Swinburne University of Technology

COS30043 – Interface Design and Development

Semester: 1 2025

Report

NAME: Serena Truong STUDENT ID: 104480538

Contents

Overview:

The Beauty Serena application is an e-commerce platform designed to provide users with a seamless shopping experience for beauty products. The application allows users to browse products, create accounts, log in, and integrate social features such as like the products. The primary goal is to create an intuitive interface that enhances user engagement and simplifies the purchasing process.

Main Functionality

1. User Registration and Authentication:
    - Users can sign up by providing their first name, last name, email, username, and password.
    - The application validates user input and securely stores user credentials in a database.
    - Users can log in using their credentials, and their session is maintained throughout their interaction with the app.
    - The authentication user can like the product, comment and delete the comment of the product.
2. Product Browsing:
    - Users can view a list of beauty products, complete with images, descriptions, prices and title of the products.
    - The application supports searching and filtering products by categories, enhancing the user experience
    - The application allows users to update quantities or remove items from the cart.
3. User Interaction and Functional in Home page:
    - Users can see all the products of our website, but they cannot buy and like, comment for products.
    - Only authenticated users can add products to their shopping cart, view cart contents, and proceed to buy now products.
    - The application displays the number of like for each product and allows users to manage their comments.
4. Pagination:
    - The new list or product list supports pagination, allowing users to navigate through multiple new lists or products.
    - In New page, each news item includes fields such as date, title, short news content, and category. In Home page, each product includes Search bar and category dropdown box to filter the product.

5. Display selection:
    - Include input fields for the user's first name and last name, displaying a personalised welcome message based on the user's name and show the chosen image based on the user's selection from two radio buttons, such as "Mountain" or "Ocean".

6. Responsive Design:
    - The application is designed to be mobile-friendly, ensuring a consistent experience across devices.

7. Advance feature:
    - Each product card includes a 'Buy Now' button that allows users to purchase products directly.
    - Upon clicking the 'Buy Now' button, a success message is displayed, confirming the purchase.

Technical Components and Tools Used

1. Frontend:

The frontend of the application was built using Vue.js 3 and the Bootstrap grid framework, providing a modern, responsive user interface. The application uses Vue components to manage different pages and functionalities such as new page, home page, about page, login, registration, product browsing, and purchasing. Bootstrap's grid system ensures the layout is mobile-friendly and accessible across devices. The app includes dynamic features such as real-time form validation, conditionally rendered messages (e.g. login success/error), and a "Buy Now" button that confirms purchases successfully. The project is structured and compiled using Vite, which offers fast build times and efficient development support.

2. Backend:

The backend is developed using PHP and connected to a MySQL database through phpMyAdmin. It handles critical operations such as user authentication (login/registration), user validation, and interaction with the product database. Backend scripts fetch data from the database using SQL queries and return structured JSON responses to the frontend. The frontend uses these JSON responses to dynamically update the UI. Error handling and response messaging ensure that the frontend provides clear feedback to the user. This separation of concerns between frontend and backend makes the application scalable, secure, and maintainable.

PHP: The server-side scripting language used to handle requests, manage user authentication, and interact with the database.

MySQL: A relational database management system used to store user data, product information, and like/comment, or insert, update the product.

3. Development Tools:

Visual Studio Code: An integrated development environment (IDE) used for coding and debugging.

Innovative Features and Unique Approaches:

1. User – centric design:
   The application emphasises user experience by providing a clean and intuitive interface, making it easy for users to navigate find products

2. Real-Time Validation:
   The signup and login forms include real-time validation, providing immediate feedback to users about their input, which enhances usability and reduces errors

3. Comment and Like System:
   The ability for users to leave comments and like products creates a sense of community and encourages user interaction, which is often lacking in traditional e-commerce platforms.

4. Advanced Feature:
   The addition of a "Buy Now" button on each product card allows users to make purchases quickly and easily, enhancing the shopping experience. With the feature of VueJs, it helps my website is

5. Responsive Design:
   The application is fully responsive, ensuring that users have a consistent experience whether they are on a desktop, tablet, or mobile device.

Challenges Encountered and Solutions

1. Database Connection Issues:

Initially, there were challenges connecting to the database due to incorrect credentials and configuration settings. This was resolved by double-checking the connection parameters and ensuring that the database server was accessible.

The server maintenance during weekend, so I got in trouble with display the data and test the user validation from the database.

2. Cross-Origin Resource Sharing (CORS)

During the development, CORS issues arose when making API requests from the frontend to the backend. This was resolved by configuring the server to allow requests from the frontend domain.

Conclusion

Overall, the Beauty Serena application successfully combines user-friendly design with robust functionality, providing a comprehensive e-commerce solution for beauty products. By modern technologies and innovative features, the application enhances user engagement and simplifies the shopping experience. The challenges encountered during development provided valuable learning opportunities, ultimately leading to a more resilient and effective application.