

**VIETNAM NATIONAL UNIVERSITY - HO CHI MINH CITY
UNIVERSITY OF TECHNOLOGY
FACULTY OF COMPUTER SCIENCE AND ENGINEERING**



SUBJECT REPORT

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- MAJOR: COMPUTER SCIENCE**
- PROGRAM: HIGH QUALITY**

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1 Introduction

The purpose of this assignment is to design and develop a personal blog web application. The main goal of this project is to create my own blog website where I can share my thoughts, life experiences, and lessons learned throughout my journey. Additionally, this project serves as an opportunity to apply the knowledge and techniques learned from the web development course.

The website was built from scratch using HTML, CSS, JavaScript, and PHP. It consists of multiple pages, including a homepage, an about page, a contact form, login/logout functionality, and a product listing page. The application integrates both front-end and simple back-end features to provide a complete and interactive web experience.

The development process focuses on applying front-end design principles, organizing content effectively, and ensuring usability across different devices through responsive design.

This report is organized as follows: Section 2 describes the system design and architecture. Section 3 presents the implementation details. Section 4 concludes the report with lessons learned during the development process and suggestions for future improvements.

2 Design Choices

2.1 Layout

I chose my layout like amazon website. The color choices follow very deliberate UX, branding, and psychological principles.

- Black used for text, navigation bars, headers and footers. It presents the strong, stable and neutral psychology. Moreover, black creates contrast with the white background, improving readability.
- Light background ensures product images remain the focus. Second, it makes the site feel bright, clean, and modern.
- Blue links ensures trust, reliability and calmness. Blue links are also a web-standard, improving intuitiveness.

To conclude, every color supports a purpose:

- High contrast improves accessibility.
- Blue links respect user expectations.
- White background maximizes clarity for product images.
- Green buttons give safety and positivity.

2.2 Diagrams

2.2.1 ERD (Entity-Relationship Diagram)

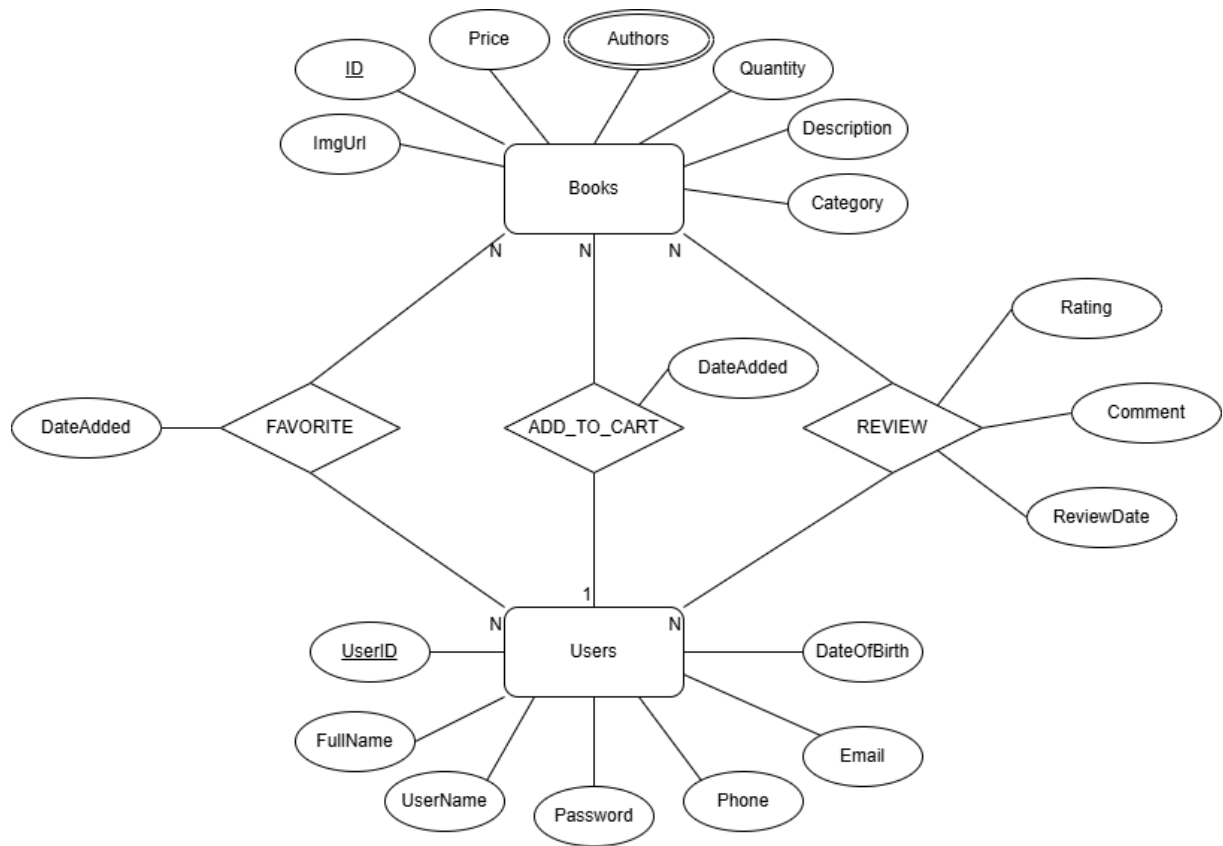


Figure 1: Caption

2.2.2 Sequence Diagram

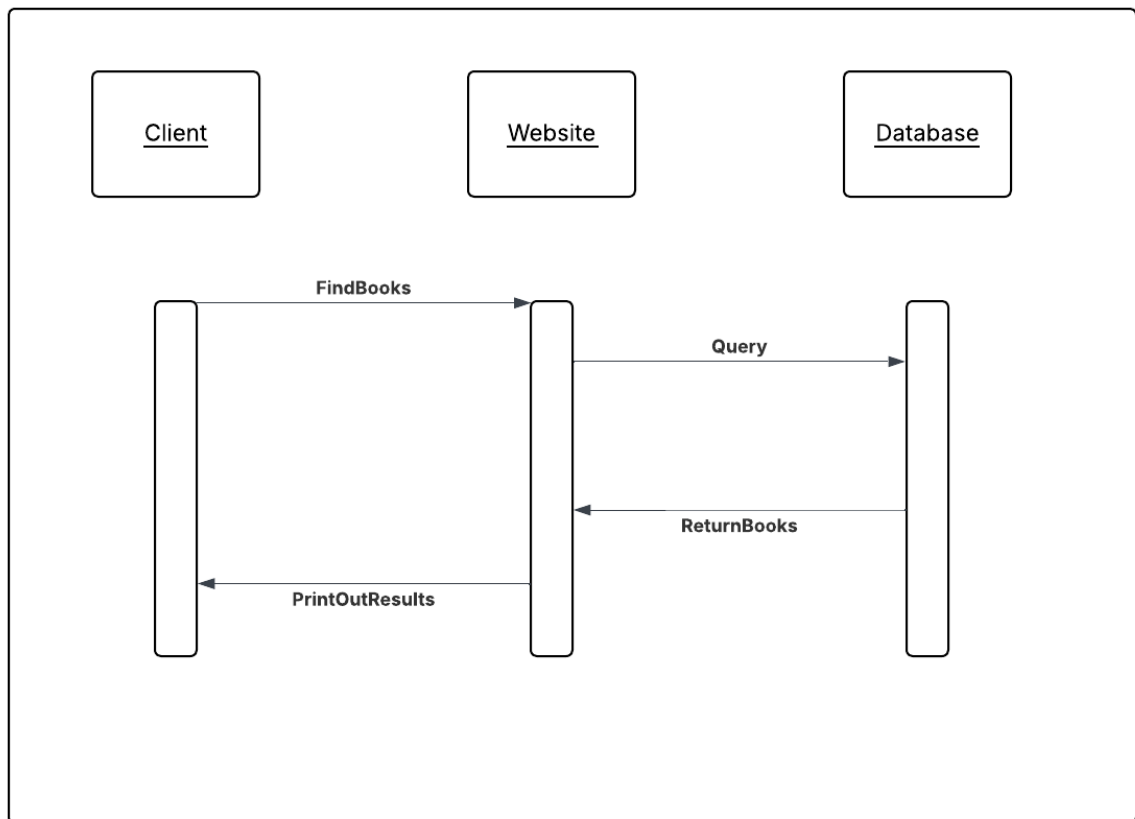


Figure 2: Caption

2.2.3 Use Case Diagram

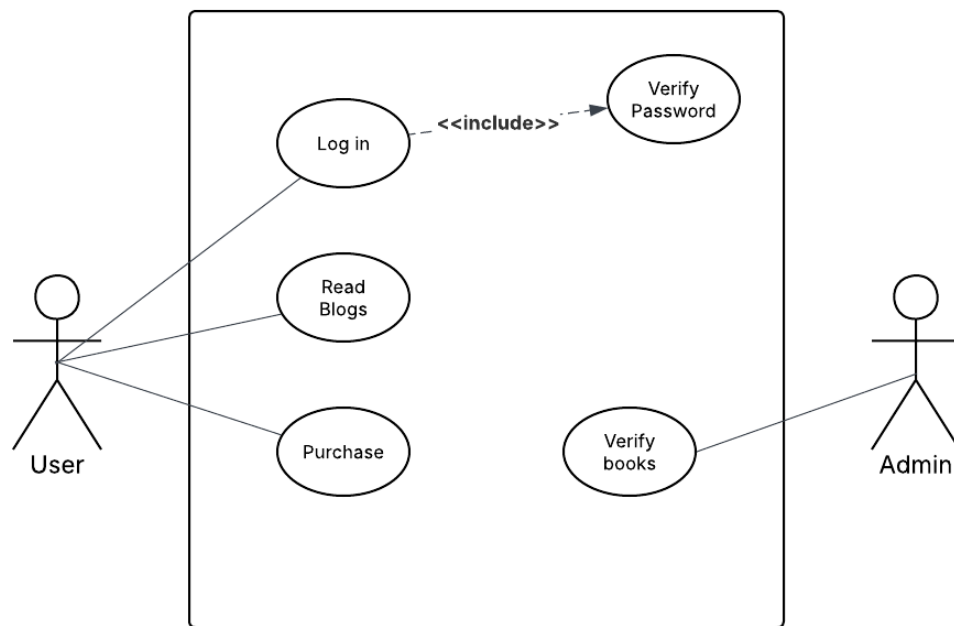


Figure 3: Caption

2.3 Web Pages

2.3.1 Header



Figure 4: Header of Website

2.3.2 Footer



Figure 5: Footer of Website

2.3.3 Home

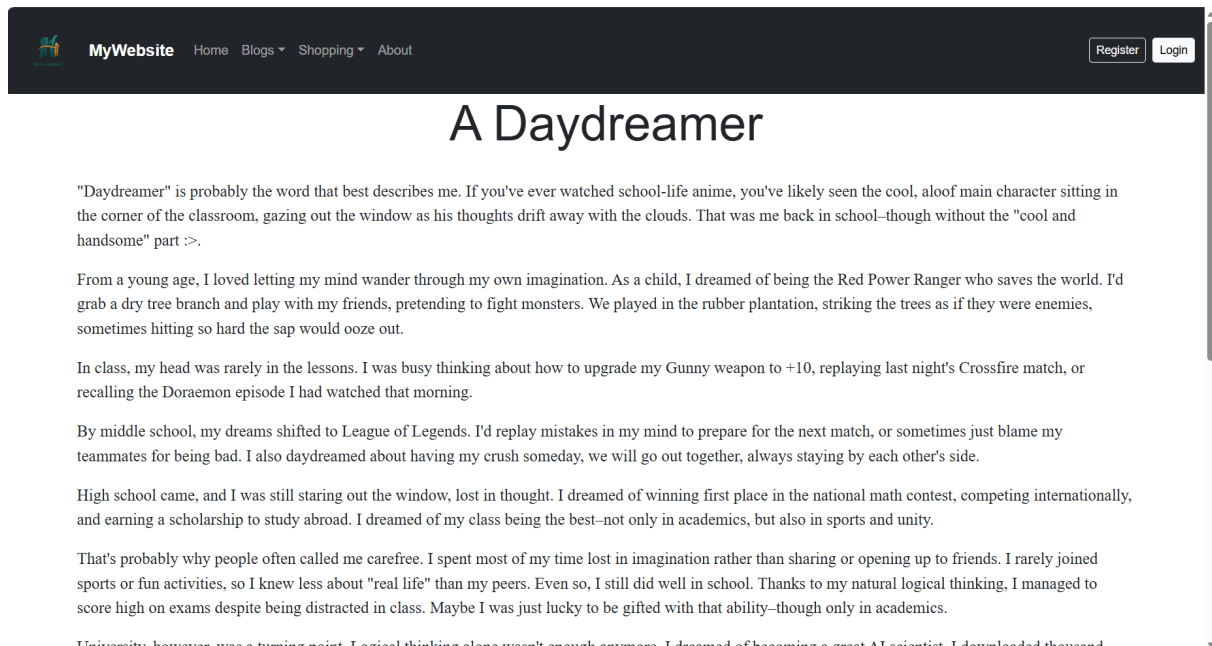


Figure 6: Home Page

2.3.4 Product Pages

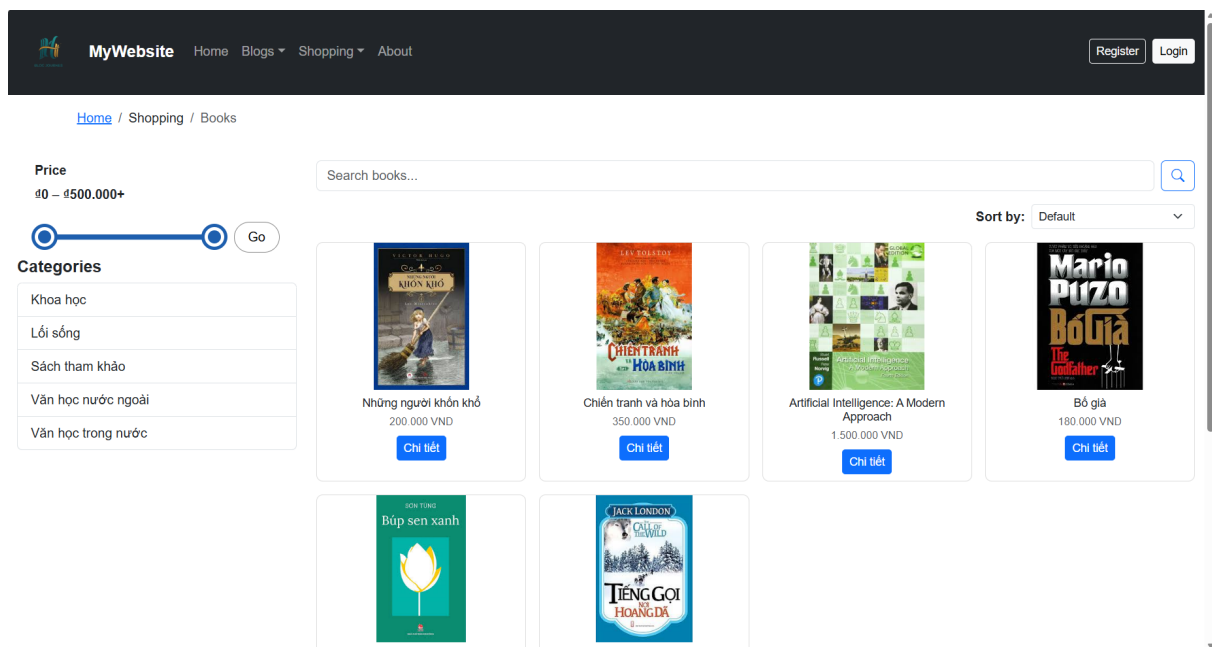


Figure 7: Product Page

2.3.5 Product Details

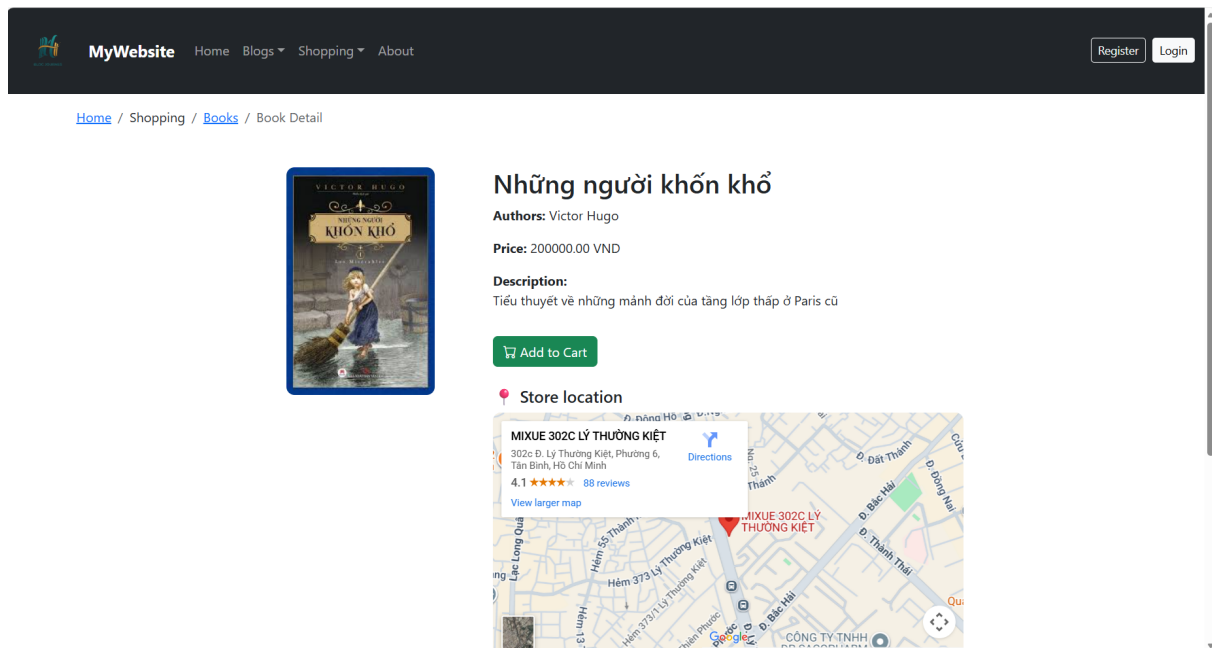


Figure 8: Product Details

2.3.6 About

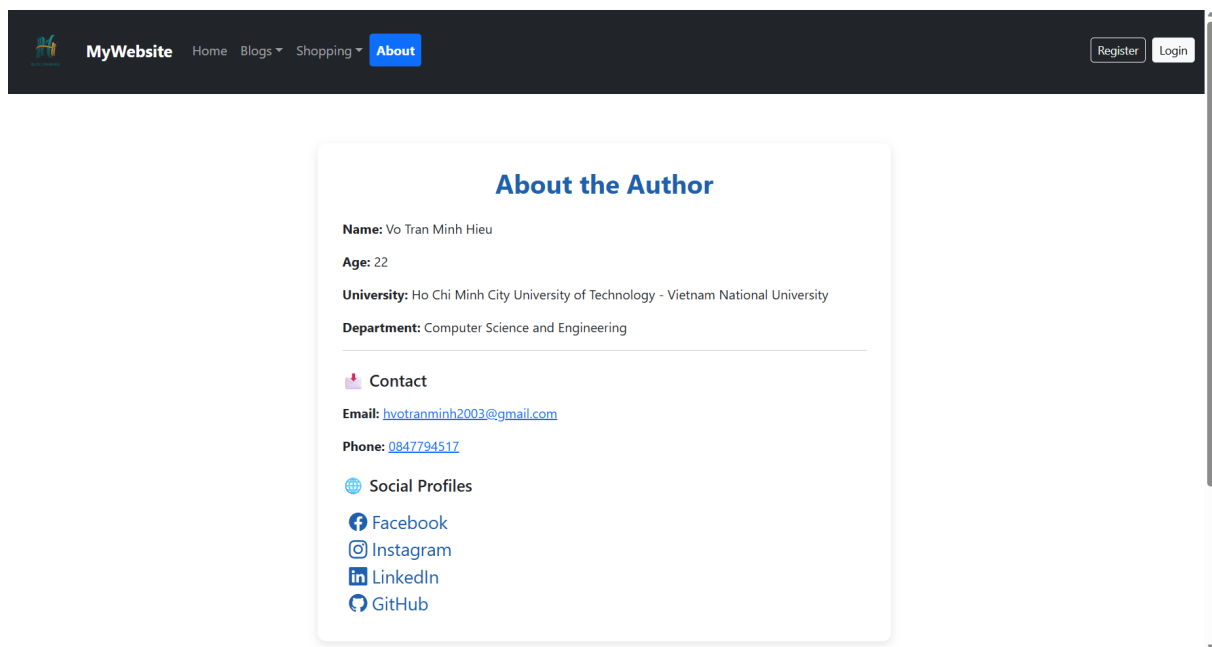
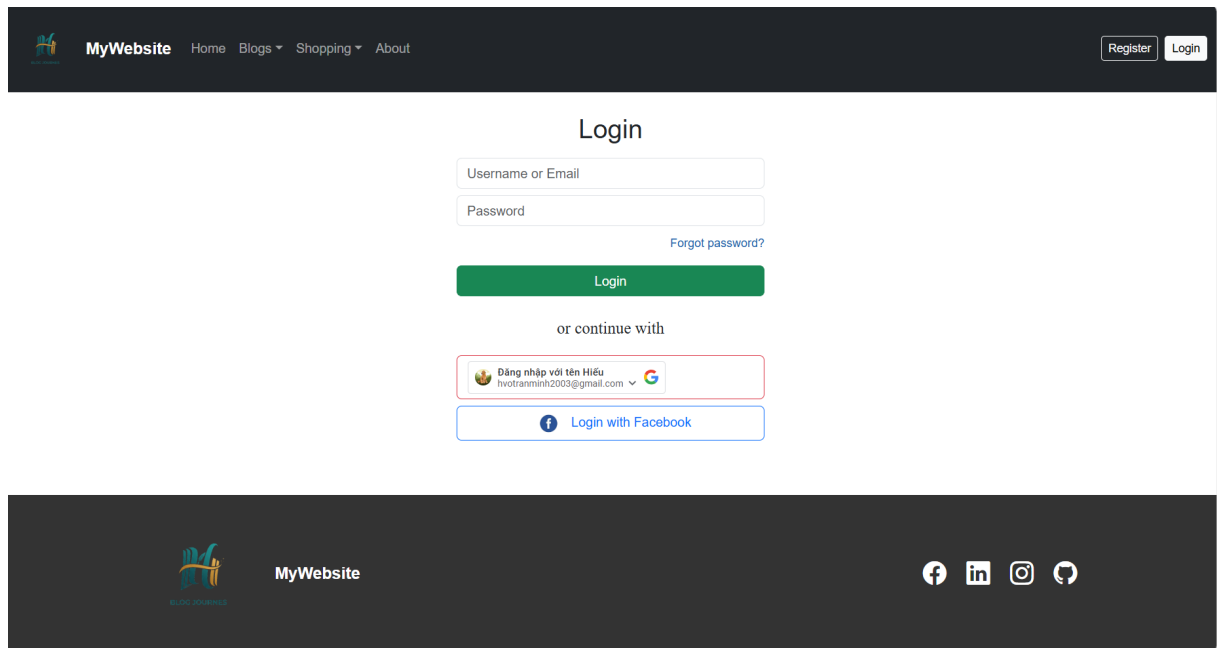


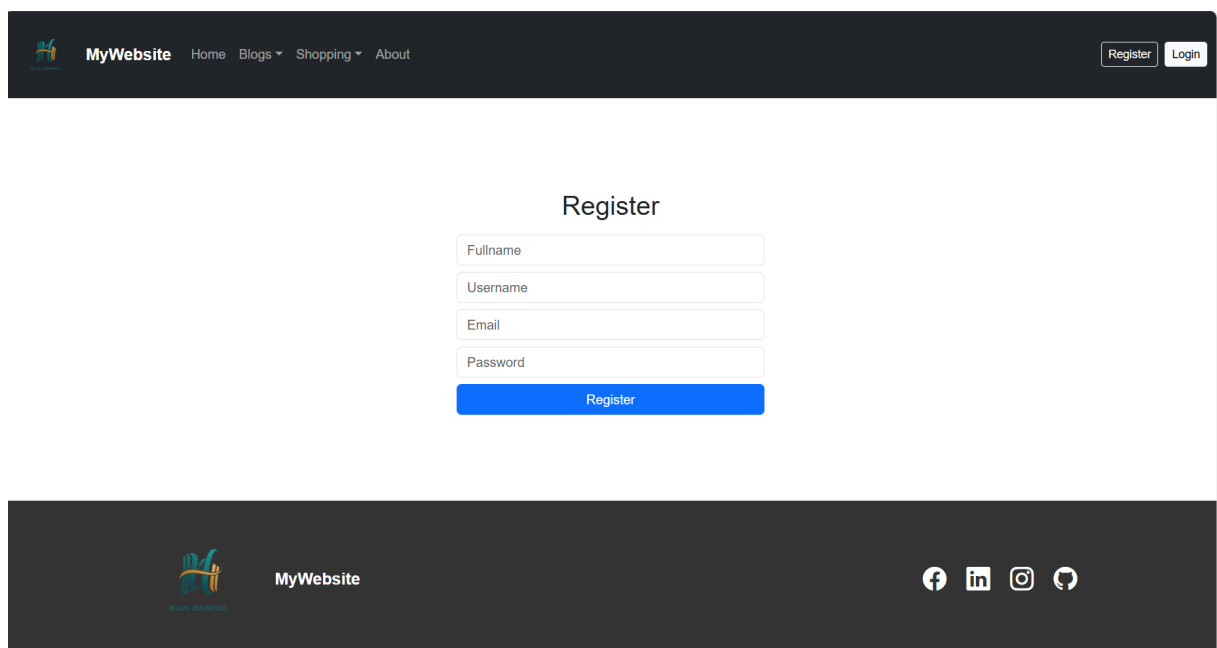
Figure 9: About

2.3.7 Authentication



The login page features a dark header with the 'MyWebsite' logo and navigation links (Home, Blogs, Shopping, About). On the right, there are 'Register' and 'Login' buttons. The main content area is titled 'Login' and contains a form with 'Username or Email' and 'Password' input fields, a 'Forgot password?' link, and a green 'Login' button. Below the form, it says 'or continue with' and provides options to 'Đăng nhập với tên Hiếu' (with a dropdown menu showing 'hvoitranminh2003@gmail.com') and 'Login with Facebook'.

Figure 10: login



The register page has a similar dark header with the 'MyWebsite' logo and navigation links. On the right, there are 'Register' and 'Login' buttons. The main content area is titled 'Register' and contains a form with 'Fullname', 'Username', 'Email', and 'Password' input fields, followed by a blue 'Register' button.

Figure 11: register page

3 Implementation Details

The complete implementation can be accessed in the GitHub repository: [Github link](#).

4 Conclusion

4.1 Lessons Learned

Throughout the course and the process of completing this assignment, I have gained substantial knowledge and practical experience across various aspects of software development and project management.

I learned to use **GitHub** for version control and collaborative development, which enhanced my understanding of source code management, branching strategies, and issue tracking. This provided me with essential skills for maintaining structured and organized software projects.

From a technical perspective, I developed proficiency in **HTML**, **CSS**, and **JavaScript**, which enabled me to design and implement interactive and visually appealing web interfaces. On the backend, I acquired foundational skills in **PHP**, which allowed me to build server-side logic and manage communication between the **frontend**, **backend**, and **database** layers.

Furthermore, I learned to design and implement **relational databases**, write **SQL queries**, and perform data management tasks efficiently. I also utilized the **Bootstrap** framework to streamline the process of creating responsive web layouts. Through this, I gained an appreciation for the importance of appropriate layout design, including the selection of suitable dimensions, colors, and structures to ensure a consistent user experience.

In developing the **product page**, I implemented **pagination** and **lazy loading** to enhance performance and optimize data retrieval. Additionally, I integrated **AJAX (Asynchronous JavaScript and XML)** to enable seamless communication between the client and server. This approach improved responsiveness by allowing the webpage to update dynamically without requiring a full reload, thereby providing a smoother user experience.

Beyond core development, I explored the integration of **external APIs** such as **Google Maps** and **Facebook**, expanding the functionality and interoperability of the application. I also implemented **user authentication features**, including user registration, login, and password recovery through email verification, to ensure secure access control.

Finally, I studied **Search Engine Optimization (SEO)** techniques to improve the visibility and accessibility of the website to potential users.

In summary, this assignment provided me with comprehensive, hands-on experience in **end-to-end web development**—from user interface design and backend logic to database management and deployment. It also allowed me to document and describe the system through **database schemas** and **software architecture diagrams**, reinforcing both my technical and analytical skills in software engineering.

4.2 Future Improvements

In the future, I plan to implement the following improvements:

- Add detailed content for the remaining incomplete pages.



- Implement a shopping cart and payment methods.
- Develop a user information page that includes basic profile data, account balance, and starred (favorite) products.
- Implement features that allow me to create new articles and users to create new reviews.
- Complete the properties outlined in the ERD.