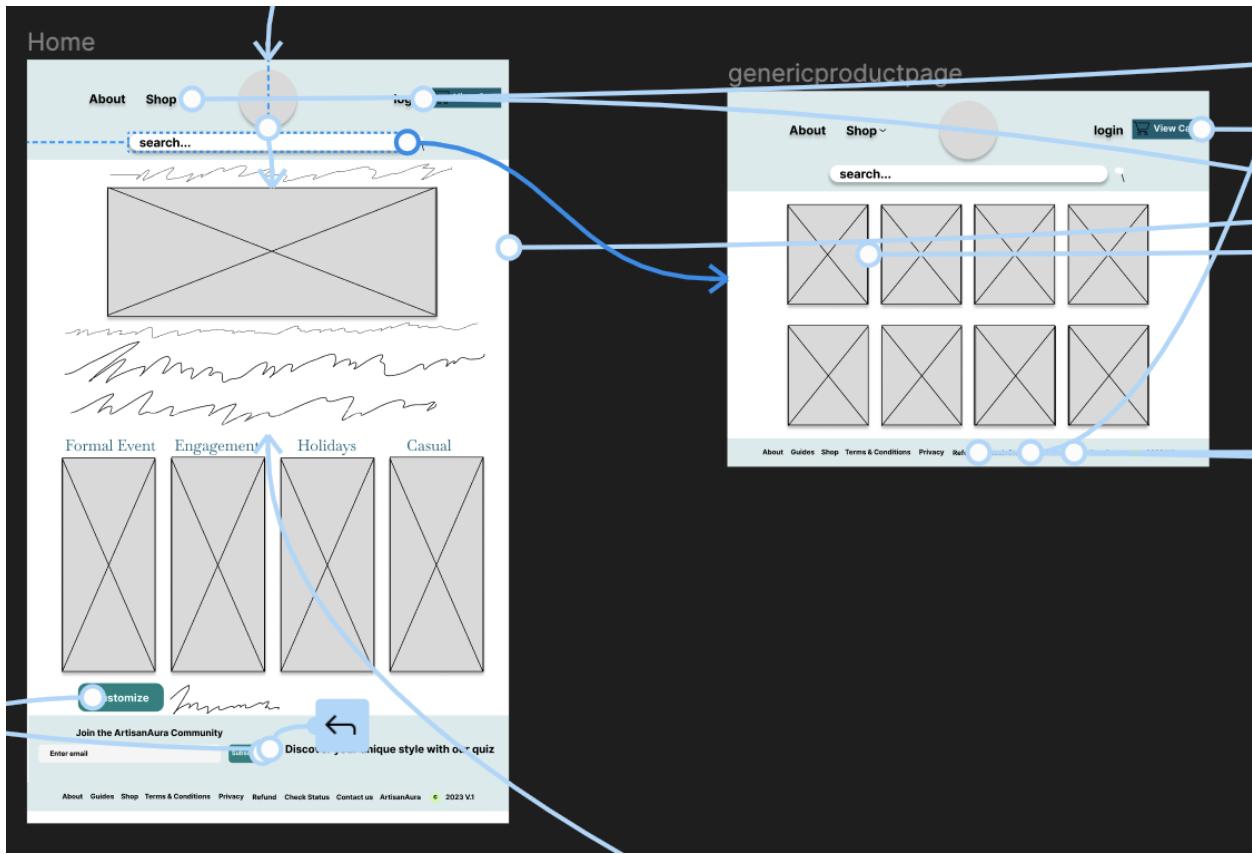
# Contacting Customer Support



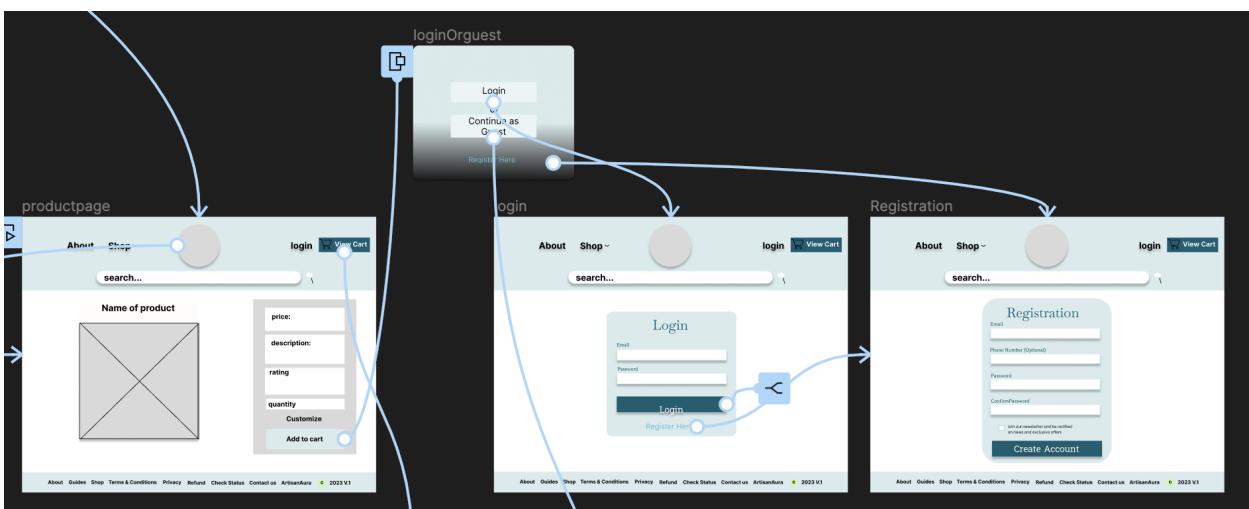
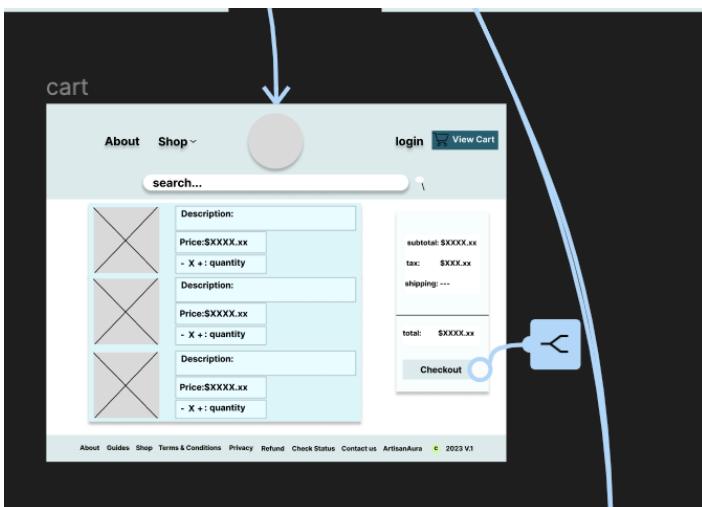
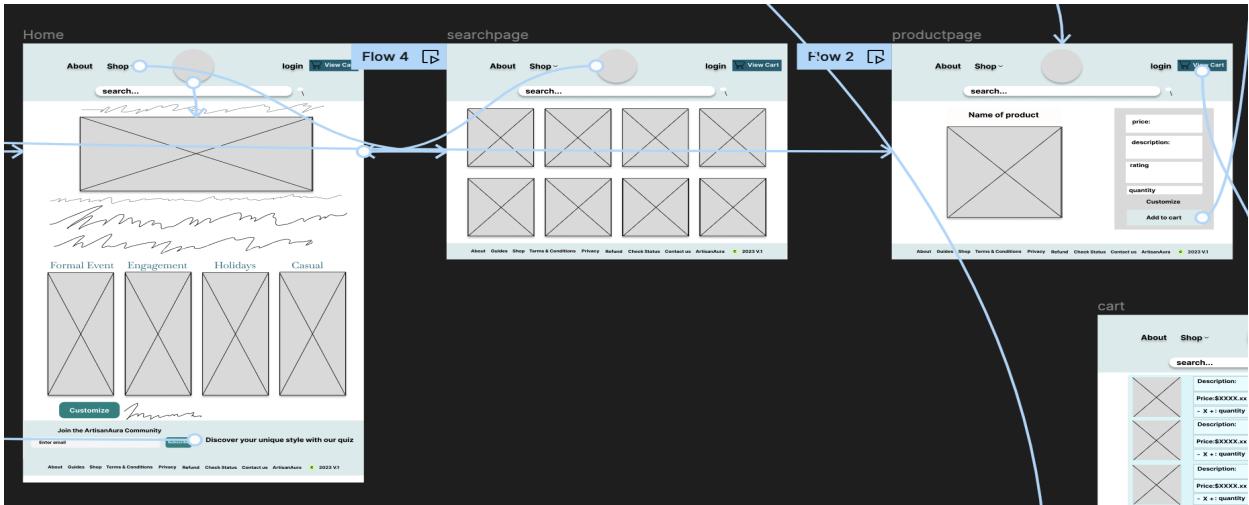
# Request Refund

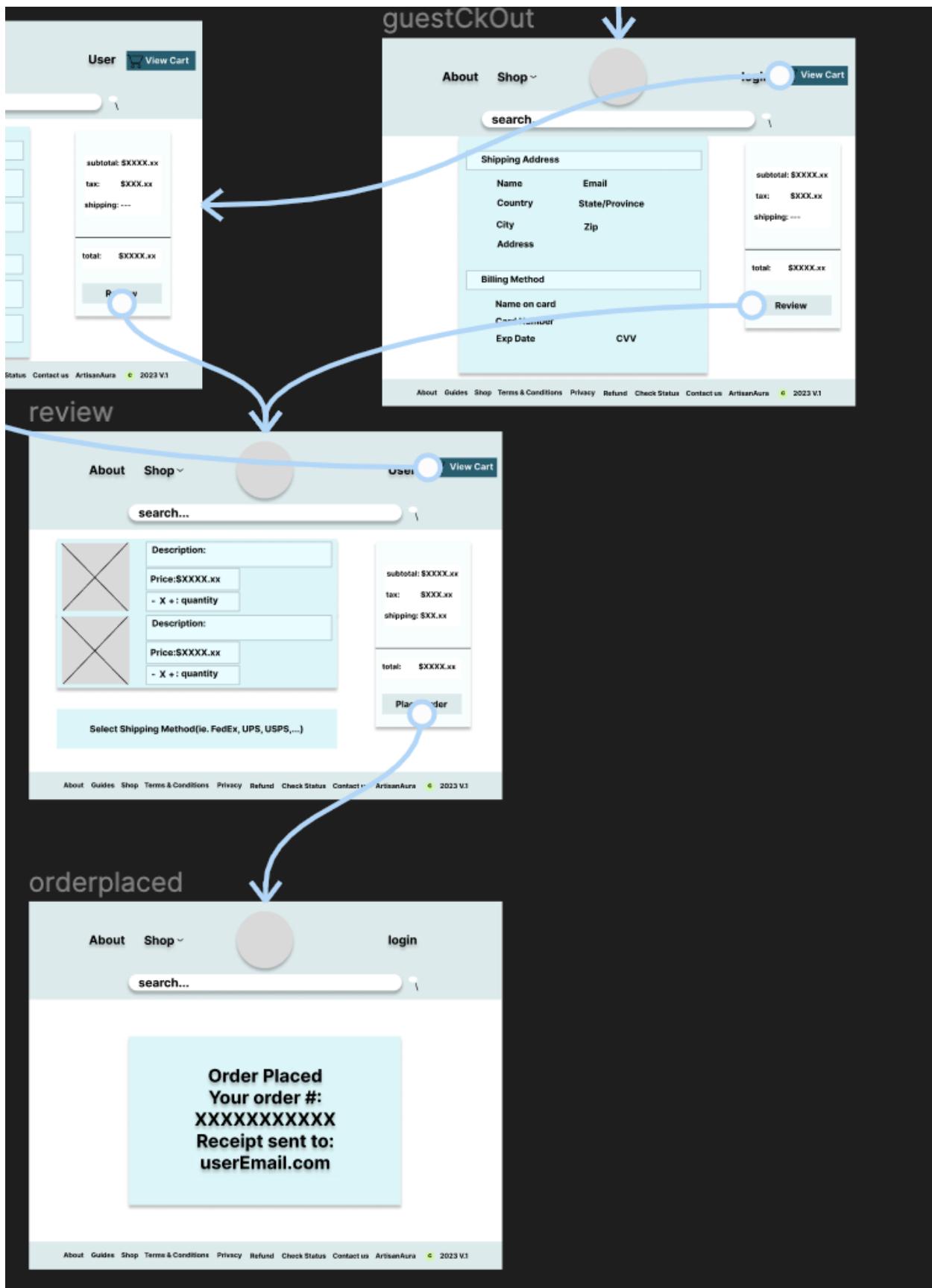


## Search for product

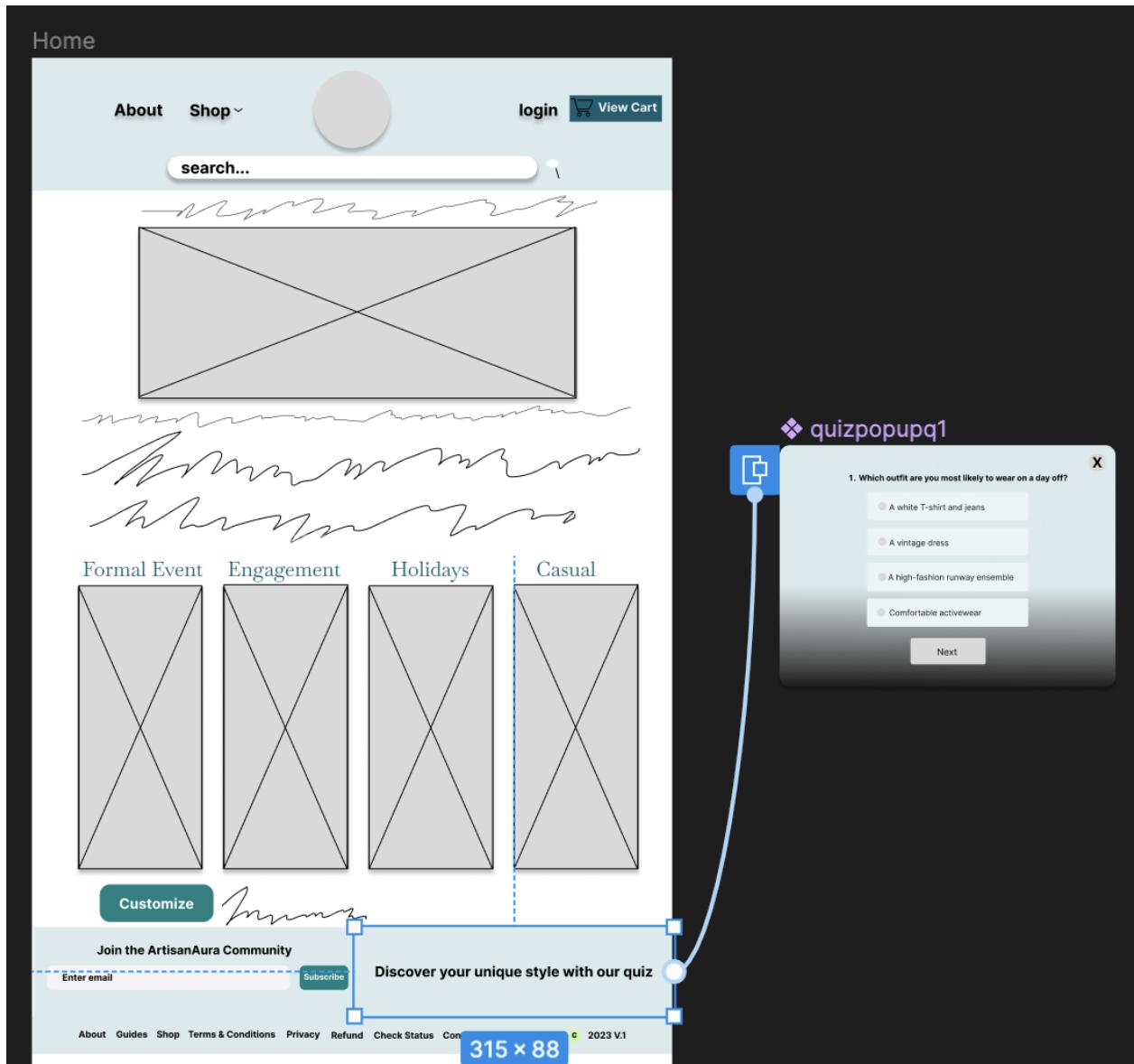


# International Shipping





# Jewelry Recommendation



quizpopupq1

1. Which outfit are you most likely to wear on a day off?

- A white T-shirt and jeans
- A vintage dress
- A high-fashion runway ensemble
- Comfortable activewear

Next

quizpopupq4

2. How would you describe your style?

- Minimalistic and comfortable
- Vintage with a touch of glamor
- Unique and avant-garde
- Sporty and casual

Next

quizpopupq4

3. What type of metal do you prefer in your jewelry?

- Silver
- Gold
- White Gold or Platinum
- No preference/I don't wear metal

Next

quizpopupq4

4. When it comes to jewelry, you:

- Prefer simple and subtle pieces
- Like items with a story or historic feel
- Love bold, statement pieces
- Opt for functional or symbolic pieces

Next

```

graph LR
    P1[quizpopupq1] --> P2[quizpopupq4]
    P2 --> P3[quizpopupq4]
    P3 --> P4[quizpopupq4]
  
```

quizpopupq4

4. When it comes to jewelry, you:

- Prefer simple and subtle pieces
- Like items with a story or historical feel
- Love bold, statement pieces
- Opt for functional or symbolic pieces

Next

quizpopupq6

5. Your favorite gemstone is:

- Diamond
- Ruby or Sapphire
- Uncommon or alternative gems
- I don't like gemstones

Next

quizpopupq6

6. Your preferred jewelry piece is:

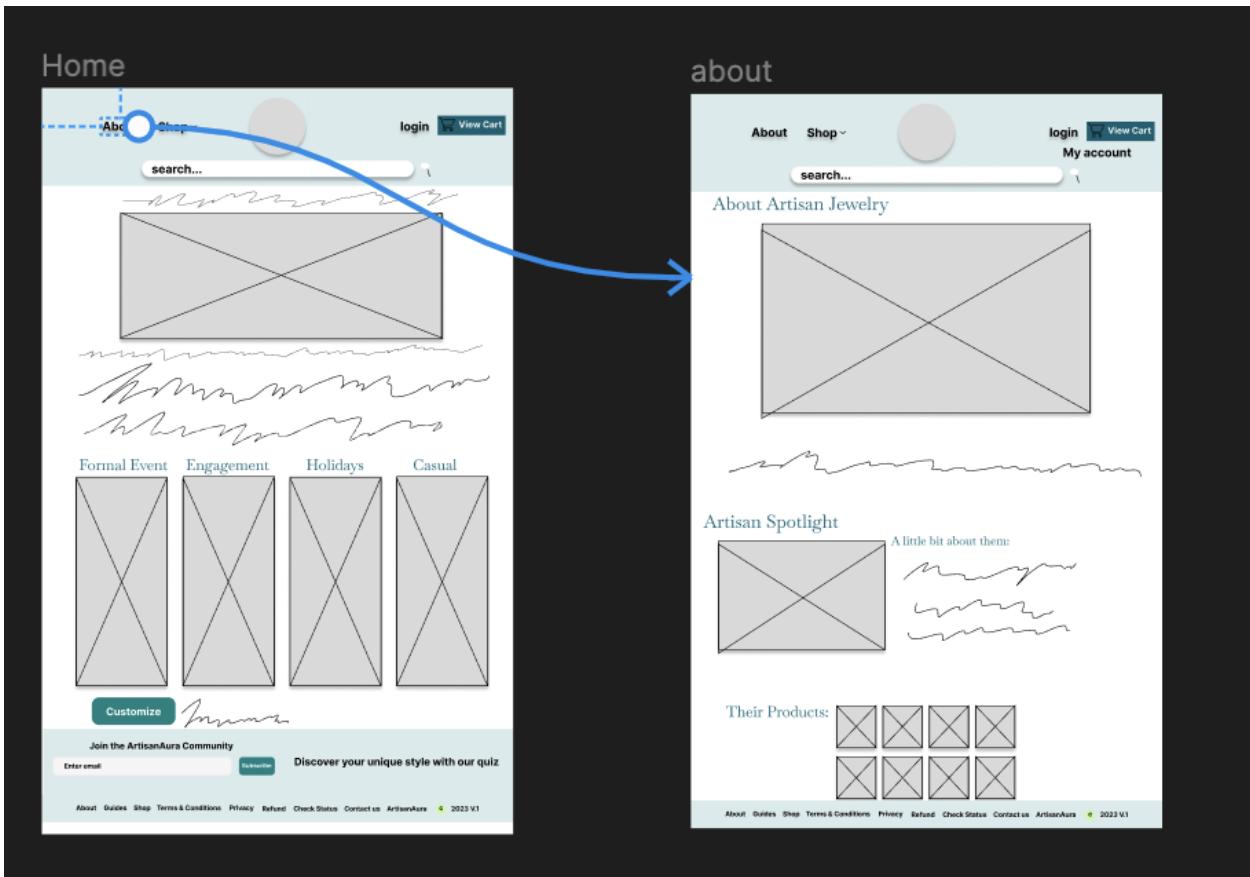
- A delicate necklace
- A cocktail ring
- A statement cuff
- A charm bracelet

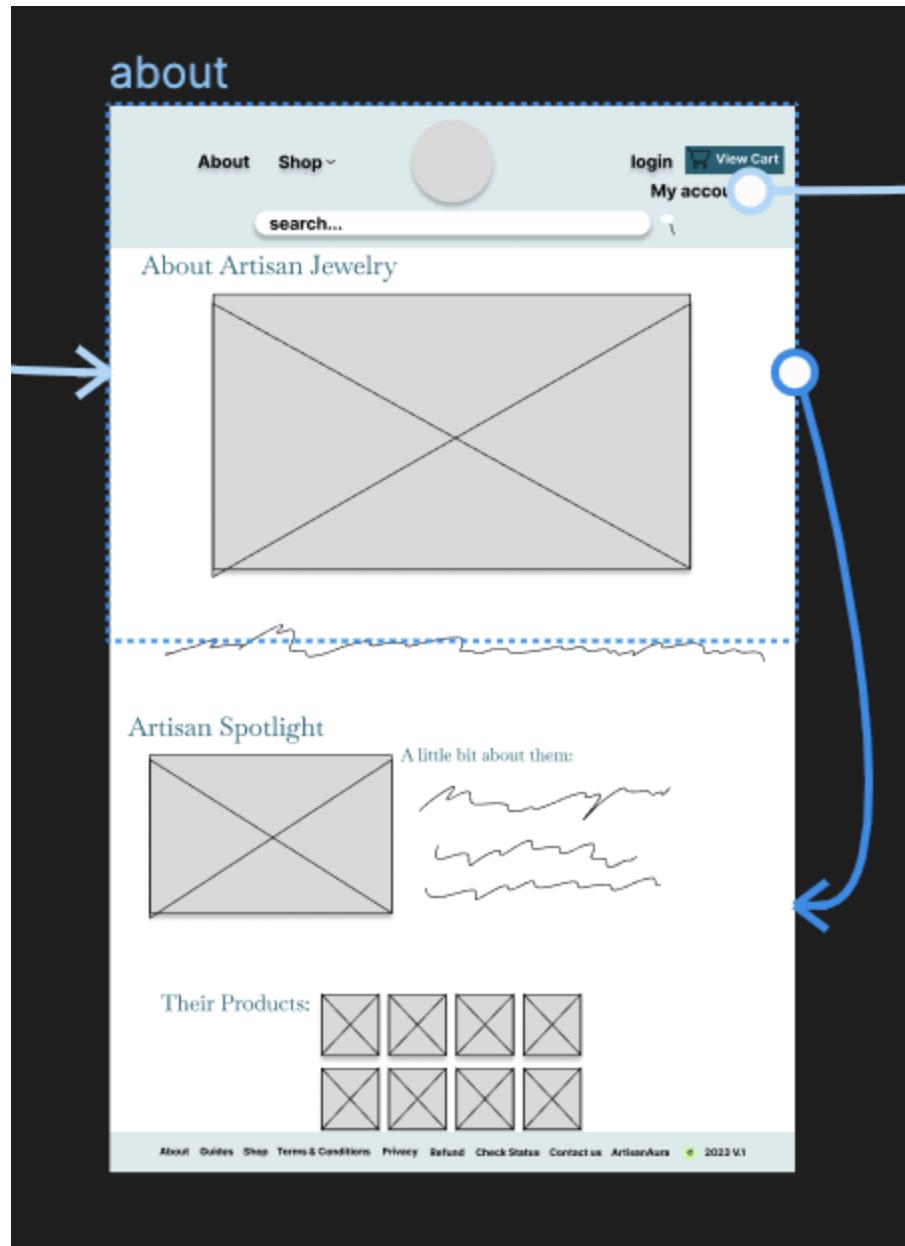
Submit

reccomendationsafterquiz

Products we think you might like..

# ARTISAN SPOTLIGHT





# SIZING GUIDE

productpage

About Shop  View Cart

search...

Name of product

price:  
description:  
rating  
quantity

Customize Add to cart

About  Shop Terms & Conditions Privacy Refund Check Status Contact us ArtisanAura © 2023 V.1

Size Guides

About shop  View Cart

search...

Guides

Necklace Guide

Maintenance Guide:

- Store jewelry in a clean, dry place.
- Avoid harsh chemicals.
- Use mild cleaners for regular maintenance.
- When unsure, take it off.

Ring

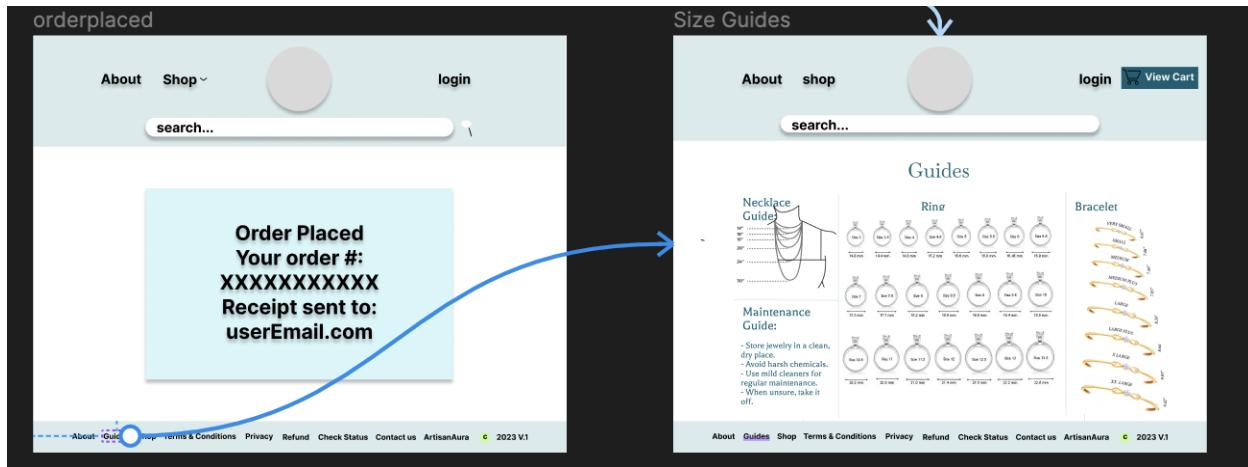
Size	Width (mm)
Size 1	14.2 mm
Size 2	14.4 mm
Size 3	14.6 mm
Size 4	14.8 mm
Size 5	15.0 mm
Size 6	15.3 mm
Size 7	15.6 mm
Size 8	15.9 mm
Size 9	16.2 mm
Size 10	16.5 mm
Size 11	16.8 mm
Size 12	17.1 mm
Size 13	17.4 mm
Size 14	17.7 mm
Size 15	18.0 mm
Size 16	18.3 mm
Size 17	18.6 mm
Size 18	18.9 mm
Size 19	19.2 mm
Size 20	19.5 mm
Size 21	19.8 mm
Size 22	20.1 mm
Size 23	20.4 mm
Size 24	20.7 mm
Size 25	21.0 mm
Size 26	21.3 mm
Size 27	21.6 mm
Size 28	21.9 mm
Size 29	22.2 mm
Size 30	22.5 mm

Bracelet

Size	Width (mm)
Very Small	6.5 mm
Small	7.0 mm
Medium	7.5 mm
Large	8.0 mm
Large Plus	8.5 mm
X Large	9.0 mm
XX Large	9.5 mm

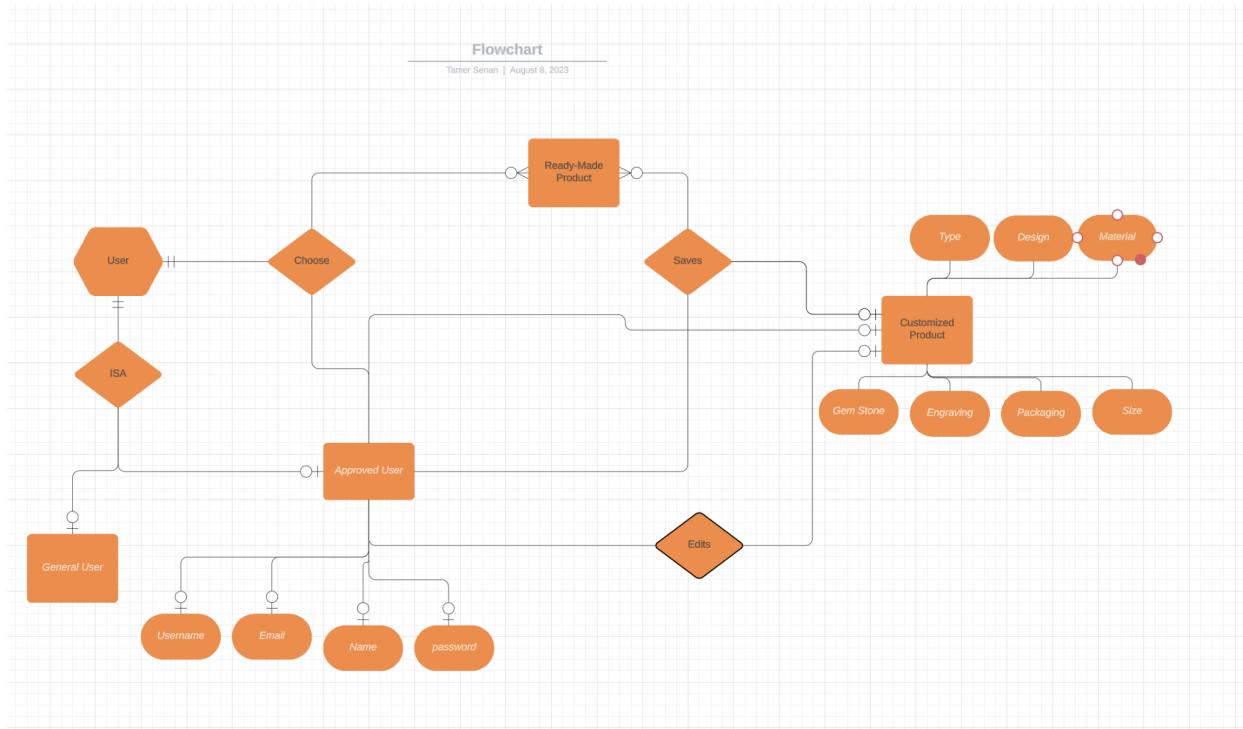
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# MAINTENANCE GUIDE

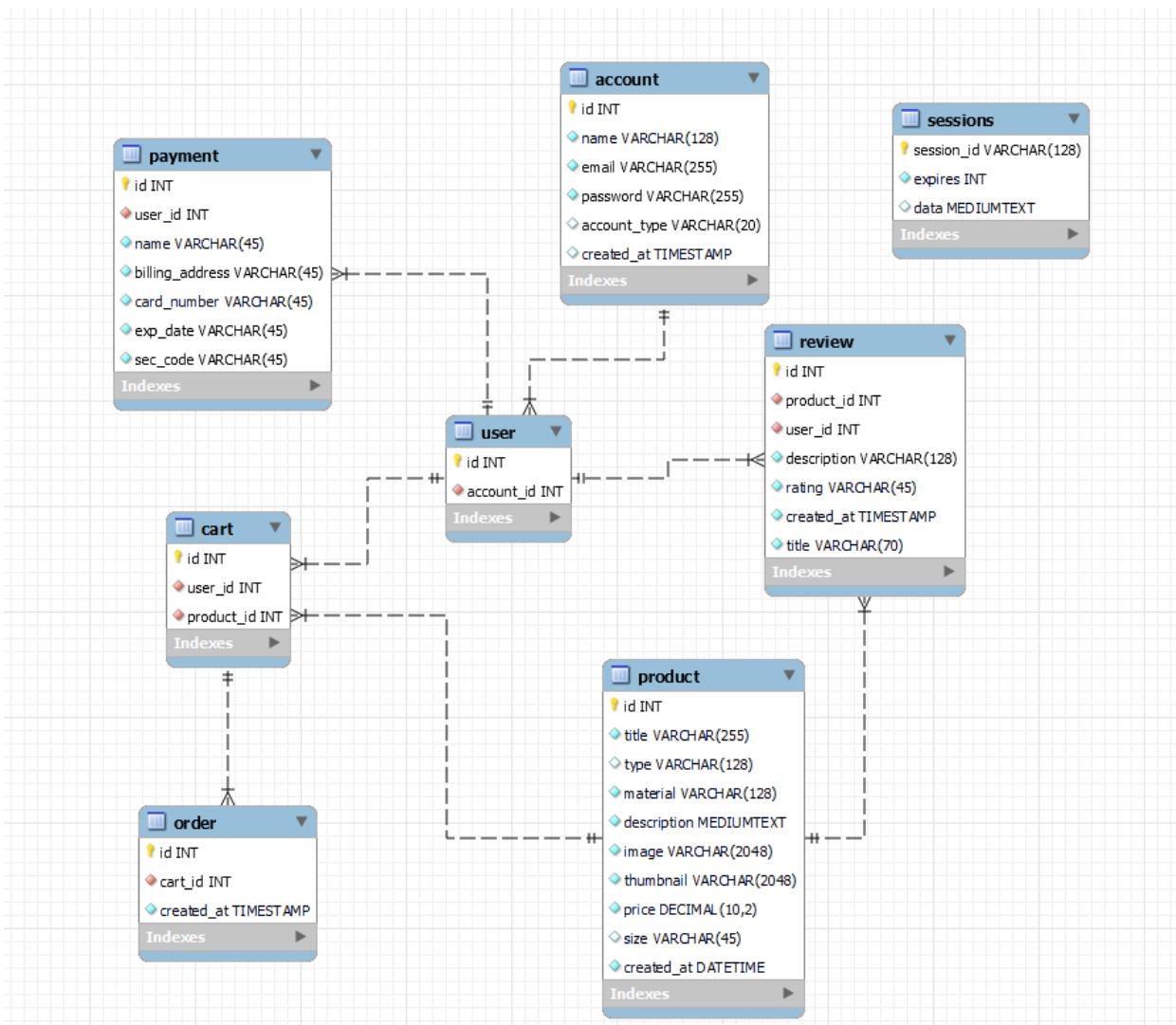


## 4. High level database architecture and organization

Entity Relationship Diagram ( ERD ):

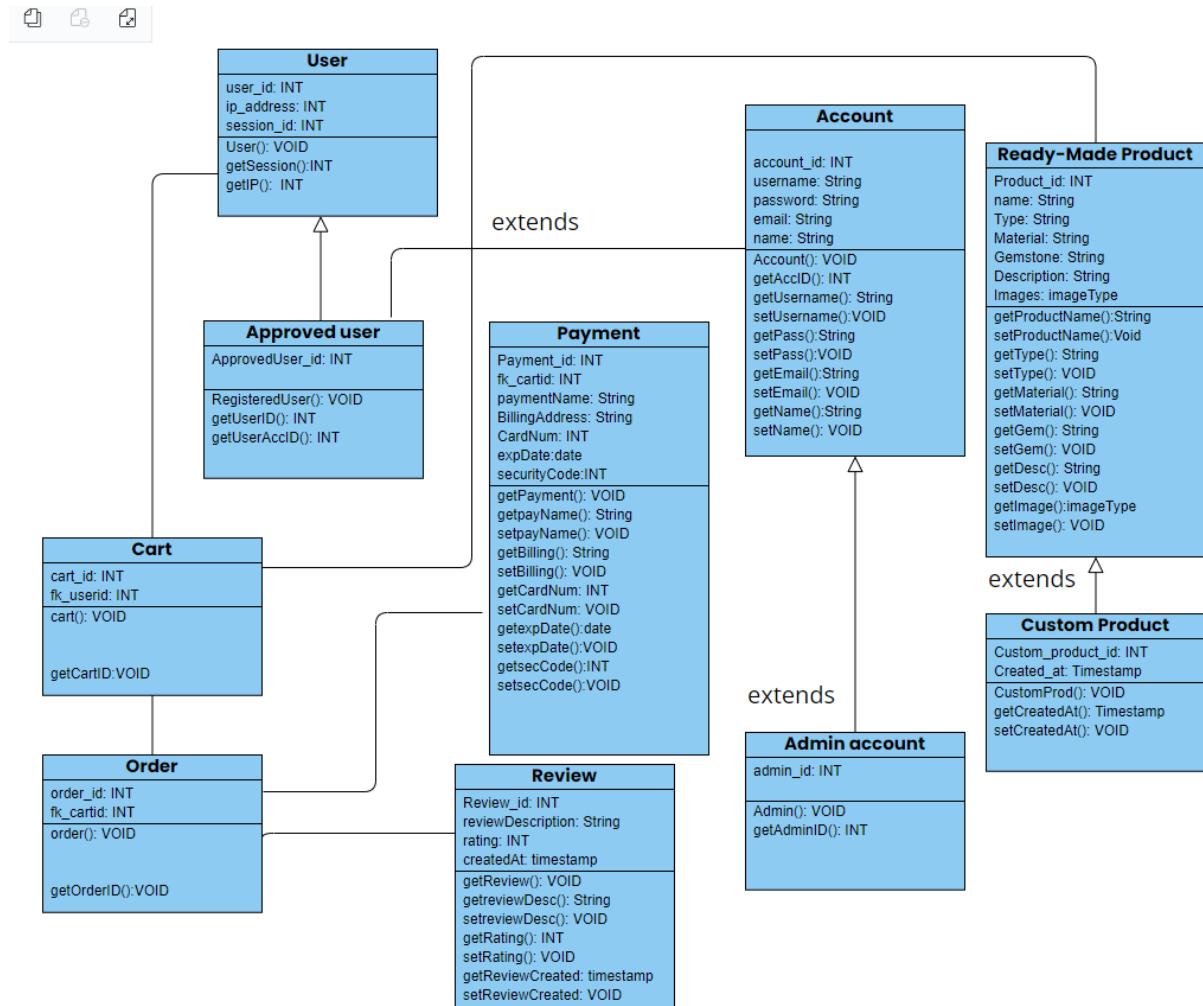


EER representing the data modeling of your database:

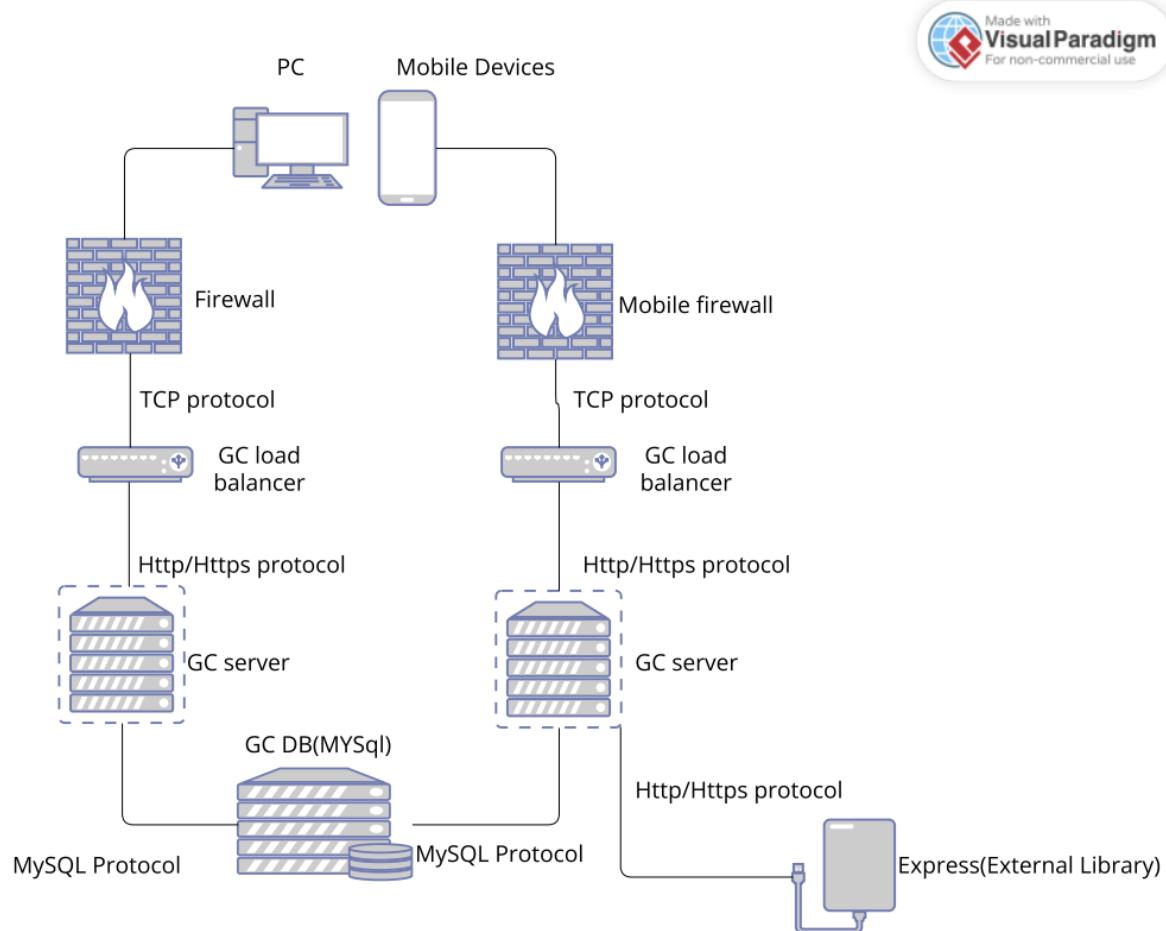


## 5. High Level Diagrams

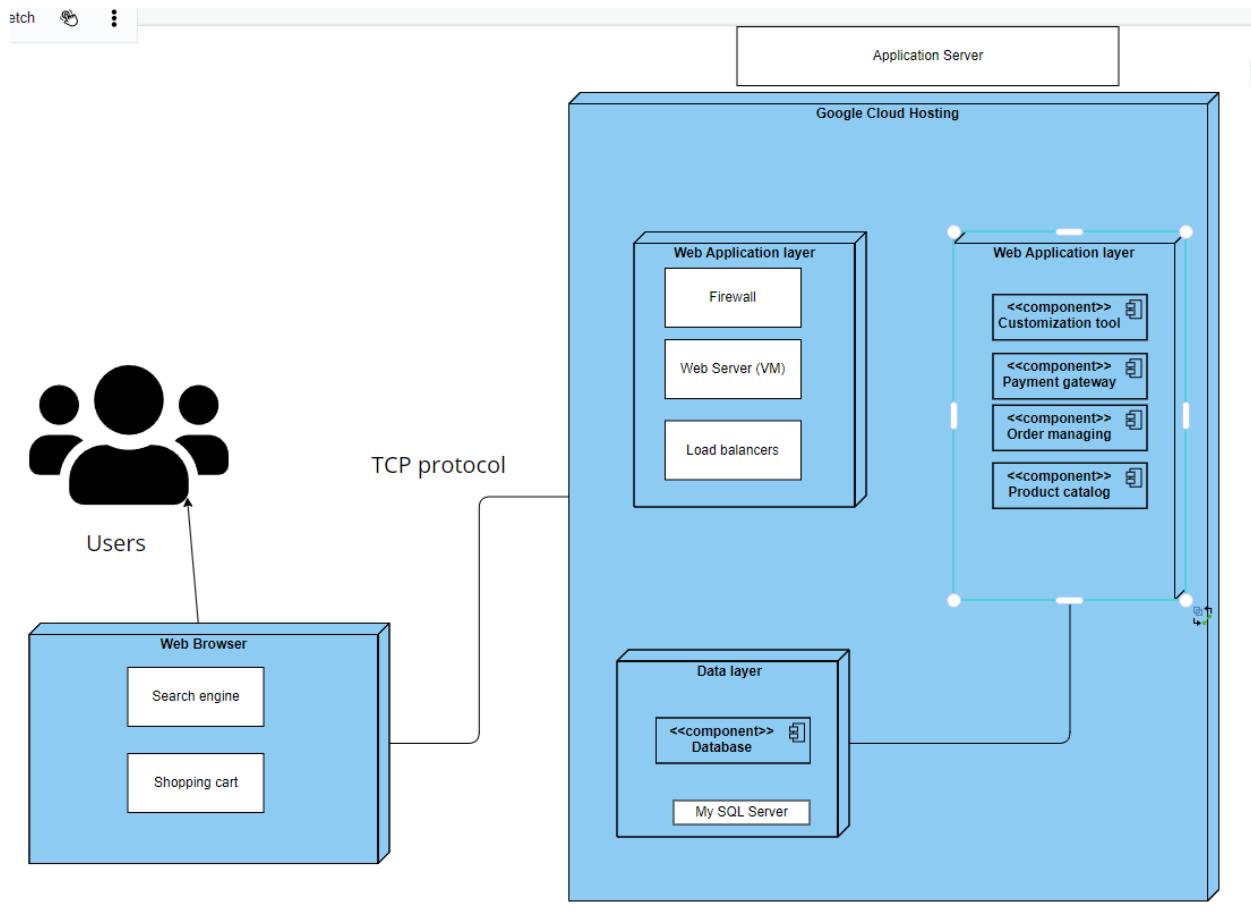
UML Diagram:



## Application Networks Diagram:



## Deployment Diagram:



## 6. M3 Meeting Feedback

- Hover over links e.g. underline or highlight
  - Hover effect has been implemented on the website.
- Search bar is too big lengthwise
  - Search bar has been shortened.
- Add no product found recommendation at top of page
  - Message moved to the top of the page.
- Make sure pictures are all same size in grid
  - Issue has been corrected by adjusting the grid box header size. The pictures were the same size but the variation in text length affected the grid box sizes.
- Header images are too big
  - Image sizes have been decreased, some images were moved to lower on page or removed.
- Add home page hook to top of page or over top of header image
  - Hook text moved to the top of the page.
- Search function needs to work for phrases and “word + word”
  - Search function expanded to include diverse queries.
- Need to add product to cart and do check out
  - Add product functions and shopping cart functions are being developed.
- All buttons need to link somewhere
  - Button links are all active except for on the customization page which is being developed.

## 7. List of Contributions in this milestone (detailed including contributions to the horizontal prototype)

- Tamer
  - Update GitHub branches; Review and update functional requirements; Create wireframes for all use cases with Figma: customer support, joining newsletter, jewelry recommendation, artisan spotlight, jewelry care and maintenance, create new account; Apply UX/UI from wireframes to website pages: jewelry care and maintenance guides, jewelry sizing guide, request refund
- Denean
  - Create EER diagram; Review ERD and update as needed; Create “add product” page; Database testing for “add product” form to upload images and descriptions to Google Cloud Storage Bucket then show product descriptions from database and images from Google Cloud in web page search results; Review and update data definitions; Review and update functional requirements; Update CSS, create notification, and add password verification for sign-in and registration; Create user profile page; Apply UX/UI from wireframes to website pages: product page, contact customer support, order status, save designs, profile page, create an account, shopping cart
- Daniel
  - Revise M2 document; Review UML diagram, application network diagram, deployment diagram and update as needed; Review and update functional requirements; Create and edit wireframes for all use cases with Figma; Apply UX/UI from wireframes to website pages: share design and

customize product. Created example single product test and custom product test pages.

- James
  - Create “add product” page; database testing for “add product” form to upload images and descriptions to Google Cloud Storage Bucket then show product descriptions from database and images from Google Cloud in web page search results; create Google Cloud Build Trigger and Google Cloud Run Service for development branch staging site; Review and update functional requirements; Create wireframes for all use cases with Figma: color options customization, customize necklace, international shipping; Apply UX/UI from wireframes to website pages: create an account, sign in as a user
- Yitian
  - Review diagrams for high level database architecture and organization (EER and ERD); review high level diagrams (UML, Application Network, Deployment); Database testing for “add product” form to upload images and descriptions to Google Cloud Storage Bucket then show product descriptions from database and images from Google Cloud in web page search results; Database maintenance, Review and update functional requirements; Apply UX/UI from wireframes to website pages: subscription page, product grid, style quiz

<b>Member</b>	<b>Score</b>
Tamer	2
Denean	2
Daniel	2
James	2
Yitian	2

Total of all scores = 10

Member	Email Sent to Professor (feedback)
Cassia	Done
Daniel	Done
Denean	Done
Tamer	Done
Yitian	Done
James	Done

# **SW Engineering CSC648-848-01**

## **Summer 2023**

**Project Title:** Jewelry Shopping Site: ArtisanAura

**Team 05**

Cassia Reddig, creddig@sfsu.edu (Team Lead)

Yitian Cai (Github Master)

James Donnelly (Back End Lead)

Daniel Moorhatch (Front End Lead)

Tamer Senan (Editor)

Denean Le

Milestone - Version	Date Submitted
M4V1	08/01/2023
M4V2	08/07/2023

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# 1. Product Summary

**Name of Product:** ArtisanAura Jewelry (Shopping Website)

## **Committed P1 Functions:**

1. User
  - 1.1. General user: Does not need to login/register.
    - 1.1.1. (1) A general user shall be able to have unrestricted access to the website and view product details from many devices.
    - 1.1.2. (1) A general user shall be able to purchase many products by adding them into their shopping cart and completing the checkout process.
    - 1.1.3. (1) A general user shall choose at most one type of jewelry per product customized.
    - 1.1.4. (1) A general user shall have the option to register one and only one account by providing account registration details through the account creation form.
    - 1.1.5. (1) A general user shall be able to make changes to the items added to the shopping cart.
    - 1.1.6. (1) A general user shall be able to search for specific products by entering relevant keywords or product names into the search bar.
    - 1.1.7. (1) A general user shall be able to filter products by applying many filters to narrow the displayed products based on their preference.
    - 1.1.8. (1) A general user shall choose at most one design per product customized.
    - 1.1.9. (1) A general user shall choose at most one metal per product customized.
    - 1.1.10. (1) A general user shall choose at most one gem stone per product customized.

- 1.1.11. (1) A general user shall choose at most one size per product customized.
  - 1.1.12. (1) A general user shall choose at most one engraving per product customized.
  - 1.1.13. (1) A general user shall choose at most one packaging per product customized.
  - 1.1.14. (1) A general user shall choose to make a customized product or purchase a normal product.
- 1.2. Approved user: Needs to login/register.
    - 1.2.1. (1) An approved user shall be able to log into the system using their approved credentials that will verify user identity.
    - 1.2.2. (1) An approved user shall be able to log out from the system, which removes their current session from their account data.
2. Employee: Needs to login
    - 2.1. (1) An Employee shall be able to make changes to product details by modifying product descriptions, and price.
    - 2.2. (1) An Employee shall be able to create and post many new products into the system.
    - 2.3. (1) An Employee shall be able to remove many products from the system allowing data of the product to be removed.
3. Account:
    - 3.1. (1) An account shall be owned by one and only one user per email provided during creation of account.
4. Products
    - 4.1. (1) The system shall be able to display many products.
    - 4.2. (1) A product shall have a unique identifier to accurately track the product's information.

- 4.3. (1) A product shall have only one main image to be displayed on the catalog page.
  - 4.4. (1) A product shall have at least one price.
  - 4.5. (1) A product shall be able to be added to one and only one cart.
  - 4.6. (1) A product shall be reviewed many times.
5. Shopping cart
    - 5.1. (1) A cart shall be associated with at most one general user.
    - 5.2. (1) A cart shall be able to contain many products.
    - 5.3. (1) A cart shall calculate the sum of at most one price per product placed in the cart.
  6. Review/Rating
    - 6.1. (1) A review shall have one title.
    - 6.2. (1) A review shall have at most one description.
    - 6.3. (1) A review shall be associated with at most one product.
    - 6.4. (1) A review shall be associated with at most one approved user.
    - 6.5. (1) A review shall have at most one rating.

### **Product Summary:**

At ArtisanAura Jewelry, you're not just buying jewelry, you're buying handmade pieces from talented artisans. We at ArtisanAura Jewelry are firm believers that each and every piece of jewelry should be unique to their owner. That's why our online shopping experience offers a wide range of handmade jewelry, ranging from rings, bracelets and necklaces so you're sure to find the right piece that suits your individual style!

What sets us apart from other jewelry stores is our handcrafted jewelry made unique and with care, compared to mass produced jewelry suppliers. Our customization of jewelry that is done all through our online website also allows us to stand out from our competitors. Unlike the traditional jewelry stores where you may be able to customize your name or small engravings on pieces, we offer a wide range of customization ranging from different styles, gemstones and length. We also allow users to browse and customize pieces through our website freely without having to register an account with

us. For users who decide to create an account, special perks are made available such as being able to save and edit designs they have already created, making their shopping experience extremely convenient!

Users can start their shopping experience with us by browsing through our catalog of jewelry or starting fresh by customizing their own piece from scratch! After choosing their unique customized preferences, users are now able to add their design to their cart and proceed to checkout. Our user-friendly experience will ensure that your online jewelry shopping is a smooth and enjoyable process throughout each step. You will be able to track your order and view each update until it reaches your doorstep through your order number provided to you, so you don't have to worry about where or when you'll receive your jewelry. Once you receive your order, feel free to share your experience by leaving a review and rating through our website.

Discover the joy of owning a unique, handcrafted piece of jewelry that shows off your own personal style and craftsmanship of our expert artisans.

**Product URL:** <https://artisan-aura-ifjhxbedya-uw.a.run.app/>

## 2. Usability Test Plan

**Superior Feature:** Customization

**Five major functions:** 1) Customization process; 2) Save, edit, remove customization; 3) Purchasing; 4) Communication; 5) Error handling

### Usability Test Plan

**Test objectives per function:**

1. **Customization process:** The objective is to test how users select and modify customization options, such as jewelry type, style, material, gemstones, engravings, size, and packaging. The test will reveal if the process is easy to use and understand.
2. **Save, edit, and remove customizations:** The objective is to test if users easily understand how to save customizations, access previously saved customizations, and edit or remove saved customizations. This allows us to evaluate if our instructions are clear enough for the user to instinctively navigate through the process.
3. **Purchasing:** The objective is to test if the process of purchasing a customized product is smooth for both a general user and an approved user. This will reveal if there is a significant difference between the two, and if the process is still quick enough for users to be willing to create an account or login.
4. **Communication:** The objective is to test if our website clearly communicates the customization process. The test will allow us to gain a better understanding of where confusion may be commonly found, while also showing how much of the process is easily understood. This will show us if the users clearly understand the benefits and limitations of the customization features revolving around having an account.
5. **Error handling:** The objective is to test how our website handles errors during customization. The test will reveal to us if our website clearly shows where and why errors occur and provide the user options on how to handle difficulties, such as providing help documentation or encouraging the user to contact us through customer service.

## **Test description per function:**

1. **Customization process:** The user will access the ArtisanAura site with a mobile or desktop device using a web browser such as chrome(v114), safari(v16.4.1), edge(v114) or firefox(v114) with the starting point being the homepage. The intended users are general users who do not require logging into an account to proceed with the customization process. The URL of the system to be tested is <https://artisan-aura-ifjhxbedya-uw.a.run.app/customproduct>. The test will measure if each step of the customization process is clearly understood, if the user can see what they select without confusion, if the finished product is what the user envisioned, and how much time is taken to complete the process.
2. **Save, Edit, and Remove customization:** The user will access the ArtisanAura site with a mobile or desktop device using a web browser such as chrome(v114), safari(v16.4.1), edge(v114) or firefox(v114) with the starting point being the homepage. The intended users are approved users who are required to log in to proceed with saving customizations, along with removing and editing previously saved customizations. The URL of the system to be tested is <https://artisan-aura-ifjhxbedya-uw.a.run.app/customproduct>. The test will measure if the user can instinctively find, save, edit, and remove features without complications, if the user clearly understands what each feature does, if the user is logged in to use these features, and how much time is taken to complete these tasks.
3. **Purchasing:** The user will access the ArtisanAura site with a mobile or desktop device using a web browser such as chrome(v114), safari(v16.4.1), edge(v114) or firefox(v114) with the starting point being the homepage. The intended users are general users. The URL of the system to be tested is <https://artisan-aura-ifjhxbedya-uw.a.run.app/customproduct>. The test will measure if the user can purchase the customized product smoothly with and without an account, if the transition to purchasing after logging in is smooth, and how much time is taken to complete the process.
4. **Communication:** The user will access the ArtisanAura site with a mobile or desktop device using a web browser such as chrome(v114), safari(v16.4.1), edge(v114) or firefox(v114) with the starting point being the homepage. The intended users are general users. The URL of the system to be tested is <https://artisan-aura-ifjhxbedya-uw.a.run.app/>. The test will measure if the user completes the customization process starting from finding the page and ending with purchasing the product, with little to no confusion.

5. **Error handling:** The user will access the ArtisanAura site with a mobile or desktop device using a web browser such as chrome(v114), safari(v16.4.1), edge(v114) or firefox(v114) with the starting point being the homepage. The intended users are general users. The URL of the system to be tested is <https://artisan-aura-ifjhxbedya-uw.a.run.app/customproduct>. The test will measure if the flash messages show up accordingly, if the flash messages are clear about what the error is, and if the user intuitively finds solutions to problems by utilizing the help documentation or customer service feature.

### **Usability test table to measure the effectiveness of functions**

Test / Use case	% Completed	Errors	Comments
Customization Process	20%	- Can't select customization options	- No buttons or menu to select customization options
Save, Edit, Remove Customizations	0%	- Save feature does not exist so edit and remove cannot exist	- Save, edit, and remove buttons cannot be found
Purchasing	5%	- Cannot add to cart	- Add to cart function does not work, so cannot proceed with purchasing
Communication	30%	- Customization does not have all functionalities	- Finding customization page is simple but customization process cannot be completed
Error Handling	60%	- Does not show user how to solve difficulties	- Flash messages work and include what the error is - Help is not provided in case of errors

### Usability test table to measure the efficiency of functions

Test / Use Case	Time	Effort	# of screens / pages of instructions
Customization Process	1 min	- Little to no effort because customization process does not allow for customizing	1
Save, Edit, Remove Customizations	0 min	- No effort because does not exist	0
Purchasing	30 sec	- Little to no effort because cannot add to cart, so cannot proceed to checkout	1
Communication	1 min	- Little effort to navigate and understand customization process	3
Error Handling	10 sec	- Little effort to read and understand the message	1

### User satisfaction using a Likert questionnaire

The user satisfaction questionnaire was made into a Google Form that was sent to 12 different users for testing. The results shown below are the answers given by the majority of the users. For example, if 70% of users chose “strongly agree”, then the result shown above will be “strongly agree”.

Statements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Feedback
It was easy to select customization options.					X	“Customization not done yet”
The customization options were easy to understand and straightforward.					X	“I think having the customization section more eye catching would be good”
It was clear what my finished product looked like.			X			
I found saving customized designs easy.					X	
I knew where to edit and remove customizations.			X			
I clearly understood what saving, editing, and removing customizations meant.					X	
I found it easy to purchase my customized item as a guest.					X	
I was able to					X	

purchase my saved customization easily.						
I was able to add my customized product into my cart.					X	
It was easy to find the customization page and begin customizing.					X	
Completing the entire customization process from the homepage to purchasing was easy to understand.					X	"Very concise and straightforward website to follow"
The customization process was well communicated.					X	"Its great"
I was able to solve my problems based on what the error message said.					X	
Error messages were short and easy to understand.					X	
I found error messages to be helpful.					X	

### 3. QA Test Plan

**Five Non-Functional Requirements and QA test plan for each one of them:**

1. **Non-Functional Req:** The website should be compatible with main web browsers such as chrome(v114), safari(v16.4.1), edge(v114) and firefox(v114).
  - 1.1. **Test objectives:** Testing feature compatibility across multiple browsers
  - 1.2. **HW and SW setup:**  
HW: Windows 10 Standard PC. Macbook pro 2016. Iphone 13pro Max.  
SW: chrome(v114), safari(v16.4.1), edge(v114) and firefox(v114).  
URL: <https://artisanauradevweb-ifjhxbedya-uw.a.run.app/>
  - 1.3. **Feature to be tested:** Navigation through website and features such as shop, adding to cart and subscription to newsletter are compatible across multiple browsers.
  - 1.4. **QA Test Plan Table:**

Test #	Test Title	Test Description	Test Input	Expected Correct Output	Test Results
1	Website Navigation	Test the website's basic navigation across the different browsers.	Access the website from Chrome,Safari,Edge and Firefox.	Consistent navigation throughout each page on the website.	PASS
2	Newsletter Subscription	Test if the newsletter subscription feature works correctly across the different browsers.	Input email address and attempt to subscribe to the newsletter from Chrome, Safari, Edge and Firefox.	Complete and successful subscription interface through each browser.	PASS
3	Mobile Website Navigation	Test the website's basic	Access the website from Chrome,Safari,Edge and Firefox from each	Consistent navigation throughout	PASS

		navigation across the different browsers on mobile devices such as phones and laptops.	browser through laptop and mobile devices.	each page on the website that is equivalent to the PC browsing experience.	
--	--	--	--	--	--

**Results:** These test cases show that our website is fully compatible across multiple browsers and devices.

2. **Non-Functional Req:** The website shall support error messages for the users.

2.1. **Test objectives:** Testing the display of error messages to the user throughout the website.

2.2. **HW and SW setup:**

HW: Windows 10 Standard PC.

SW: chrome(v114)

URL: <https://artisanauradevweb-ifjhxbedya-uw.a.run.app/>

2.3. **Feature to be tested:** Cart is empty, Invalid entry, invalid password, out of stock message

2.4. **QA Test Plan Table:**

Test #	Test Title	Test Description	Test Input	Expected Correct Output	Test Results
1	Cart is empty error message	Test if the error message “Cart is empty” is displayed when a user attempts to check out with no items in their cart.	Navigate to your empty cart and proceed to checkout.	Error message will appear when attempting to check out stating that the cart is empty.	PASS

2	Invalid email/password error message	Test if the error message “Invalid email/password” is displayed if incorrect credentials are inputted during login.	Navigate to the Sign In page and enter invalid credentials.	Error message will appear stating the email/password is invalid.	PASS
3	Out of Stock Error Message	Test if the error message “Out of Stock” if an attempt to add/checkout an item that has 0 quantity left in the database is attempted.	Navigate to the shop section and click on a product. Then attempt to add more stock to your cart than available.	Error message will appear stating that the item is currently out of stock.	FAIL

**Results:** This testing ensures that the website displays most of the required error messages in relation to specific incidents. The failed test of Out of Stock message will be addressed and fixed to improve the users experience.

3. **Non-Functional Req:** Each page on the website shall have the same template of hyperlinks at the bottom of the page.
  - 3.1. **Test objectives:** Footers all work on each page
  - 3.2. **HW and SW setup:**  
HW: Macbook Pro 2019  
SW: Chrome v117  
URL: <https://artisan-aura-ifjhxbedya-uw.a.run.app/>
  - 3.3. **Feature to be tested:** Footer links for about, guides, shop, terms & conditions, privacy policy, refund request, order status, contact
  - 3.4. **QA Test Plan Table:**

Test #	Test Title	Test Description	Test Input	Expected Correct Output	Test Results
1	Necessary	Each page should have an	Scroll to the	Each page	PASS

	Footer links for customer care resources	About us, Guides, Shop, Terms&Conditons, Privacy Policy, Refund Request, Order Status, and Contact us.	bottom of each page to see that each page has a footer of required hyperlinks.	shall have the same footer formatted	
2	Overall design look	Each page should have a the same design template for the footer	Navigate each page and compare the template for each footer being used.	Each page should have the same design and aesthetic	PASS
3	Clicking on footer links	Testing each link on the footer in the main homepage to make sure each link takes the user to its designated page.	Select each of the links from About us- Contact us and then test the social media links as well.	Each link should properly work	PASS

**Results:** This test case shows that each page has a consistent footer template and ensures that important links through our footer are easy to access and view for the benefit of the user.

4. **Non-Functional Req:** The website shall have a visually pleasing interface and incorporate modern trends to keep customers engaged.
  - 4.1. **Test objectives:** Web design shows visual consistency
  - 4.2. **HW and SW setup:**

HW: Macbook Pro 2019  
 SW: Chrome v117  
 URL: <https://artisan-aura-ifjhxbedya-uw.a.run.app/>
  - 4.3. **Feature to be tested:** Color scheme, color consistency, visually consumer friendly
  - 4.4. **QA Test Plan Table:**

Test #	Test Title	Test Description	Test Input	Expected Correct Output	Test Results
1	Color Consistency	View pages to see if the color schemes remain a consistent	Navigate through website while analyzing color scheme of the specific page	Color scheme remains engaging, vibrant and consistent in each page	PASS
2	Color Schemes and Compliment	Throughout the website, the different colors being used should compliment each other and blend well	Navigate through each page and observe if the colors being used together are easy/nice to look at	Colors should have an complimenting blend with each other	PASS
3	Visuals and Consumer Friendly	Search for eye grabbing visuals and consumer friendly tools	Navigate around to see if certain pages have special visuals and consumer friendly features	User should be able to find images that give them an idea of what to expect from the specific page/overall website and find a personal quiz and maintenance guide	PASS

**Results:** This test case shows that our website contains a visually pleasing aesthetic that can attract new users and keep familiar users happy and comfortable while browsing our site.

5. **Non-Functional Req:** The user interface shall be user-friendly and easy to navigate.

- 5.1. **Test objectives:** Website has UX/UI best practice

**HW and SW setup:**

HW: Macbook Pro 2019

SW: Chrome v117

URL: <https://artisan-aura-ifjhxbedya-uw.a.run.app/>

- 5.2. **Feature to be tested:** UI Design and usability

- 5.3. **QA Test Plan Table:**

Test #	Test Title	Test Description	Test Input	Expected Correct Output	Test Results
1	Interface Design	Navigate through the different pages and ensure that each page	Play around with the UI design of the website and test its overall convenience	UI should be easy to use and adapt to for the user	PASS
2	Title Logo usage	Title page should be an easy and convenient quick link to the home page.	Click on Logo on each page to see if it will be used as a direct home page link	Logo should be a universally accessible home page button	PASS
3	Informative UI	Overall website UI should have all necessary information	Navigate around pages like home page, guides and about us	Each page should have access to	PASS

				necessary information to allow the user to understand the kind of website they are browsing	
--	--	--	--	---	--

**Results:** This test case shows that our website is easy to adapt to and use for our consumers to be able to easily use and obtain whatever information necessary for their user experience to be as pleasant as possible

## 4. Code Review

### Coding Style:

Our coding style for this project follows a Node.js and Express.js convention. We use `var` for variable declarations and `require()` for module imports. Asynchronous operations are handled using `async/await`, and route handling is done through the `router` object. Object destructuring, arrow functions, and template literals are utilized for more concise and readable code. While the style aligns with common practices, adopting modern JavaScript features like `let`, `const`, and `import/export` could further enhance the code's readability and maintainability.

### Code Example 1: (search.js)

We chose this code for review because search.js is a strong and important and necessary feature for our website to be as user friendly as possible.

```
const express = require('express');
const router = express.Router();
const db = require('../conf/database');
// In search route hence / refers to index of this router which is search
router.get('/', async (req, res, next) => {
  const searchTerm = req.query.q; // Get the search query from the request

  try {
    if (searchTerm) {
      const [results, fields] = await db.execute(
        `SELECT * FROM product WHERE title LIKE '%${searchTerm}%' OR type LIKE '${searchTerm}' OR material LIKE '${searchTerm}' OR description LIKE '%${searchTerm}%'
      `);

      if (results.length > 0) {
        // If items are found, render the searchresults template with the results
        res.render('searchresults', { results: results, searchTerm: searchTerm });
      } else {
        // If no items are found, render the searchresults template with a "Item not found!" message
        res.render('searchresults', { notFound: true });
      }
    } else {
      // If the search term is empty, render the searchresults template with an empty results array
      res.render('searchresults', { results: [] });
    }
  } catch (err) {
    console.error('Error executing search query:', err);
    res.status(500).send('Internal Server Error');
  }
});
```

## Code Example 2: (product.js)

We chose product.js for code review because it is important to ensure the code approach we chose for product related aspects in our site is at its best state in terms of coding style and coding logic.

```
1  var express = require('express');
2  var router = express.Router();
3  var multer = require('multer');
4  var sharp = require('sharp');
5  var crypto = require('crypto');
6  var db = require('../conf/database');
7  const {getProductById} = require('../db/products');
8  const { Storage } = require('@google-cloud/storage');
9
10 const storage = new Storage({
11   projectId: 'csc-648-848-team-05',
12   keyFilename: 'googlestoragekey.json',
13 });
14
15 var uploader = multer();
16
17 router.get('/:id', async (req, res, next) => {
18   try{
19     let productId = req.params.id;
20     let results = await getProductById(productId);
21     if(results && results.length > 0){
22       res.render('productPage', {currentProduct: results[0]});
23     }
24     else{
25       req.flash("error", "Product not found");
26       res.redirect('/');
27     }
28   }
29   catch (error){
30     next(error);
31   }
32 });
33
34 router.post('/add-custom-item', (req, res, next) => {
35   req.flash('error', 'Failed to add to cart');
36   req.session.save(err => {
37     res.redirect('/customproduct');
38   });
39 });
40
41 router.post('/add-item', (req, res, next) => {
42   req.flash('error', 'Failed to add to cart');
43   req.session.save(err => {
```

## **Review from Team 2:**

- Search functionality: Your comments are both comprehensive and concise, which is great. The only thing I would change is to encapsulate the search functionality into a function that you call there. I think that would just make it look nicer and add reusability. Other than that, your syntax looks nice and seems to follow set rules.
- Product routing: This page also seems to follow good syntax. Although, line 5 can be removed as it is not being used. Additionally, it would help to add comments above each route to provide explanations of what they are doing so that readers can more easily understand. Just some small nitpicks, everything else looks great!

## 5. Self-Check: Best Practices For Security

**Major Assets:** User data, authentication data, product data, transaction data, payment information, system infrastructure, content on website, legal compliance (terms of service, privacy policy), reviews/ratings, search and filter functions, website availability.

Registration Form

Make sure your password contains:

- at least 8 characters
- at least 1 uppercase letter
- at least 1 lowercase letter
- at least 1 number
- at least one special character

Name  
James

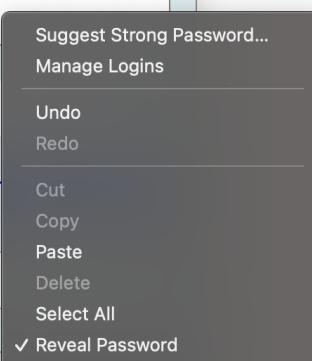
Email  
jdonnelly@sfsu.edu

Password  
Passw0rd!

Confirm Password  
Passw0rd!

I have read and agree to the  
[Terms & Privacy Policy](#)

Create Account



id	name	email	password
1	12	12@12.com	\$2b\$05\$w5kF1c/u9gFMxk2E8j8fMuD9MKObubE0QqRFQHxtJIT2xKj1AVbO6
2	A	A@A.com	\$2b\$05\$m2U3v3a4.6lBVvd2hHScur7MPti2bbV39zbM5oz3vXVSdOWqG3G6
3	Prathiba	prathibaeie1@gmail.com	\$2b\$05\$71Kvk3RM6.qSOBjGhqaaVO3uXj.134j6K/FfGpCdC3LlmTanlorzq
4	Prathiba Ramesh	prathibaramesh@gmail.com	\$2b\$05\$b8MTa9Hz02FKliejwcJy3.zUq54yYLrvXdnOeo0qJTiFv9w7k386
5	Denean	nean@mail.com	\$2b\$15\$SLQsP.muxg0Wib.cQ0bFgu3wiS3yc08O130yNU/obqpyYVT7iQ9OK
6	CSC675M3	asd@asd.com	\$2b\$05\$BimArk7qMqqDkq4UY267YOoyLGMYmAp0ladhF9ubYU5WK9oY.8mOq
7	dantest	pass@yahoo.com	\$2b\$05\$MC1zNpxDx07KxqouwyXL/uoH.sLuZX7qLHzWMDJHFns40UfUOivWO
9	yi	edd@edd.com	\$2b\$15\$XbCrmpZaElvDdNzneL3WaunowOj6T7PrIIFXMda/hn.iIecD5yPpe
10	James	jdonnelly@sfsu.edu	\$2b\$15\$8j1c9zbGNdtf6ak8fOQJ.exf90TD.LakkpWOfypucHIA8hEKvcCe

Password encryption is done through the bcrypt module where the password is hashed at 15 salt rounds.  $2^{\text{salt rounds}}$  hashing iterations.

- Password, Email, search bar input, use of regex for password and email, use of express-validator for searchbar input

```

const checkPassword = (password) => {
  let passwordChecker = /^(?=.*[a-z])(?=.*[A-Z])(?=.*\d)(?=.*[@$!%*?&])[A-Za-z\d@$!%*?&]{8,}$/;
  return passwordChecker.test(password);
}
const checkEmail = (email) => [
  let emailChecker = /^(([^<>()[]\\.,;:\\s@"]+(\.\[^<>()[]\\.,;:\\s@"]+)*|(".+"))@((\[[0-9]{1,3}\]|
  .[0-9]{1,3}\.\[0-9]{1,3}\])|(([a-zA-Z\-\-0-9]+\.\.)+[a-zA-Z]{2,}))$/;
]

```

```

[check('q').not().isEmpty().withMessage('Search term is required')
.isLength({ max: 60 })
.withMessage('Search term must be less than 60 characters'),
],
async (req, res, next) => {
  const errors = validationResult(req);
  if (!errors.isEmpty()) [
    // return res.status(400).json({ errors: errors.array() });
    //^^^^^^^^^^^^^ check to see if working
    return res.render('searchresults', { errors: errors.array(), results: [] });
  ]
}

```

- Not yet implemented: order data validation, product data validation, payment validation, review/rating validation, customization validation, feed.

## 6. Self-Check: Adherence To Non-Functional Specs

Done:

1. Users
  - 1.1. Approved Users shall be required to log to access account details.
2. Storage
  - 2.1. The database system should support persistent storage.
3. Website
  - 3.1. The website should be compatible with main web browsers such as chrome(v114)), safari(v16.4.1), edge(v114) and firefox(v114).
  - 3.2. Each page on the website shall have the same template of hyperlinks at the bottom of the page.
  - 3.3. The website shall be compatible with various devices of different sizes.
  - 3.4. All actions done on the website shall have smooth transitions.
  - 3.5. The response time shall be or be under the average accepted response time.
  - 3.6. The website shall have a visually pleasing interface and incorporate modern trends to keep customers engaged.
  - 3.7. The website design should be related to the image of the company.
  - 3.8. The website should have a consistent design pattern.
4. Security:
  - 4.1. The system shall encrypt passwords.
  - 4.2. The system shall include HTTPS to protect data during exchange between server and client.
  - 4.3. Server side validation logic shall be regularly reviewed and updated as system requirements evolve.
5. Sessions:
  - 5.1. The system shall generate a unique session id upon user login.
  - 5.2. The system shall include a mechanism to invalidate a session on logout.
6. Data Integrity:
  - 6.1. The system shall ensure the accuracy and consistency of data stored in the database.
  - 6.2. The system shall implement proper data validation and sanitization.
7. Usability:
  - 7.1. The user interface shall be user-friendly and easy to navigate.
8. Availability:

- 8.1. The system shall maintain high availability to ensure users can access the website.
9. Environmental
  - 9.1. All documents such as order confirmations, shipping details, communication, etc. shall be digital to save paper.
  - 9.2. The system shall use optimized files to lower the amount of data processed through the network.
  - 9.3. The system shall make use of System Side Rendering to save energy
10. Legal
  - 10.1. Terms and conditions shall be easily accessible from all pages of the website via a link on the footer.
  - 10.2. Acknowledgement of Agreement shall be required for all users to agree to the terms and conditions during first use of service.
  - 10.3. Users shall be notified of changes to terms and conditions and prompted to agree with them again.
11. Copyright
  - 11.1. The website shall comply with all relevant copyright laws and regulations.
  - 11.2. All content on the website shall be original, licensed, or within fair use.
  - 11.3. A copyright notice shall be displayed on the website in the footer.
12. Maintenance
  - 12.1. The website shall have a routine and planned maintenance schedule to update content, improve functionality, security patches, and update backend services.
  - 12.2. Downtime for maintenance shall be scheduled during off peak hours to minimize impact on users.
  - 12.3. Regular backups shall be made of website data and configurations.

## On Track:

1. Website
  - 1.1. The website shall support a search feature with a filter tool.
2. Security
  - 2.1. The server shall reject invalid, unexpected, and malicious inputs and accept valid inputs.
  - 2.2. The website shall have a valid SSL/TLS certificate that is properly configured to the server.
3. Sessions
  - 3.1. The system shall provide session timeouts to logout inactive users.

## 7. List Of Contributions

- Tamer
  - Code Review, QA Test Plan: hyperlinks, visually pleasing interface, easy to use interface. Review of P1 requirements and non-functional requirements.
- Denean
  - Usability Test Plan for functions, Usability Tables for effectiveness and efficiency, Likert questionnaire. Review of P1 requirements and non-functional requirements.
- Daniel
  - Product summary and description, QA Test Plan: web browser compatibility, website error messages. Review of P1 requirements and non-functional requirements.
- James
  - Self check best practices for security. Review of P1 requirements and non-functional requirements.
- Yitian
  - Self check adherence to non-functional requirements. Review of P1 requirements and non-functional requirements.

<b>Member</b>	<b>Score</b>
Tamer	2
Denean	2
Daniel	2
James	2
Yitian	2

Total of all scores = 10

Member	Email Sent to Professor (feedback)
Cassia	Done
Daniel	Done
Denean	Done
Tamer	Done
Yitian	Done
James	Done

# Post Analysis: Lessons Learned

## Main Challenges:

1. **Understanding Milestone Requirements:** During various milestones, the team faced challenges in comprehending the requirements. This was evident during Milestone 1 where the team took a while to figure out M1 requirements and during Milestone 3 where the use of Figma and wireframes posed challenges.
2. **Time Estimation:** The team often underestimated the time required for certain tasks. This was seen in Milestone 1 with checkpoint 2 and in Milestone 3 with the completion of wireframes.
3. **Technical Challenges:** Connecting GitHub to Google Cloud Compute in Milestone 1, visualizing the database structure and search function in Milestone 2, and usability and QA tests in Milestone 4 were some of the technical challenges faced.
4. **Task Assignment:** The team lead expressed difficulty in assigning tasks, especially at the beginning of milestones. This was due to the initial lack of clarity regarding milestone requirements.
5. **External Factors:** As the summer semester progressed, team members became busier with class assignments and exams, affecting the timeliness of task completions, especially during Milestone 3.

## What to Do Better Next Time:

1. **Early Clarification:** Begin each milestone with a dedicated session to clarify and understand the requirements. This can involve breaking down each requirement into smaller tasks and discussing them as a team.
2. **Improved Time Management:** Allocate more time than initially estimated for tasks that have been historically underestimated. Implement a buffer period for unforeseen challenges.

3. **Technical Training:** Organize training sessions to address recurring technical challenges. For instance, a training session on connecting GitHub to Google Cloud Compute or using Figma effectively can be beneficial.
4. **Clear Task Assignment:** The team lead can work with individual team members to understand their strengths and areas of expertise. This will help in assigning tasks that align with each member's skills. Additionally, creating a detailed task list at the beginning of each milestone can provide clarity.
5. **Regular Check-ins:** Implement more frequent check-ins or stand-up meetings earlier in the project to monitor progress, address challenges early on, and reallocate resources if needed.
6. **External Commitment Awareness:** At the beginning of each milestone, have a session where team members discuss their external commitments. This will help in understanding potential availability issues and planning tasks accordingly.

In conclusion, while the team has shown consistent effort and collaboration throughout the project, there are areas of improvement that can enhance efficiency and output quality. By addressing the challenges faced and implementing the suggested improvements, the team can ensure smoother project execution in future milestones.

# Team Member Contributions

- Tamer
  - M1 CheckPoint #1
    - Brainstorm executive summary, write use cases,
  - M1 CheckPoint #2
    - Research+test tech stack, added about me html page to our repo
  - M2
    - Describe and define APIs, Describe significant non-trivial algorithm/process, Describe changed SW tools and frameworks, Design high level DB and create ERD-Models, Determine media storage, Determine search/filter architecture and implementation, Back-end and Front-end teams connect UI with back-end, Create MySQL databases
  - M3
    - Update GitHub branches; Review and update functional requirements; Create wireframes for all use cases with Figma: customer support, joining newsletter, jewelry recommendation, artisan spotlight, jewelry care and maintenance, create new account; Apply UX/UI from wireframes to website pages: jewelry care and maintenance guides, jewelry sizing guide, request refund
  - M4
    - Code Review, QA Test Plan: hyperlinks, visually pleasing interface, easy to use interface. Review of P1 requirements and non-functional requirements.
  - M5

- Product Page UX, Save and Share function, Forward and Back buttons and function, Show related products on Product Page, M4 document revision
- Denean
  - M1 CheckPoint #1
    - Brainstorm executive summary, write use cases, edit competitive analysis
  - M1 CheckPoint #2
    - Research+test tech stack, added about me html page to our repo, deployed html site to VM
  - M2
    - Describe and define APIs, Describe significant non-trivial algorithm/process, Describe changed SW tools and frameworks, Design high level DB and create ERD-Models, Determine media storage, Determine search/filter architecture and implementation, Back-end and Front-end teams connect UI with back-end, Research and document how to create public SSH username and keys, Generate public SSH user and keys, Prioritize and expand functional requirements, Data Definitions and Glossary, Update GitHub branches, Connect GitHub to Google VM, Create MySQL databases
  - M3
    - Create EER diagram; Review ERD and update as needed; Create “add product” page; Database testing for “add product” form to upload images and descriptions to Google Cloud Storage Bucket then show product descriptions from database and images from Google Cloud in web page search results; Review and update data definitions; Review and update functional requirements; Update

CSS, create notification, and add password verification for sign-in and registration; Create user profile page; Apply UX/UI from wireframes to website pages: product page, contact customer support, order status, save designs, profile page, create an account, shopping cart

- M4
  - Usability Test Plan for functions, Usability Tables for effectiveness and efficiency, Likert questionnaire. Review of P1 requirements and non-functional requirements.
- M5
  - Create database, back-end, and front-end for Shopping Cart, Check-out Process, Add Product to Cart, Place Order, Track Order, Login and Sign-up validation
- Daniel
  - M1 CheckPoint #1
    - Brainstorm executive summary, write use cases, edit use cases+diagrams
  - M1 CheckPoint #2
    - Added a testing and dev branch to github, added the ip of our site to github, added about me html page to our repo
  - M2
    - Back-end and Front-end teams connect UI with back-end, Prioritize and expand functional requirements, Establish GitHub workflow, Update GitHub branches, Connect GitHub to Google VM, Identify Key Risks, Create application network and deployment diagrams, Create UI mockups and storyboards, help design Home Page for Vertical Prototype, Home Page UI/UX, UML Diagrams and Network/Deployment diagrams.

- M3
  - Revise M2 document; Review UML diagram, application network diagram, deployment diagram and update as needed; Review and update functional requirements; Create and edit wireframes for all use cases with Figma; Apply UX/UI from wireframes to website pages: share design and customize product. Created example single product test and custom product test pages.
- M4
  - Product summary and description, QA Test Plan: web browser compatibility, website error messages. Review of P1 requirements and non-functional requirements.
- M5
  - Customization page UX, Customization functions, Save and Share products, Custom Product options,
- James
  - M1 CheckPoint #1
    - M1 document editor, brainstorm executive summary, edit executive summary, write use cases, add/edit functional requirements,
  - M1 CheckPoint #2
    - Research+test tech stack, added about me html page to our repo
  - M2
    - Build Home Page for Vertical Prototype, Home Page UI/UX, Home Page design and handlebars, Home Page quiz, Back-end and Front-end teams connect UI with back-end, Connect GitHub to Google VM, Create use cases based on executive summary in M1, Revise M1 document, Research and troubleshooting connect to DB, Login/Registration function, Database statements

- M3
  - Create “add product” page; database testing for “add product” form to upload images and descriptions to Google Cloud Storage Bucket then show product descriptions from database and images from Google Cloud in web page search results; create Google Cloud Build Trigger and Google Cloud Run Service for development branch staging site; Review and update functional requirements; Create wireframes for all use cases with Figma: color options customization, customize necklace, international shipping; Apply UX/UI from wireframes to website pages: create an account, sign in as a user
- M4
  - Self check best practices for security. Review of P1 requirements and non-functional requirements.
- M5
  - Create additional parameters for product filter on Shop Page, Show related products when no product found in search and no filter match, Session time-outs, Search bar validation, Employee Page, Edit Products, Reviews database, Breadcrumbs
- Yitian
  - M1 CheckPoint #1
    - Brainstorm executive summary, write use cases, edit data items/entities,
  - M1 CheckPoint #2
    - Research tech stack, added about me html page to our repo
  - M2
    - Build Home Page for Vertical Prototype, Home Page UI/UX, Back-end and Front-end teams connect UI with back-end, Create

UI mockups and storyboards, Research and troubleshooting connect to DB, Search Bar function, Search results page, Database statements

- M3
  - Review diagrams for high level database architecture and organization (EER and ERD); review high level diagrams (UML, Application Network, Deployment); Database testing for “add product” form to upload images and descriptions to Google Cloud Storage Bucket then show product descriptions from database and images from Google Cloud in web page search results; Database maintenance, Review and update functional requirements; Apply UX/UI from wireframes to website pages: subscription page, product grid, style quiz
- M4
  - Self check adherence to non-functional requirements. Review of P1 requirements and non-functional requirements.
- M5
  - Create filter for Shop Page, Reviews database, Create Ratings and Reviews functions, Add reviews to Product Page, M4 document revisions, Prepare and revise M1-M4 for M5 document

<b>Member</b>	<b>Score</b>
Tamer	2
Denean	2
Daniel	2
James	2
Yitian	2

Total of all scores = 10