Construction of a Library Management Website with Integrated Intelligent Chatbot Q&A for High School Hiệp Hòa 2, Bắc Giang

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***Abstract*—This thesis develops a library-management website for Hiep Hoa 2 High School in Bac Giang and integrates a question-answering chatbot. The source describes ASP.NET for the website, SQL Server for records, and an LM Studio API connection for AI responses. Implemented functions include book and user management, document lookup, and assistance with routine questions. The author's conclusion presents the application as useful for school-library work but also notes that the interface needs refinement and chatbot answers need greater accuracy. The manuscript does not provide a quantified comparison of management time, retrieval success, or educational benefit.**

***Index Terms*—library management, chatbot, ASP.NET, SQL Server, AI, high school**

I. Introduction

A school library needs to maintain book and borrower information while helping students and teachers find materials. The thesis takes Hiep Hoa 2 High School as a case and proposes a website combining conventional library records with a chatbot interface. Its goal is to support book administration and access to information through the same site. The report reviews the technologies selected for the application before describing its design. Claims about educational or operational improvements require separate measurement beyond the functions documented in the source [1]. Published articles on the methods and subject of this project provide context for this English summary [8]. Published books on the methods and subject of this project provide context for this English summary [9].

II. Methods

The author analyses the library's basic processes and designs website functions for books, users, and document search. The implementation uses ASP.NET with SQL Server for storing and retrieving records. An LM Studio API connection supplies answers in the chatbot interface. The report describes the system screens and the resulting workflow. This summary treats those as implementation evidence, while avoiding an unsupported claim of a controlled user study or measured chatbot accuracy. The source itself identifies answer quality and interface design as continuing work [1].

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III. Results

The source reports a functioning website with book administration, user administration, material lookup, and chatbot question answering. The chatbot is connected to the site so that visitors can ask for assistance while searching for information. These features demonstrate a student implementation for the named high school. The author also notes that the user interface and chatbot accuracy need further improvement. No measured staff time savings, response correctness rate, or comparison with the school's prior process is reported [1].

IV. Discussion

Combining record functions with conversational assistance may make a library website easier to navigate, but the thesis does not quantify such an effect. The implemented functions give a basis for practical testing with librarians, students, and teachers. The source identifies two constraints that matter for that next step: the interface experience and the accuracy of generated answers. More systematic evaluation would need representative questions, criteria for correct responses, and a comparison with ordinary search and manual library procedures [1].

V. Conclusion

The thesis delivers a library website for Hiep Hoa 2 High School with a linked chatbot. ASP.NET, SQL Server, and an LM Studio API are described in the implementation. The resulting functions support book and user management, document search, and question answering. The author's conclusion also identifies interface and chatbot-answer limitations. The manuscript supports a functional prototype, but it does not establish measured improvements in library efficiency or user learning. Those outcomes remain subjects for later evaluation [1].

References

[1] Phạm Văn Vĩnh, "Construction of a Library Management Website with Integrated Intelligent Chatbot Q&A for High School Hiệp Hòa 2, Bắc Giang," internal undergraduate thesis (original in Vietnamese), Thai Nguyen University of Information and Communication Technology, 2025.
[2] Microsoft. ASP,NET Core MVC Documentation, 05/05/2023, từ https://docs.microsoft.com/en-us/aspnet/core/mvc/
[3] Microsoft. Entity Framework Core Documentation, 05/05/2023, từ https://docs.microsoft.com/en-us/ef/core/
[4] Microsoft. ASP.NET Identity Documentation, 05/05/2023, từ https://docs.microsoft.com/en-us/aspnet/core/security/authentication/identity

[5] Bootstrap Team. Bootstrap 5 Documentation, 05/05/2023, từ https://getbootstrap.com/docs/5.2/getting-started/introduction/
[6] LM Studio. LM Studio Documentation, 05/05/2023, từ https://lmstudio.com/docs
[7] Microsoft. SQL Server Documentation, 05/05/2023 ,từ https://docs.microsoft.com/en-us/sql/sql-server/
[8] Prof. Prajakta Jadhav, Alim Samnani, Aman Alachiya, Vraj Shah, Alexander Selvam, ”Intelligent Chatbot,” International Journal of Advanced Research in Science, Communication and Technology, pp. 679-683, 2022. DOI: 10.48175/ijarsct-3996.
[9] A. Silberschatz, H. F. Korth, and S. Sudarshan, Database System Concepts, 5th ed. McGraw-Hill, 2005. ISBN 9780072958867.