

FUNCTIONAL REQUIREMENTS

Portfolio Project

JOHANNA ORAS SHOP



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Overview

Johanna Oras Shop is an e-commerce website which allows customers to browse and purchase t-shirts, sweatshirts, and other apparel online. Key features will include:

- User accounts and profiles
- Product catalogs and search
- Shopping cart and checkout process
- Multiple payment options
- Order history and account management

The website should provide an intuitive, user-friendly shopping experience while also promoting products to customers. Customer and order data must remain secure.

| REQUIREMENT | DESCRIPTION | PRIORITY | ACCEPTANCE CRITERIA |
|---------------------------|---|----------|---|
| User Registration & Login | Allow customers to create an account and login to save information and access order history | High | <ul style="list-style-type: none">• Users can create a new account with name, email and password• Users can login with registered email and password• Users are redirected to account dashboard on successful login |
| Product Browse & Search | Display catalog of products sorted by categories, allows keyword search to find products | High | <ul style="list-style-type: none">• Products sorted into appropriate categories• Search box returns expected results for valid search terms• Pagination or infinite scroll implemented for long product lists |
| Shopping Cart | Customers can add products and quantities to a cart, edit items in cart, apply discounts | High | <ul style="list-style-type: none">• Users can add products to cart from product listing and product page• Quantities can be updated for items in cart• Valid discount coupons apply properly when entered |
| Checkout & Payment | Collect shipping address, billing info and process payment securely via card, PayPal etc | High | <ul style="list-style-type: none">• User can enter shipping and billing info• Payment is processed properly with test payment data• Order confirmation page displays on completion |
| Order Management | Users can view order history, track order status, cancel orders, return/exchange items | High | <ul style="list-style-type: none">• User can access order history from account dashboard• Order status updates reflected for placed orders• Cancel button removes pending order |
| Admin Features | Inventory management, customer admin, sales reporting | High | <ul style="list-style-type: none">• New products can be added with details• Inventory levels update when orders placed• Sales and customer reports accessible |

User Registration & Login

User Stories

1. Account Registration and Security:

- As a user, I want to register using name, email, and password to save my information securely.
- Ensure the website prompts for a strong password during registration for enhanced account security.
- Provide the option for two-factor authentication for added security.

2. User Authentication and Access Control:

- As a returning user, I want easy login access to manage my account details and access order history.
- Enable password reset functionality for users who forget their passwords.
- Ensure unregistered users cannot access accounts or order history.

3. Profile Management and Data Handling:

- Allow users to edit profile information post-registration (e.g., email, password, personal details).
- Provide the option for users to delete their accounts, ensuring complete removal of personal data from the system.

4. Session Management and Security Measures:

- Maintain user sessions during page refreshes or temporary navigation away from the site.
- Implement automatic logout after a period of inactivity to ensure account security.

Test Cases

1. Registration Validation:

- Validate successful registration with valid details.
- Ensure registration fails with invalid email addresses.
- Verify that required fields are enforced during registration.
- Test registration with invalid email formats and ensure failure.

2. Email and Account Verification:

- Validate user account creation sends an email verification message.
- Confirm successful password reset email in the "Forgot password" flow.
- Validate reset password functionality for expired or invalid reset tokens/links.

3. Login Functionality:

- Validate login success with valid credentials.
- Ensure login fails with an invalid password or incorrect username.

- Test login with empty username and password values to prevent access.
- Verify two-factor authentication setup process and functionality.

4. Password Complexity and Security Measures:

- Validate enforcement of password complexity rules during registration.
- Test registration with a password not meeting complexity rules and ensure failure.
- Verify login prompts for the second factor after enabling two-factor authentication.

5. Profile Management and Account Actions:

- Test editing user profile information and verify changes reflect correctly.
- Confirm account deletion removes all associated data from the system.

6. Session Management and Security Checks:

- Test session persistence after login and page refresh.
- Verify automatic logout functionality after a period of inactivity.

7. Interface Accessibility and Security Checks:

- Ensure UI elements are accessible via keyboard navigation.
- Test responsiveness of login and registration forms across devices and screen sizes.
- Perform security checks for SQL injection and cross-site scripting vulnerabilities in input fields.
- Verify sensitive information like passwords is not visible in URLs or plain text in the application.

Design Mockups

Non-existent registration / login page

Product Browse & Search

User Stories

1. Product Browsing and Category Navigation:

- As a shopper, I want to browse products by category to easily find items of interest.
- Provide a search function for quick access to specific products.

2. Product Details and Alternatives:

- Allow shoppers to view detailed product information and explore alternative options for items of interest.

3. Access Control and Prevention of Abusive Scraping:

- Implement measures to prevent abusive scraping activities from accessing and downloading the entire product catalog.

Test Cases

1. Category and Listing Validation:

- Ensure main product categories display correctly.
- Verify product categories lead to appropriate listings.

2. Search Functionality Validation:

- Validate search returns expected results for keywords.
- Confirm filters can be applied to search results effectively.

3. Product Details and Related Items:

- Validate the product detail page contains expected information.
- Confirm related products displayed on the product page.

4. Search Edge Cases and Security Measures:

- Test search functionality with nonsense words and extremely long search queries.
- Apply multiple filters simultaneously to check handling of zero product returns.

5. Access Control and URL Handling:

- Attempt accessing product URLs directly with invalid product IDs to prevent unauthorized access.
- Verify URL manipulation (modifying product IDs) doesn't display unpublished products.

6. Pagination Handling:

- Test the system's response to extremely large values for the products-per-page parameter to ensure it doesn't cause issues.

Design Mockups

JOHANNA ORAS SHOP

[front page](#) [Sorry we're closed products](#) [All products](#) 



Showing all 12 results

Sort by: most purchased first 




Sorry we're closed T-shirt

€ 35.00

- Unisex T-shirt
- Material: 100% cotton 190g
- S and M sizes are temporarily out of stock

Size

choose 

1

[add to cart](#)

Shopping Cart

User Stories

1. Cart Management:

- Allow users to add products to the cart with desired quantities.
- Provide the ability to view the cart and edit product quantities as needed.

2. Promo Code Application and Security Measures:

- Allow users to apply promo codes for discounts when available.
- Implement measures to prevent improper application of discounts by users trying to exploit the system.

3. Sorting and Filtering Capabilities:

- Offer sorting options (price, popularity, newest) for easier product decision-making.
- Provide filtering based on multiple attributes (size, color, price range) for efficient item discovery.

4. Product Details and Comparison:

- Implement zoom feature/multiple images per product for detailed examination before purchase.
- Offer a comparison feature allowing users to view multiple products side by side for informed decisions.

5. Performance and Accessibility:

- Ensure quick loading of product images and details, catering to slower internet connections.
- Make the website accessible via screen readers and compatible with assistive technologies for enhanced accessibility.

Test Cases

1. Cart Functionality Validation:

- Validate products can be added to the cart from different pages.
- Confirm the ability to increase/decrease quantities in the cart.
- Ensure quantities are constrained between 1 and available stock.

2. Promo Code Handling:

- Validate the application of valid promo codes for expected discounts.
- Verify proper error messages for invalid or non-existent promo codes.

- Test applying promo codes under required cart total and ensure they don't apply.

3. Cart Management Edge Cases:

- Adding negative quantities or updating quantities for products not in the cart.
- Adding unrealistic quantities (999999999999)
- Clear cart data by deleting cart cookies and refreshing the page.

4. Sorting and Filtering Functionality:

- Test sorting functionality for criteria like price, popularity, newest, and confirm the expected order.
- Apply multiple filters simultaneously and validate the displayed products match the criteria.

5. Product Examination and Performance:

- Test zoom functionality on product images for detailed views without distortion.
- Verify the comparison feature displays selected products side by side.



6. Performance and Accessibility Testing:

- Measure load times of product pages on various internet speeds to meet performance standards.
- Test accessibility using screen readers ensuring all elements, including product details and filters, are accessible.

7. Error Handling and Security Measures:

- Verify appropriate error messages for non-existent product categories or invalid product URLs.
- Test against scraping attempts and gracefully handle extremely long search queries.
- Test system's response to filters logically resulting in zero products or providing inappropriate values for parameters like products-per-page.

Design Mockups

| Product | Price | Amount | Subtotal |
|--|---------|--------|---------------------------------------|
|   Sorry we're closed T-shirt - XXL | € 35.00 | 1 | € 35.00 |
| | | | <button>update shopping cart</button> |

Total shopping cart

| | |
|----------|---|
| Subtotal | € 35.00 |
| Delivery | Postal: € 9.90 Delivery options are updated at checkout. |
| In total | € 44.90 |

[proceed to checkout](#)

Checkout & Payment

User Stories

1. *Efficient Checkout Process*

- As a buyer, I want a seamless and quick checkout process to complete purchases effortlessly.

2. *Secure Payment Methods*

- As a buyer, I want secure payment options to confidently finalize purchases using my preferred method.

3. *Order Confirmation and Tracking*

- As a buyer, I want timely order confirmation and tracking details post-checkout for transparency and assurance.

4. *Fraud Prevention*

- As a buyer, I expect safeguards against tampering with payment requests to ensure secure transactions.

5. *Flexible Payment Choices*

- As a buyer, I desire flexibility in choosing from various payment methods during checkout for convenience.

6. *Saved Payment Methods*

- As a buyer, I want the ability to save multiple payment methods for future use to expedite future purchases.

7. *Order Modification and Cancellation*

- As a buyer, I want the option to modify or cancel an order shortly after placing it, before shipment.

8. *Return and Refund Process*

- As a buyer, I need clear instructions on initiating returns or refunds if necessary for a hassle-free process.

9. *Real-time Order Tracking*

- As a buyer, I want real-time tracking updates on my orders to stay informed about their status.

10. *Order Status Notifications*

- As a buyer, I want proactive notifications on order status changes (confirmation, shipment, delivery).

11. Guest Checkout and Account Options

- As a buyer, I want the option to checkout as a guest or create an account based on convenience.

12. Preference Retention

- As a buyer, I expect the system to remember and prioritize my preferred payment method for future purchases.

Test Cases

1. Progression to Checkout:

- Validate user progression to checkout with items in the cart.

2. Checkout Form Validation:

- Ensure the checkout form collects all necessary shipping/billing information.

3. Payment Process Validation:

- Validate successful payment using test card data.
- Test different payment methods and verify successful completion of the payment process.

4. Order Confirmation and Email:

- Confirm the order confirmation page displays expected details.
- Validate the order confirmation email content for necessary information.

5. Error Handling in Checkout Form:

- Submit checkout form with incomplete or invalid data formats and ensure appropriate error handling.
- Verify the system's response when incomplete fields prevent progression.

6. Payment Security and Handling:

- Attempt payment with expired credit card data and confirm the system handles it appropriately.
- Test tampering with payment requests and confirm the system's security measures.

7. Checkout Process Options:

- Validate the option to checkout as a guest without mandatory account creation.
- Test creating an account during checkout and confirm saved information for future logins.

8. Order Modification and Cancellation:

- Test modification and cancellation options immediately post-checkout and ensure proper functionality.
- Attempt order cancellation after checkout and verify the system's handling of the process.

9. User Guidance and Accessibility:

- Verify clear and accessible instructions for returns and refunds.
- Validate straightforward checkout steps and responsiveness across various devices.

10. Guest Checkout and Order Recovery:

- Process checkout as a guest and confirm that order history retrieval requires proper account login.

11. Real-time Order Tracking and Notifications:

- Test real-time order tracking feature for accuracy in displaying order status.
- Verify timely notifications at different order stages for users.

Design Mockups

Billing information

First name *

Last name *

Company name (optional)

Country / Region *

Finland

Street address *

Street name and house number

Apartment, Unit, etc. (optional)

ZIP code *

Postal district *

Telephone *

Email address *

☐ Delivery to a different address?

Order comments (optional)

Comment regarding the order, e.g. regarding delivery.

Your order

| Product | Subtotal |
|--------------------------------------|----------------|
| Sorry we're closed T-shirt - XXL * 1 | € 35.00 |
| Subtotal | € 35.00 |
| Delivery | Postal: € 9.90 |
| In total | € 44.90 |

Payment in online banking or by card

Payment in an online bank or by card via Paytrail

Personal information is used for processing orders, supporting the user experience of the site and for other purposes as shown on the page: Privacy protection

send the order

Order Management

User Stories

1. Order History and Status Updates:

- As a customer, I want access to my order history to view status, details, and estimated delivery dates.
- As a customer, I want clear order status breakdowns (e.g., processing, shipped, delivery) within my order history.

2. Notifications and Preferences:

- As a customer, I want customizable notification preferences for order updates (email, SMS, app notifications).
- As a customer, I want real-time notifications for crucial updates like order confirmation, shipment, and delivery changes.

3. Return and Exchange Management:

- As a customer, I want a seamless process to initiate returns or exchanges directly from my order history.
- As a customer, I want to track the status of my return/exchange requests and receive timely updates.

4. Security and Privacy:

- As a customer, I expect the privacy and security measures to prevent access to another user's order history.

Test Cases

1. Review and Payment Validation:

- Validate the review and payment process with different methods (credit card, PayPal) ensuring valid credentials and security features.

2. Order History and Tracking Accuracy:

- Validate the accuracy of order history and details, including order tracking updates at various processing stages.

3. Order Modification and Return Flow:

- Validate the cancellation process before shipping and ensure proper functionality.
- Validate the return/exchange flow from the order history for eligible items, ensuring smooth functionality and updated statuses.

4. Notification Customization and Delivery Dates:

- Test the functionality to customize notification preferences and confirm receipt based on selected preferences.
- Validate estimated delivery dates align with expected times provided during checkout.

5. Security and Privacy Validation:

- Attempt unauthorized access to another user's order history and ensure

appropriate access restrictions.

- Validate system response by modifying order IDs in URLs to prevent access to unauthorized order information.

6. Error Handling and Sensitivity Testing:

- Test handling of invalid credentials during order status checks without disclosing sensitive information or granting access.

- Simulate an unusually large number of returns to verify the system's capability to handle such cases without issues.

Admin Features

User Stories

1. Product Catalog Management:

- As an admin, I want to add/edit product details and manage the catalog effectively.

2. Data Access and Analytics:

- As an admin, I need access to customer and order data for efficient store management.

- As an admin, I want sales and traffic analytics to drive informed business decisions.

3. Authorization and Security:

- As an admin, I expect strict access controls preventing unauthorized access to the product catalog.

4. Catalog Automation and Data Management:

- As an admin, I want the ability to batch upload products via CSV/Excel for streamlined updates.

- As an admin, I want to schedule product releases/updates for automated catalog management.

5. Advanced Data Handling and Analysis:

- As an admin, I require advanced search and filter capabilities for efficient customer and order data management.

- As an admin, I need the ability to export customer and order data for further analysis/reporting purposes.

6. Predictive Analytics and Visual Representations:

- As an admin, I want predictive analytics tools to forecast sales trends and inventory needs.

- As an admin, I desire visual representations (graphs, charts) for better decision-making based on sales and traffic analytics.

Test Cases

1. Product Creation and Update:

- Validate admin ability to create/update products with all necessary fields.
- Ensure new products added by admin correctly appear on the site.

2. Reports and Analytics Validation:

- Validate order/customer reports contain expected essential data.
- Ensure sales statistics reports render the expected results.

3. Authentication and Permissions Testing:

- Attempt admin login with invalid credentials and verify access is denied.
- Test accessing admin URLs without proper authentication to confirm restricted access.
- Attempt admin actions without adequate permissions and verify denial of access.

4. Data Handling and Integrity:

- Add a product with missing required fields and confirm the system prompts for necessary information.
- Edit product details with invalid data formats and verify graceful data handling.

5. Automation and Batch Uploading:

- Validate batch uploading of products via CSV/Excel files and ensure accurate appearance on the website.
- Test scheduling product releases/updates to ensure proper application as intended.

6. Advanced Data Management and Analysis:

- Test advanced search and filtering options for customer and order data to confirm accurate results.
- Validate export functionality for customer and order data, ensuring all necessary information is present.

7. Predictive Analytics and Security Measures:

- Verify accuracy of sales forecasts generated by predictive analytics tools.
- Test visual representations of sales and traffic analytics for valuable insights.

8. Database Integrity and Impact Testing:

- Ensure admin actions (add/edit products, manage customer/order data) do not affect database integrity or cause unexpected errors.