COURSE CODE: (ITC 226)

WEB SYSTEMS AND TECHNOLOGIES

PREPARED BY

ABDUL AHAD

01-135221-001

SUBMITTED TO:

MS ALIYA AMIR

FRONTEND STACK

React.js and Node.js

GITHUB Link
https://github.com/ahadufx/ecommercereact

Frontend Frameworks and Libraries:

React Router DOM: React Router DOM is utilized for implementing dynamic routing within the web application. It facilitates the display of pages and enables users to navigate them efficiently. This library serves as a comprehensive client and server-side routing solution for React applications.

Bootstrap: Bootstrap, an open-source front-end development framework, is employed to streamline the creation of websites and web applications. It offers a collection of syntax for designing responsive, mobile-first websites, thus enhancing the visual appeal and user experience.

Vite: Vite serves as a frontend tool for building fast and optimized web applications. It leverages a modern build system and a rapid development server to ensure a smooth and efficient development experience.

TypeScript (TSC): TypeScript is integrated into the frontend stack to enhance the productivity, maintainability, and scalability of the project. By incorporating static typing, TypeScript provides improved code safety and robustness.

IMPLEMENTATION APPROACH

Component-based Architecture:

The project adopts React's component-based architecture to promote code reusability and maintainability. Frontend components are designed and implemented to ensure modularity and scalability.

TESTING STRATEGY

Unit Testing:

Comprehensive unit tests are written using Jest and React Testing Library to validate individual components and functions. This ensures the reliability and correctness of frontend elements.

Integration Testing:

Integration testing is conducted to verify the seamless interaction between frontend components and external services or APIs.

User Acceptance Testing:

User acceptance testing is performed to gather feedback from real users and refine the application based on their interactions and preferences.

EVALUATION

The frontend stack, comprising React.js, Node.js, React Router DOM, Bootstrap, Vite, and TypeScript, offers numerous advantages:

Scalability and Flexibility:

The modular nature of React.js and Node.js enables the development of scalable solutions, while TypeScript enhances code maintainability and scalability.

Developer Productivity:

Bootstrap streamlines UI development, Vite accelerates the development process, and TypeScript ensures type safety, thereby boosting developer productivity and efficiency.

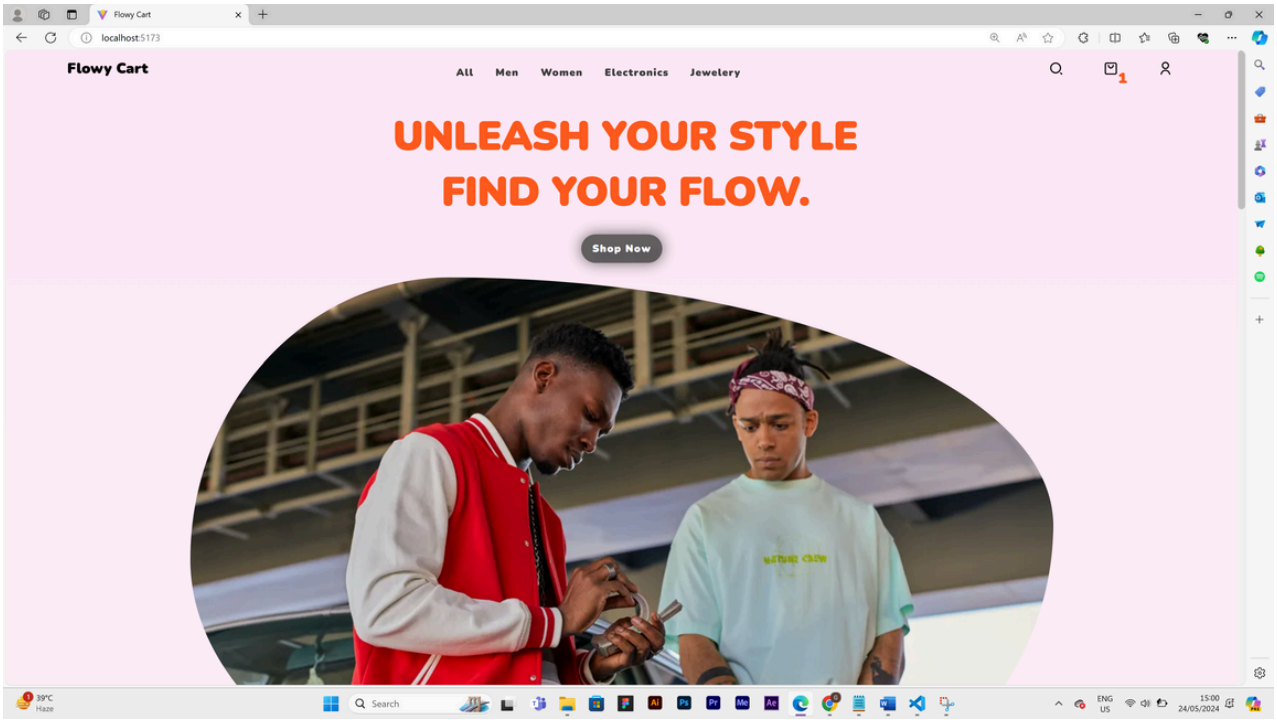
Enhanced User Experience:

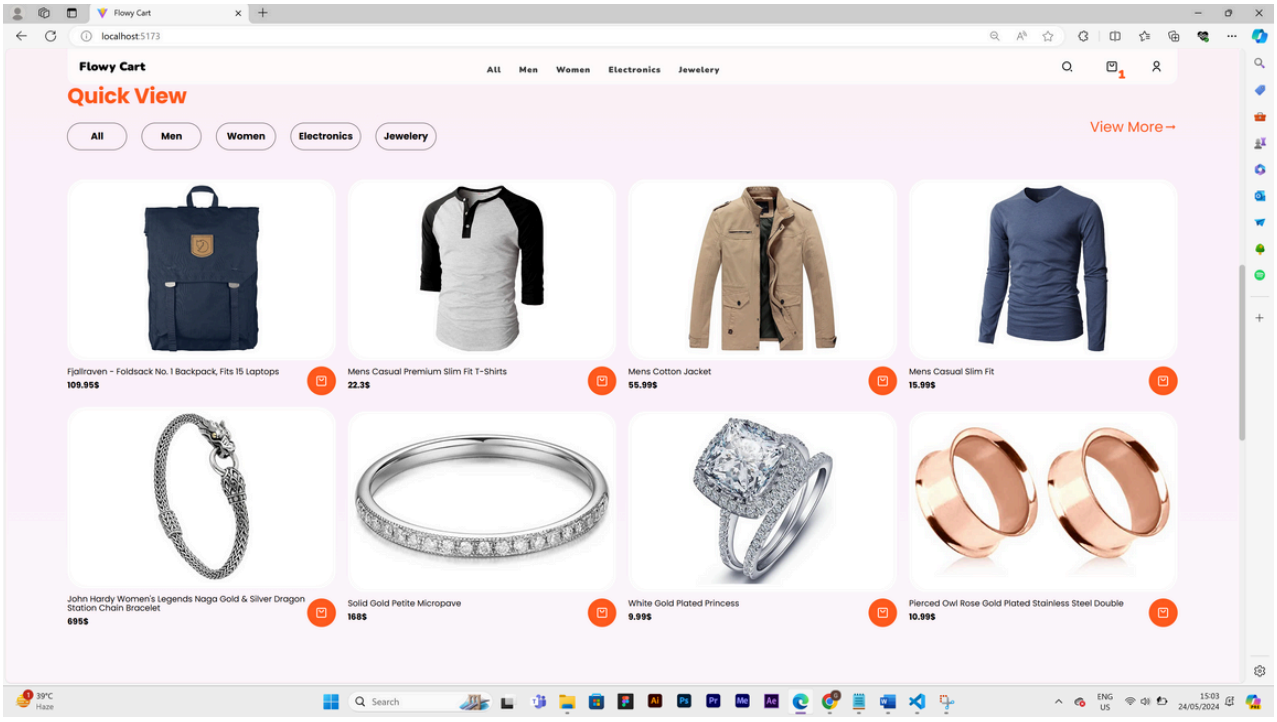
React Router DOM facilitates seamless navigation between pages, contributing to an enhanced user experience.

CONCLUSION

In conclusion, the frontend stack consisting of React.js, Node.js, React Router DOM, Bootstrap, Vite, and TypeScript provides a solid foundation for building robust and scalable web applications. By adhering to best practices in design, implementation, and testing, developers can create dynamic and feature-rich applications that meet the demands of modern users.

SCREENSHOTS

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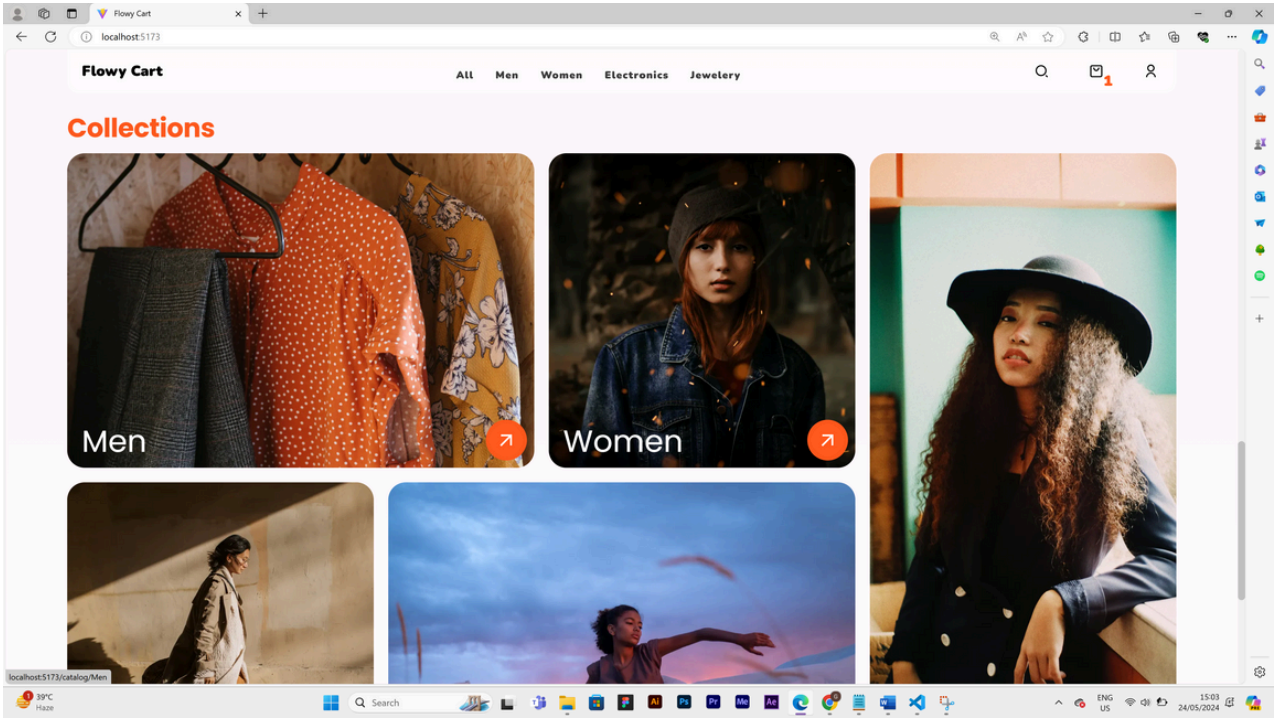
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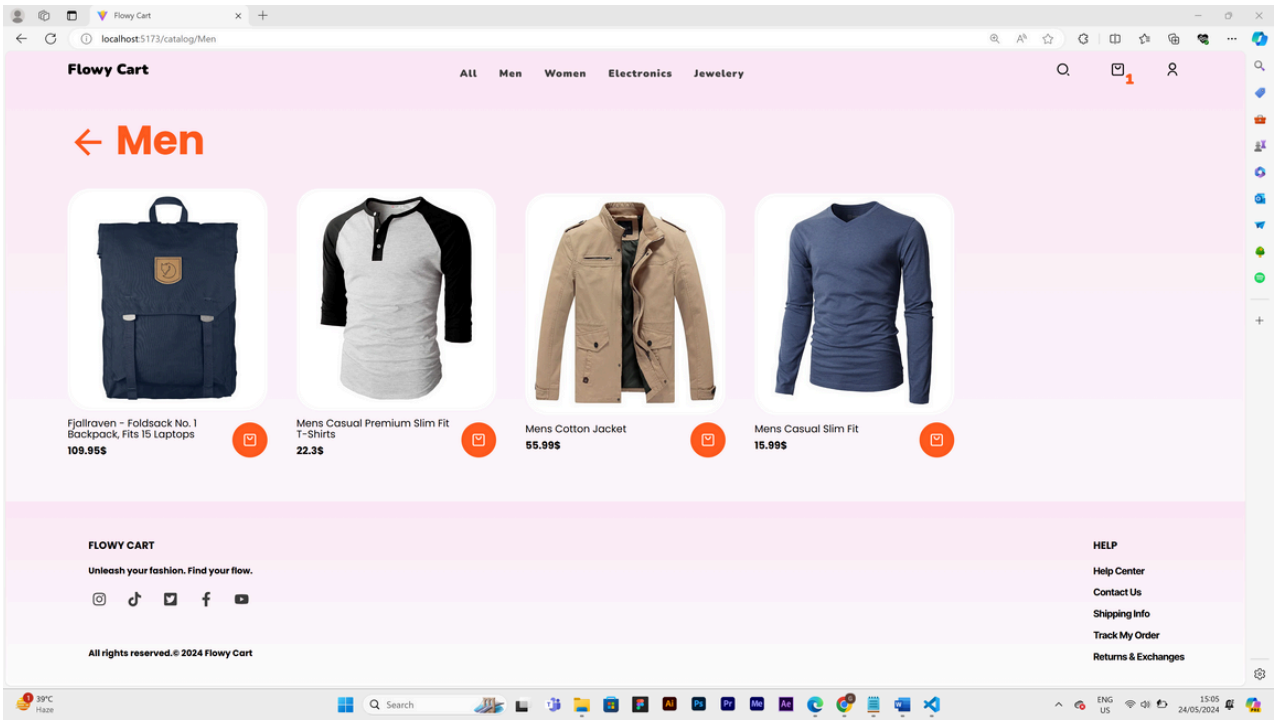
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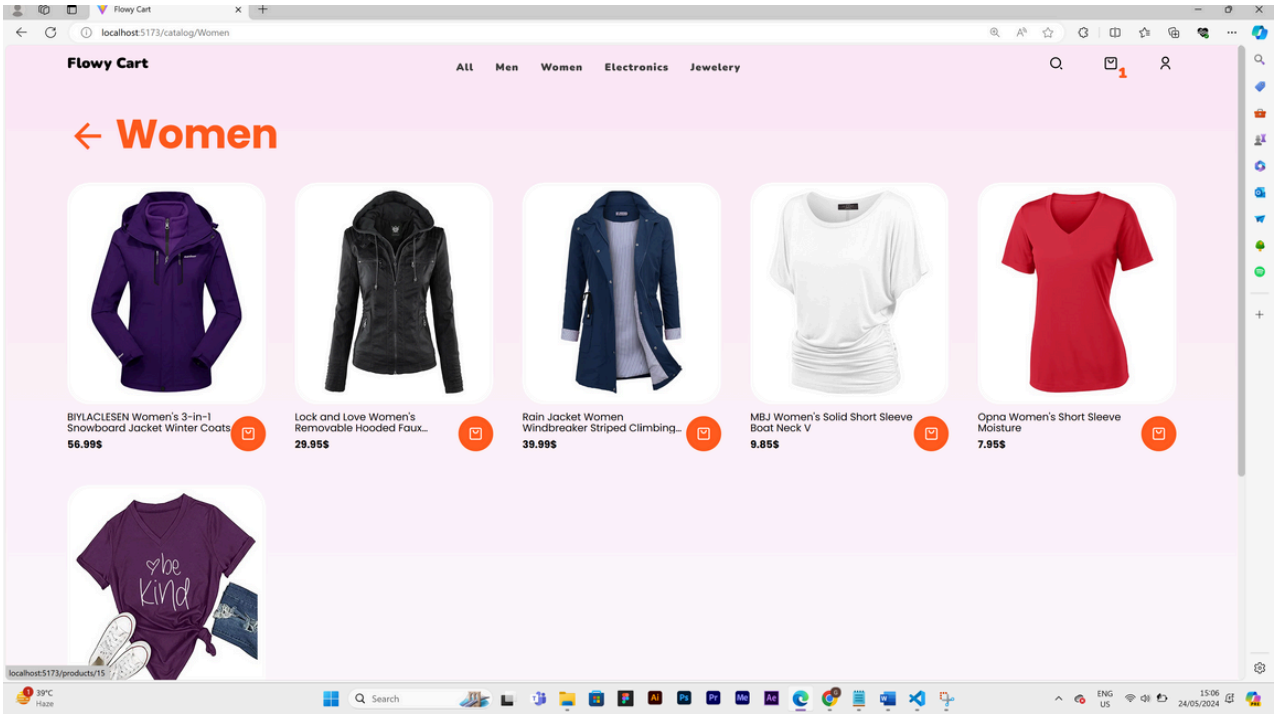
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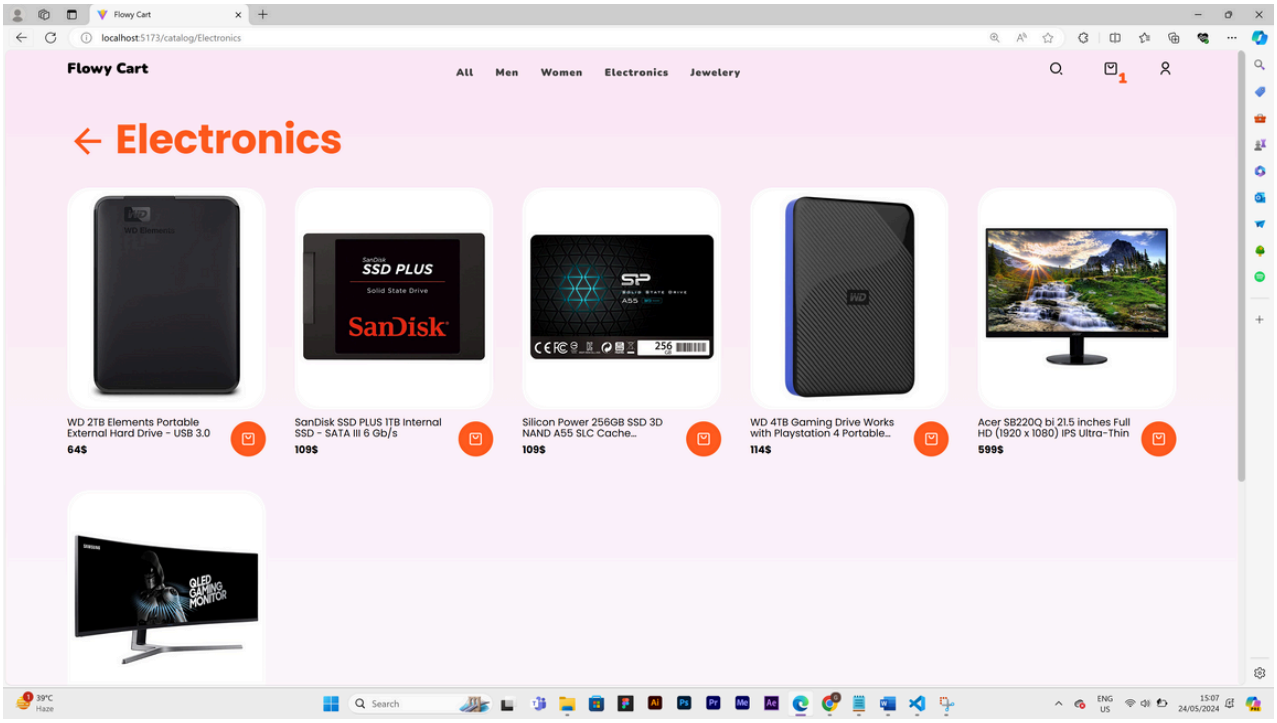
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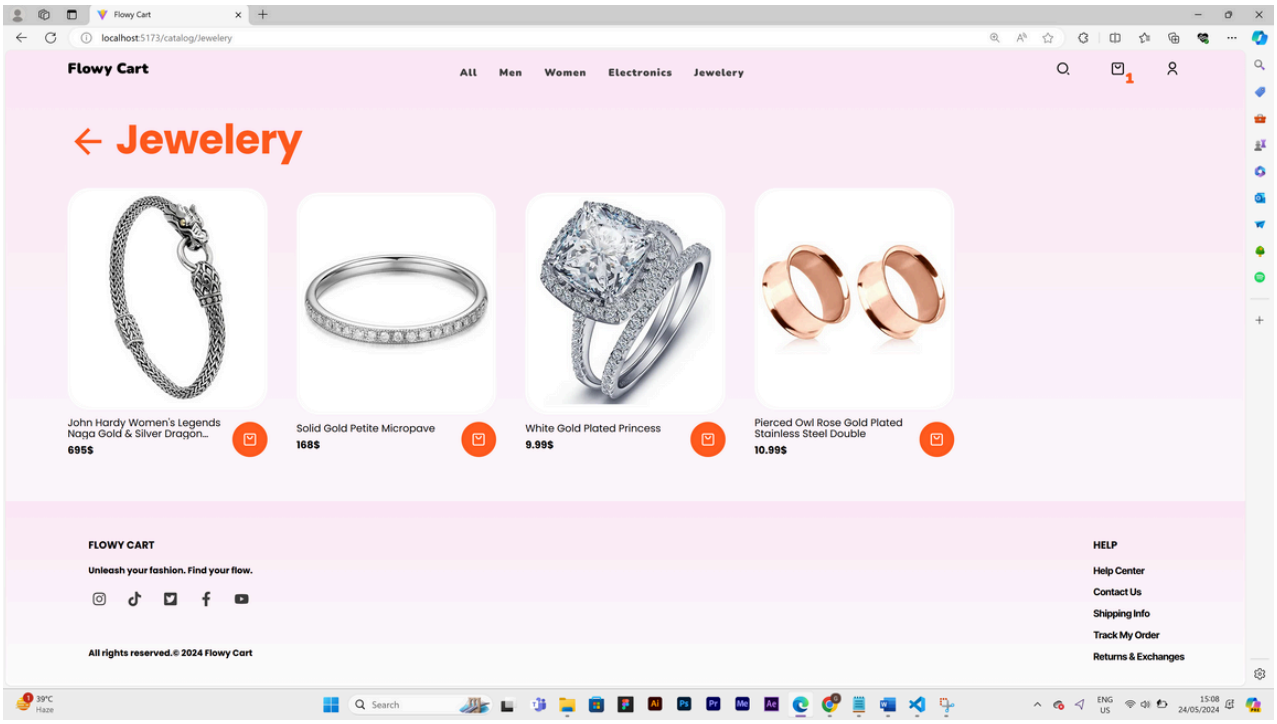
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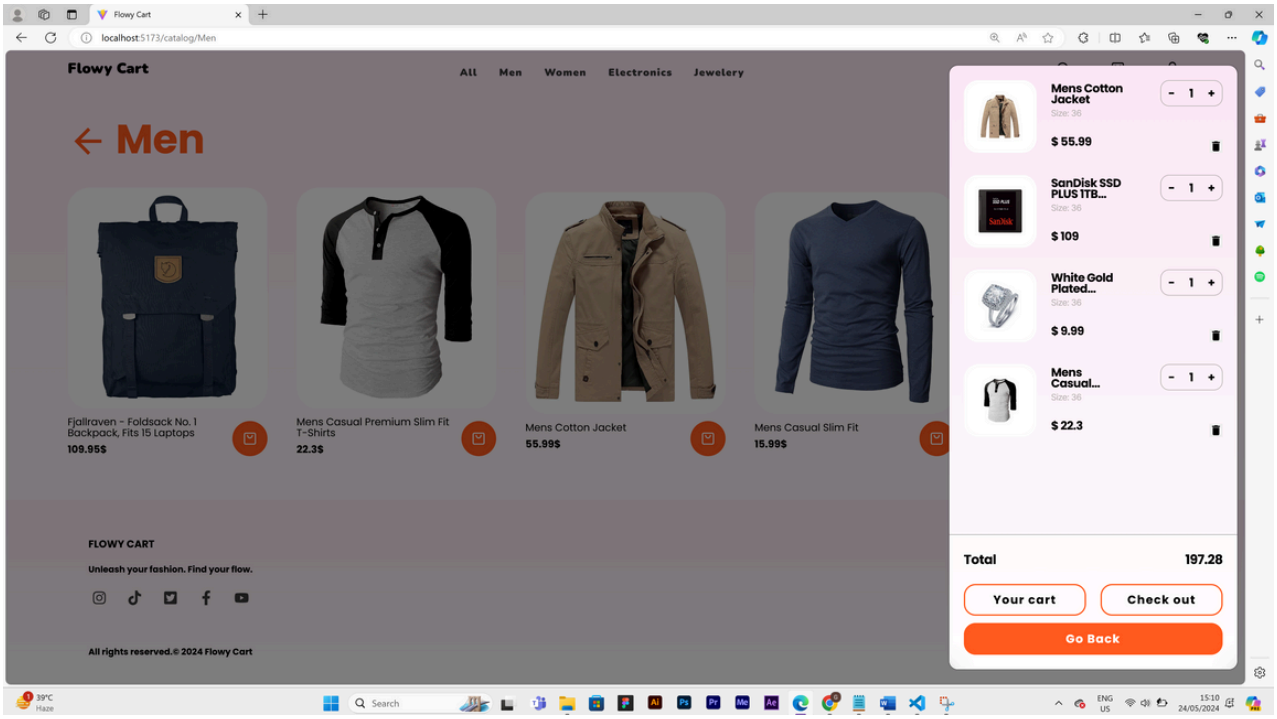
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