Development of an Electronics Sales Website Using Spring Boot

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***Abstract*—This thesis presents the construction of an electronic goods trading website using the Spring Boot framework. The author, Phùng Công Đoàn, developed the system, enhancing their understanding of Spring Boot and ReactJS, and explored the Model-View-Controller (MVC) architecture. The work also improved the author's research and documentation skills. The website was designed to facilitate the buying and selling of electronic goods, with a focus on user-friendly interfaces and robust backend functionality. The project involved designing and implementing key features such as user registration, product listings, and search functionalities. The author faced challenges in integrating ReactJS with Spring Boot, which required careful planning and implementation. Future development plans include enhancing the website's aesthetics and adding online payment features through ATM and VISA.**

***Index Terms*—Spring Boot, ReactJS, electronic goods, web development, MVC architecture, online trading**

I. Introduction

The thesis introduces the fundamental concepts of Java, Spring Boot, and ReactJS, providing a comprehensive overview of the technologies used in building an electronic goods trading website. The author analyzed and designed the system, implemented its functions, and documented the process. The project aimed to create a platform that would enable users to buy and sell electronic goods efficiently. The author chose Spring Boot for its simplicity and efficiency in building web applications, while ReactJS was selected for its powerful front-end capabilities. The author also explored the Model-View-Controller (MVC) architecture, which is crucial for separating concerns in web development. The project involved understanding and applying the MVC architecture, which helped in organizing the codebase and improving the overall structure of the website [1]. Published books on the methods and subject of this project provide context for this English summary [5]. Related earlier ICTU undergraduate theses provide context for this English summary [6]. Published articles on the methods and subject of this project provide context for this English summary [7]. Published books on the methods and subject of this project provide context for this English summary [8], [9], [10].

II. Methods

The methods section covers the theoretical foundations of Java, Spring Boot, and ReactJS, including their key features and benefits. The author utilized these technologies to develop a website for electronic goods trading, focusing on the Spring Boot framework and ReactJS for front-end development. The author implemented key features such as user registration, product listings, and search functionalities. The implementation process involved creating a database schema to store user and product information, developing RESTful APIs using Spring Boot, and implementing ReactJS components for the front-end. The author also integrated Spring Security for user authentication and authorization, ensuring the security of the website. The project faced challenges in integrating ReactJS with Spring Boot, which required careful planning and implementation. The author documented the entire process, including code snippets and design decisions, to ensure clarity and reproducibility [1].

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III. Results

The author successfully designed and built the system, enhancing their knowledge of Spring Boot and ReactJS. The project involved understanding and applying the MVC architecture and improving documentation skills. The implemented functions included user registration, product listings, and search functionalities. The website was tested using sample data, and the author documented the results, noting that the system performed as expected. However, the project did not include a comprehensive evaluation of the website's performance or user experience. Future development plans include enhancing the website's aesthetics and adding online payment features through ATM and VISA [1].

IV. Discussion

The discussion highlights the importance of the Spring Boot framework and ReactJS in web development, emphasizing the benefits of using these technologies for building robust and scalable applications. The author reflects on the challenges faced during the development process and suggests areas for future improvement. The author notes that the integration of ReactJS with Spring Boot was a significant challenge, requiring careful planning and implementation. The author also mentions the importance of user experience and the need for more comprehensive testing in future iterations. The author suggests that future work should focus on improving the website's aesthetics and adding online payment features, which would enhance the user experience and functionality of

the platform [1]. Earlier ICTU undergraduate work by Vũ Mai Phương addressed online product sales [4].

V. Conclusion

The thesis concludes that the author has gained a deeper understanding of Spring Boot and ReactJS through the development of the electronic goods trading website. Future work will focus on enhancing the website's appearance and adding online payment functionalities. The author acknowledges the limitations of the current project, such as the lack of a comprehensive evaluation of the website's performance and user experience. The project has laid a solid foundation for future improvements and enhancements to the website [1].

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