Construction of a Library Management Software

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***Abstract*—This thesis explores the development of a library management software using Visual Basic, a programming language suitable for Windows applications. The author analyzes the requirements for a library management system and designs the software to manage books, journals, and user information. The software was tested and found to function without issues, managing books and journals, providing quick searches, and handling user management. However, some functionalities, such as user registration, were not fully implemented. The software successfully managed books and journals, provided quick searches, and handled user management. Future development plans include adding functions for order management and web-based information retrieval. The project was challenging for a novice, but the author gained significant experience in software development and system design. Future work will focus on expanding the software's functionalities.**

***Index Terms*—Visual Basic, library management, database design, software development, user interface**

I. Introduction

In today's global economy, information technology has significantly impacted various sectors. This thesis focuses on the development of a library management software using Visual Basic, a powerful and dynamic programming language. The author examines the activities of a library, including cataloging, user registration, and service provision, to design a software system that simplifies library management tasks. The author conducted a thorough analysis of the requirements for a library management system and designed the software using Visual Basic. The system includes features for user management, book information management, borrowing, returning, and searching. The software was tested to ensure it meets user needs. The project was challenging for a novice, but the author gained significant experience in software development and system design. [1]

II. Methods

The author conducted a thorough analysis of the requirements for a library management system and designed the software using Visual Basic. The system includes features for user management, book information management, borrowing, returning, and searching. The software was tested to ensure it meets user needs. The author used Microsoft Access for database management and Visual Basic for the front-end interface. The software was tested on a Windows environment to ensure compatibility and functionality. The author faced several challenges, including the complexity of the Visual Basic language and the need to integrate various functionalities into a cohesive system. The software was tested through user feedback and internal testing to identify and resolve any issues. [1]

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III. Results

The software was tested and found to function without issues, managing books and journals, providing quick searches, and handling user management. However, some functionalities, such as user registration, were not fully implemented. The software successfully managed books and journals, provided quick searches, and handled user management. The author tested the software by simulating user interactions and found that the system performed well in managing books and journals. The software was able to perform searches quickly and accurately, and user management functions were effective. However, the user registration process was not fully implemented, which limited the software's ability to fully manage user information. [1]

IV. Discussion

The software development process provided the author with valuable experience in programming and system design. Future improvements include adding order management and web-based search functionalities to enhance the software's capabilities. The author faced several challenges during the development process, including the complexity of the Visual Basic language and the need to integrate various functionalities into a cohesive system. The software was tested through user feedback and internal testing to identify and resolve any issues. The author believes that the software can be improved by adding more advanced features, such as order management and web-based search functionalities, to better serve the needs of library users. The author also suggests that future work should focus on expanding the software's functionalities to meet the evolving needs of the library. [1]

V. Conclusion

The author successfully developed a library management software using Visual Basic, which managed books and user information effectively. The project was challenging for a novice, but the author gained significant experience in software development and system design. The software was tested and found to function without issues, managing books and journals, providing quick searches, and handling user management. The author believes that the software can be improved by adding more advanced features, such as order

management and web-based search functionalities, to better serve the needs of library users. Future work will focus on expanding the software's functionalities to meet the evolving needs of the library. [1]

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