

SW Engineering CSC648-848-01

Summer 2023

Project Title: Jewelry Shopping Site: ArtisanAura

Team 05

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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 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 log into the system using their approved credentials that will verify user identity.
 - 1.2.6. (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 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 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. 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 one title.
 - 7.2. (1) A review shall have at most one description.
 - 7.3. (1) A review shall be associated with 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.

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-ifjhxbद्या-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-ifjhxbद्या-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-ifjhxbद्या-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-ifjhxbद्या-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-ifjhxbeya-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&Conditions, 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-ifjhxbद्या-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/over all 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-ifjhxbeya-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 informatio n to allow the user to understan d 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.

The image shows a registration form with the following fields and content:

- 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 [& Privacy Policy](#)
- Create Account**

An overlay menu is visible on the right side of the form, containing the following options:

- Suggest Strong Password...
- Manage Logins
- Undo
- Redo
- Cut
- Copy
- Paste
- Delete
- Select All
- ✓ Reveal Password

id	name	email	password
1	12	12@12.com	\$2b\$05\$w5kF1c/u9gFMxk2E8j8fMuD9MKObubE0QqRFQHxtJIT2xKj1AVbO6
2	A	A@A.com	\$2b\$05\$m2U3v3a4.6lbVvdK2hHScur7MPti2bbV39zbM5oz3vXVSdOWqG3G6
3	Prathiba	prathibaeie1@gmail.com	\$2b\$05\$71Kvk3RM6.qSOBjGhqaaVO3uXj.134j6K/FfGpCdC3LmTanlorzq
4	Prathiba Ramesh	prathibaramesh@gmail.com	\$2b\$05\$b8MTa9Hz02FKliejwcJy3.zUq54yYLRvXdnOeo0qJfTiFv9w7k386
5	Denean	nean@mail.com	\$2b\$15\$SLQsP.muxg0Wib.cQ0bFgu3wiS3yco8O130yNU/obqpyYVT7iQ9OK
6	CSC675M3	asd@asd.com	\$2b\$05\$BimArk7qMqqDkq4UY267YOoyLGMymAp0ladhF9ubYU5WK9oY.8mOq
7	dantest	pass@yahoo.com	\$2b\$05\$MCizNpXdxO7KxqouwyXL/uoH.sLuZX7qLHzWMDJHFnS40UfUOiVWO
9	yi	edd@edd.com	\$2b\$15\$XbCmjpZaELvDdNzneL3WaunowOj6T7PrIlFXMdA/hn.iiecD5yPpe
10	James	jdonnelly@sfsu.edu	\$2b\$15\$8j1c9zbGNdtf6ak8fOQJ.exf90TD.LakkIpWOfpucHIA8hEKvcCe

Password encryption is done through the bcrypt module where the password is hashed at 15 salt rounds. 2^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}\.
  return emailChecker.test(email);
}

.[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. Users
 - 1.1. General Users shall be required to input order number and email to access order details.
2. Website
 - 2.1. The website shall support a search feature with a filter tool.
3. Security
 - 3.1. The system shall encrypt payment information.
 - 3.2. The server shall reject invalid, unexpected, and malicious inputs and accept valid inputs.
 - 3.3. The website shall have a valid SSL/TLS certificate that is properly configured to the server.
4. Sessions
 - 4.1. 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.

Member	Score
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