Analysis and Construction of a Credit Management System Based on a Credit System at the Faculty of Information Technology, Thai Nguyen University

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***Abstract*—This thesis analyzes and constructs a credit management system based on the credit system at the Faculty of Information Technology, Thai Nguyen University. The system aims to improve the convenience and efficiency of credit management for administrators, teachers, students, and other relevant parties. The research covers the design and development of the system using SQL Server 2005 and Visual Basic 2005, focusing on user interface, data access, and system functionality. The system is expected to support Unicode, be user-friendly, and efficiently handle data updates and queries. However, due to time and knowledge constraints, the system still faces limitations, particularly in advanced statistical features. The initial implementation addresses some issues but requires further development to meet all requirements.**

***Index Terms*—credit management, system design, SQL Server, Visual Basic, use case, data access**

I. Introduction

The thesis introduces the credit system, including the credit system, training programs, courses, and the current status of the system. The objectives, application scope, target users, and expected outcomes of the research are outlined. Requirements from administrators, management departments, leaders, and students are identified, and the selection of development tools, such as SQL Server 2005, is discussed. The research aims to develop a system that can support the credit management process, ensuring that it is user-friendly and efficient. The system is expected to handle data updates and queries effectively, supporting the needs of various stakeholders in the Faculty of Information Technology [1]. Related earlier ICTU undergraduate theses provide context for this English summary [9]. Published books on the methods and subject of this project provide context for this English summary [10].

II. Methods

The research employs SQL Server 2005 for database management and Visual Basic 2005 for system development. The system design includes use case diagrams, class diagrams, and state diagrams. The system is designed to be user-friendly, support Unicode, and efficiently handle data updates and queries. The system's functionality is demonstrated through a series of use cases, including login, searching, registration, and data management. The use case diagrams provide a clear understanding of the interactions between different system components, while the class diagrams and state diagrams help in visualizing the system's architecture and behavior. The system's initial implementation addresses some issues but requires further development to meet all requirements [1].

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III. Results

The thesis reports an initial credit-management application based on the faculty's credit system. It describes functions for user login, searching, registration, data updates, and record management, with a Visual Basic and SQL Server implementation. The author also identifies remaining work on statistical functions, web access, and user guidance. The source does not provide measured task times, usability scores, or a comparison with the earlier process. Consequently, the documented result is the implemented set of functions and the stated limitations, not a verified increase in efficiency or ease of use [1].

IV. Discussion

The first implementation covers several administrative and student workflows, but the thesis itself calls for further development. It specifically identifies missing advanced statistics and the need for web forms, improved data access, and clearer guidance for users. The summary therefore treats usability and speed as design intentions rather than measured findings. Evaluating practical adoption would require a documented deployment and observations from staff and students. The available manuscript supports an account of the system's design and initial functions, together with the author's stated development priorities [1]. Earlier ICTU undergraduate work by Nguyễn Thị Hồng Vân addressed online course registration at Thai Nguyen University [8].

V. Conclusion

The thesis concludes that the developed system is useful for credit management but requires further development to fully meet the needs of the institution. The system's initial implementation addresses some issues but needs additional time and effort to be fully operational. The limitations of the system, particularly in advanced statistical features, indicate the need for further research and development to fully meet the needs of the institution [1].

References

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