SW Engineering CSC648-848-01

Summer 2023

Project Title: Jewelry Shopping Site: ArtisanAura

Team 05

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Milestone 1 V.1

22 June 2023

History table (revisions)

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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 website, she finds a bracelet that suits her daughter well 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.
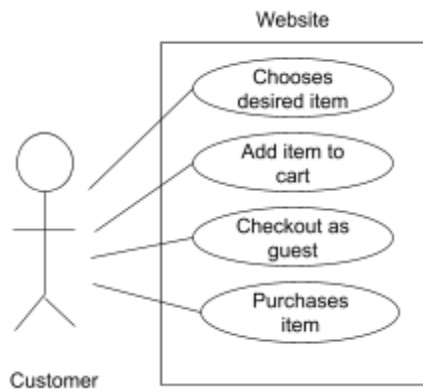
Use Case: Purchasing as account user

Actors: Customer (Tiffany)

Description: Tiffany is a mother looking for a bracelet for her daughter's 16th birthday. While browsing through our website, she finds a bracelet that suits her daughter well 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 decides that she would like to sign into an account, but does not have one. She creates an account and proceeds to purchase the bracelet.
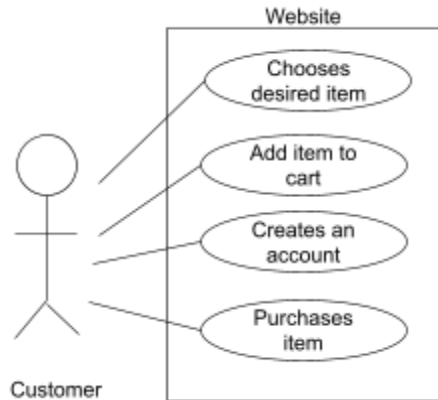
Website

Customer

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.


Website

Sarah
(Customer)
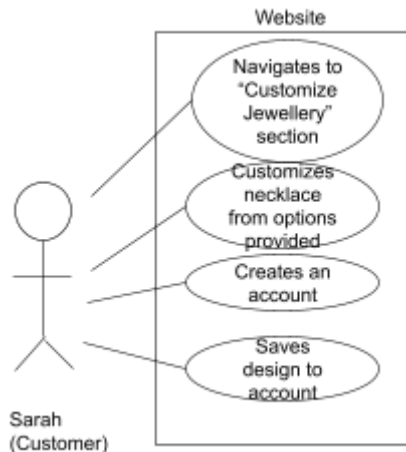
Use Case: Creating an account

Actors: Son(Eli), Customer(John)

Description: Eli is a 9 year old boy who likes to shop online with his father, John. Eli and John stumble upon our jewelry website and find enjoyment looking through our products and playing around with the customization tool. John decides that they should make an account so that they can revisit the website in the future. John navigates to the "Create an account" page and inputs his credentials. After receiving

and confirming the verification email, John and Eli sign into their new account and continue browsing the website.
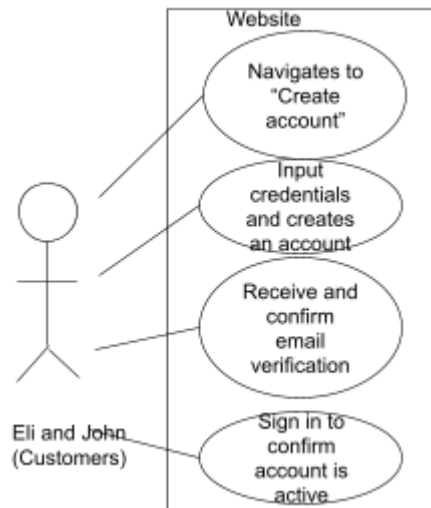
Use Case: Saving & Sharing Designs

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.
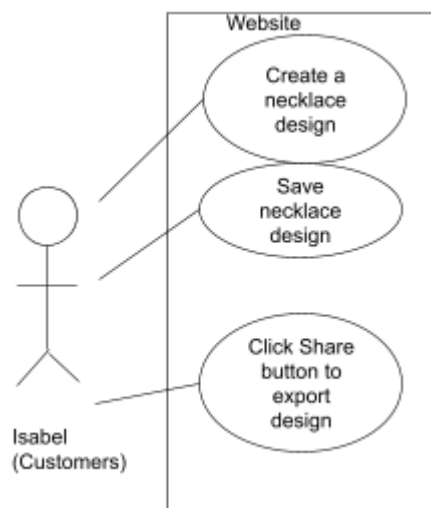

Use Case: Searching for products

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.
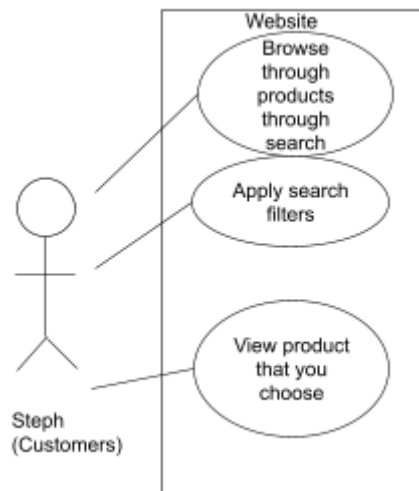
Use Case: Checking status of an order
Actors: Customer(Peter)
Description: Peter recently placed an order for a necklace on the online website. He wanted to check the status of the order and see when it might be delivered. He logs into his account on the website and navigates to the "Orders" tab where he is able to view past orders and current. Peter selects his order and views the tracking information that confirms delivery tomorrow morning.
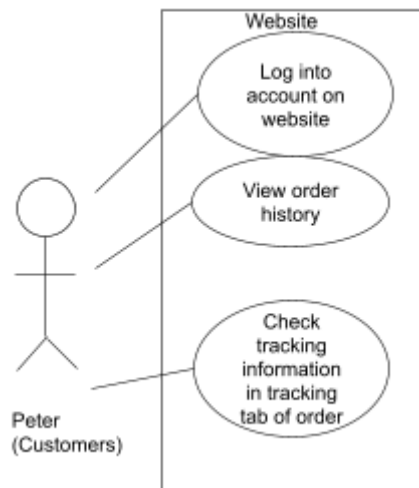
Use Case: Joining mail subscription newsletter
Actor: Customer(Dory)

Description: Sorry 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.
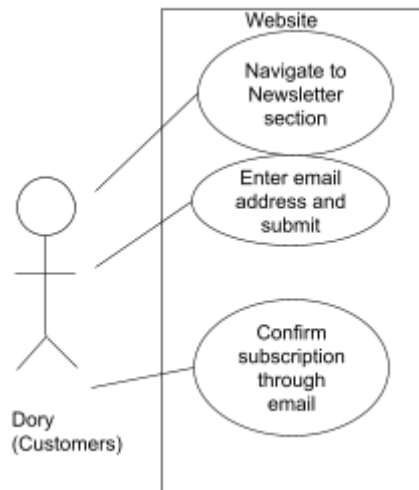
Use Case: Contacting Customer Support
Actors:Customer(Steven), Employee(Daniel)

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.
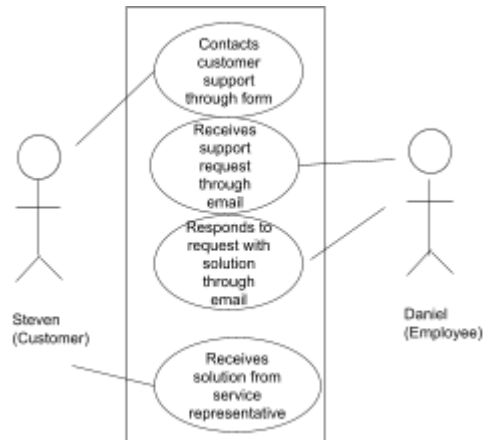
Use Case: Request Refund, After-Sales Service
Actor: Customer (Ed), Employee (Cherry)

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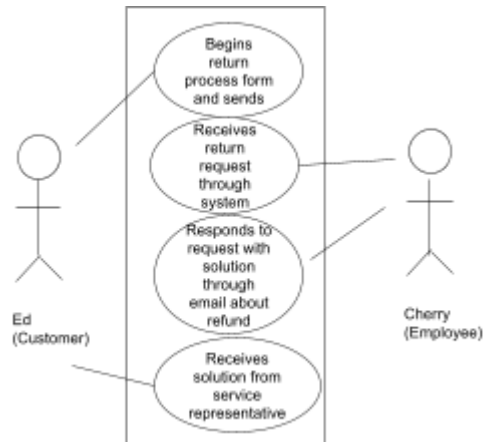
Use Case: International shipping
Actor: Customer (Charlie)
Description: Charlie wants to purchase an expensive necklace from our website and lives in another country. When checking out, Charlie selects the international shipping option which prompts him to input his address. The website then automatically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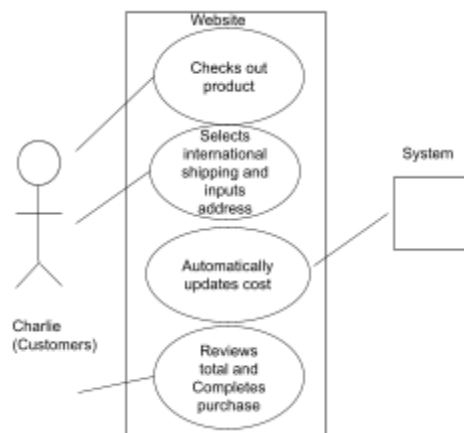
Data items / Entities

1. User

    1.1. Attributes: name, email. password, contact details

    1.2. Order History

    1.3. Saved designs/customizations

2. Employee

    2.1. Attributes: employee id, name, password

3. Product

    3.1. Attributes: product ID, image, price, name, category, description

    3.2. Customization options: gemstones, metals, charms, patterns

4. Gemstones

    4.1. Name, type, cut, color, clarity, carat(s)

    4.2. Pricing

5. Metals

    5.1. Metal types: Gold, silver, platinum, rose gold,

6. Payment

    6.1. Payment details

7. Shipping Information

    7.1. Carrier information

    7.2. Tracking details

    7.3. Options/Cost

8. Shopping cart

    8.1. Items

    8.2. Number of items.

9. Review/rating

    9.1. Stars

9.2.　number of reviews.

10.　Purchased order.

10.1.　Attributes: ID, items, payment info.

10.2.　returning.

11.　Jewelry box.

11.1.　Repair.

11.2.　Customization.

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 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, safari, edge and firefox.
   5.4. Each page on the website shall have the same template of hyperlinks at the bottom of the page.
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.
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.

Competitive Analysis

Feature	Pandora https://us.pandora.net/	Zales https://www.zales.com/	Moon Magic https://moonmagic.com/	Ian Charms https://iancharms.com/	Tiffany & co https://www.tiffany.com/
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	+	+	-	+	+	++
Filter Products	++	+	+	+	+	++
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: Java
- 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

Member	Score
Tamer	10
Denean	10
Daniel	10
James	10
Yitian	10

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