

Requirements Document

Rollenreich

Frontend Systems - Portfolio Assignment 01

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1 Project Overview

Rollenreich is a modern e-commerce web application built with React, showcasing a playful concept around luxury and design-focused toilet paper products. It aims to combine humor and high-end shopping experiences, providing users with an intuitive and visually appealing interface to browse and purchase designer toilet paper.

1.1 Project Background

The concept was born from the idea that even mundane products like toilet paper can be elevated into lifestyle statements. Rollenreich embraces this by offering extravagant and unique product designs, and serves as a demonstration of technical skills in frontend systems, particularly focusing on component-based design, responsive interfaces, and integration with backend APIs.

1.2 Target Audience

The application targets users who:

- Appreciate design and novelty in everyday items
- Seek unique gifts or collector's items
- Have a higher disposable income and appreciate premium quality
- Are interested in eco-conscious, humorous, or limited-edition alternatives
- Are tech-savvy and open to online shopping experiences

1.3 Project Goals

The main goals of the Rollenreich project are:

- Deliver a functional and visually consistent e-commerce webshop built with React, featuring a modular component structure
- Implement smooth navigation between multiple views
- Enable interaction with a backend API through asynchronous calls (e.g., product loading, user authentication)
- Provide a responsive, usable layout for both desktop and mobile users
- Ensure every feature is accessible through the UI (no manual URL manipulation required)

2 Key Features

Features are divided into must-have and nice-to-have based on importance for MVP delivery and alignment with course requirements.

2.1 Must-have Features

MF1: Product Catalog - Clear presentation of all products with filter functions by categories (Luxury, Brand Collaborations, Eco-Friendly), prices, and availability.

MF2: User Accounts - Registration and login system with personal profile, order history.

MF3: Shopping Cart and Checkout - Functional shopping cart with quantity adjustment and a checkout process.

MF4: Product Detail Pages - Detailed information on each product with images, descriptions, prices, and availability.

MF5: Responsive Design - Full functionality on all devices (Desktop, Tablet, Smartphone).

MF6: Search Functionality - Search function for products with filters and sorting options.

2.2 Nice-to-have Features

NF1: Subscription Models - Regular delivery of toilet paper with discount benefits and exclusive products.

NF2: Review System - Ability for customers to rate products and leave reviews.

NF3: Newsletter System - Sign-up for regular updates on new products and special offers.

NF4: Wishlist - Ability to save products for later purchase.

NF5: Limited Editions - Time-limited special offers and exclusive collections.

3 User Roles and Interactions

Rollenreich serves different types of users with varying needs and interaction patterns.

3.1 User Role 1: Unregistered Visitor

- **Description:** First-time or occasional visitors to the website who have not yet created a user account.
- **Responsibilities:** No specific responsibilities within the system.
- **Key Interactions:**
 - Browsing the product catalog
 - Reading product reviews
 - Adding products to the shopping cart
 - Registering for a user account
 - Signing up for the newsletter

3.2 User Role 2: Registered Customer

- **Description:** Users with an account who shop regularly or want to use the benefits of being a registered user.
- **Responsibilities:** Maintaining their own account information, adhering to terms of service.
- **Key Interactions:**
 - Logging in and viewing personal profile
 - Saving delivery information
 - Viewing order history

- Writing product reviews
- Managing subscriptions (if applicable)
- Creating and editing wishlists

3.3 User Role 3: Subscriber

- **Description:** Registered customers who have signed up for a regular delivery subscription for toilet paper.
- **Responsibilities:** Ensuring up-to-date payment information, timely modification or cancellation of subscriptions.
- **Key Interactions:**
 - Selecting and customizing subscription plans
 - Canceling subscriptions
 - Accessing exclusive subscriber offers
 - Managing automatic payments

3.4 User Role 4: Administrator

- **Description:** Staff members with comprehensive rights to manage the webshop.
- **Responsibilities:** Maintaining the product catalog, processing orders, customer management.
- **Key Interactions:**
 - Adding, editing, and removing products
 - Managing orders and order statuses
 - Handling customer data and inquiries
 - Moderating product reviews
 - Creating and sending newsletters

4 User Stories / Use Cases

The following describe the main user stories and use cases for the Rollenreich webshop.

4.1 User Story 1: Product Search and Purchase

ID	US-001
Title	Search for and Purchase a Luxury Toilet Paper Roll
User Role	Unregistered Visitor
Description	As an <i>unregistered visitor</i> , I want to <i>search for luxury toilet paper rolls and purchase one</i> , so that <i>I can find a special gift for a friend</i> .
Acceptance Criteria	<ul style="list-style-type: none">• User can use the search function to search for "Luxury" or "Gold".• User can filter products by price, availability, and category.• User can view product details and reviews.• User can add a product to the shopping cart.• User receives an order confirmation via email.
Priority	High

4.2 User Story 2: Create User Account

ID	US-002
Title	Create a User Account
User Role	Unregistered Visitor
Description	As an <i>unregistered visitor</i> , I want to <i>create a user account</i> , so that <i>I can see my orders and benefit from regular customer advantages</i> .
Acceptance Criteria	<ul style="list-style-type: none">• User can create an account via a "Register" button.• User must provide email, password, and personal information.• System validates the email address format and password strength.• User receives a confirmation email.• After activation/confirmation, the user can log in with their credentials.• User can view and edit their profile after logging in.
Priority	High

4.3 User Story 3: Set Up Subscription

ID	US-003
Title	Set Up a Toilet Paper Subscription
User Role	Registered Customer
Description	<i>As a registered customer, I want to set up a regular delivery subscription for toilet paper, so that I never run out and can benefit from discounts.</i>
Acceptance Criteria	<ul style="list-style-type: none">• User can choose from various subscription options (e.g., monthly, quarterly).• User can select the product type and quantity for the subscription.• System clearly displays discounts and benefits of the subscription.• User must provide payment information for recurring payments.• User receives confirmation of the established subscription.• User can view and manage the subscription in their profile at any time.
Priority	Medium

4.4 User Story 4: Submit Product Review

ID	US-004
Title	Submit a Product Review
User Role	Registered Customer
Description	<i>As a registered customer, I want to submit a review for a recently purchased product, so that I can share my experience with other customers and provide feedback to the manufacturer.</i>
Acceptance Criteria	<ul style="list-style-type: none">• User can only review products they have actually purchased.• Review system allows star rating (1-5) and text comments.• Reviews are moderated before being published.• Other users can mark reviews as helpful.• User can edit or delete their own reviews later.
Priority	Medium

4.5 User Story 5: Newsletter Sign-up

ID	US-005
Title	Sign Up for Newsletter
User Role	Unregistered Visitor / Registered Customer
Description	<i>As a visitor or registered customer, I want to sign up for the newsletter, so that I can be informed about new products, offers, and promotions.</i>
Acceptance Criteria	<ul style="list-style-type: none">• User can find a newsletter sign-up form (e.g., in the footer or a dedicated section).• User needs to provide a valid email address.• System validates the email address format.• User receives a confirmation message upon successful sign-up (potentially requires double opt-in via email confirmation).• User can easily unsubscribe from the newsletter (e.g., via a link in the email).• Administrator can manage the list of subscribers.
Priority	Low

5 Non-Functional Requirements

Beyond the specific features, the application must meet the following quality attributes:

5.1 Usability

The webshop must be intuitive and easy to navigate. Key information (products, prices, cart) should be easily accessible. The checkout process must be clear and straightforward. Consistency in design and interaction patterns across the application is required.

5.2 Responsiveness

The application must be fully responsive and provide an optimal viewing and interaction experience across a wide range of devices, including desktops, tablets, and smartphones. Layouts should adapt to different screen sizes and orientations as best as possible.

5.3 Accessibility

The webshop should take basic accessibility measures into account. This includes, for example, easy keyboard navigation, high-contrast and readable colors, as well as general compatibility with common assistive technologies, as far as this is feasible within the scope of the project.

5.4 Performance

Interactions (e.g., adding to cart, filtering products, navigating pages) should feel instantaneous. Backend response times and queries should be optimized, and frontend assets (images, scripts) should be efficiently managed.

5.5 Security

User data (personal information, payment details) must be handled securely. Input validation must be implemented on both frontend and backend. Secure practices for authentication, session

management, and data transmission are mandatory.

6 Technology Assumptions

- **Frontend Framework:** The application will be developed using the Next.js framework, which combines both frontend and backend in a React-based environment.
- **Styling:** Tailwind CSS will be used for styling the application, enabling utility-first design and consistent styling across components through a scalable and maintainable approach.
- **Backend Interaction:** The frontend will communicate with backend routes using standard Next.js API endpoints, leveraging built-in functionality for server-side logic.
- **Backend Technology:** Backend logic will be integrated into the Next.js application using its built-in API routes.
- **Database & ORM:** PostgreSQL will be used as the database system, with an Object-Relational Mapper (ORM) like Prisma to enable type-safe and efficient database access.
- **Version Control:** Git will be used for version control, with the repository hosted on GitHub.
- **Containerization:** The entire application stack, including the Next.js app and PostgreSQL database, will be containerized and orchestrated using Docker Compose for simplified local development and deployment.

7 Project Constraints

- **Timeline:** The project must be completed within the timeframe specified by the Frontend Systems course, including the final submission deadline (2025-07-30).
- **Team Size:** The development team consists of 4 students. Workload distribution and collaboration are key constraints.
- **Scope Limitation:** Due to time constraints, not all "Nice-to-have" features may be fully implemented. Priority will be given to "Must-have" features and core functionality.
- **Resource Availability:** The project relies on the availability and stability of the custom-built backend API. Any changes in the backend may affect the frontend development.
- **Technology Stack:** The mandatory use of React for the frontend dictates certain architectural choices and development practices.

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