Development of an Application to Support Algorithm Teaching at Chua Hang 2 Secondary School, Dong Hy, Thai Nguyen

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***Abstract*—This thesis describes the development of an application to support algorithm teaching at Chua Hang 2 Secondary School in Dong Hoi, Thai Nguyen. The application was built using Visual Studio and includes features such as data input, algorithm display, and conversion of algorithms into programming commands. The application successfully converts algorithms into easily understandable commands, closely resembling the language used in everyday Vietnamese. Future development plans include expanding the system to allow independent access to the school's lecture repository and enhancing the command recognition functions using artificial intelligence. The application was developed by a student, Nguyen Van Thiem, as part of his undergraduate thesis. The project aimed to provide a user-friendly tool for teachers and students to facilitate the learning and teaching of algorithms. The application was tested for its ability to convert algorithms into programming commands, and the results showed that the commands were easily understandable and closely resembled the language used in everyday Vietnamese. The development process followed both system design and practical requirements, and the application successfully supported algorithm teaching by converting algorithms into easily understandable commands. Future work will focus on expanding the system's functionality and improving command recognition through artificial intelligence.**

***Index Terms*—Visual Studio, algorithm teaching, programming commands, data input, command conversion**

I. Introduction

The thesis provides an overview of the Visual Studio environment, highlighting its multi-platform, multi-language, and rich feature set. It then details the development of a software application to support algorithm teaching, focusing on functions such as data input, algorithm display, and command conversion. The application was developed by Nguyen Van Thiem, a student at the University of Information Technology and Communication, as part of his undergraduate thesis. The project aimed to provide a user-friendly tool for teachers and students to facilitate the learning and teaching of algorithms. The application was developed using Visual Studio, a powerful integrated development environment (IDE) that supports multiple programming languages and platforms. The development process followed both system design and practical requirements, ensuring that the application would meet the needs of both teachers and students [1]. Published books on the methods and subject of this project provide context for this English summary [4], [5].

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II. Methods

The application was developed using Visual Studio, with specific attention to features like data input, algorithm display, and command conversion. The software was tested for its ability to convert algorithms into easily understandable commands, closely resembling the language used in everyday Vietnamese. The development process involved several stages, including requirements gathering, system design, implementation, and testing. The requirements were gathered from both teachers and students to ensure that the application would meet their needs. The system design phase involved creating a detailed design document that outlined the application's architecture and functionality. The implementation phase involved coding the application using Visual Basic .NET, a programming language supported by Visual Studio. The testing phase involved validating the application's ability to convert algorithms into programming commands and ensuring that the commands were easily understandable and closely resembled the language used in everyday Vietnamese [1].

III. Results

The application successfully implemented functions to input and display algorithms, and convert them into programming commands. The commands were found to be easily understandable and closely resembled the language used in everyday Vietnamese. The development process followed both system design and practical requirements, and the application successfully supported algorithm teaching by converting algorithms into easily understandable commands. The application was tested for its ability to convert algorithms into programming commands, and the results showed that the commands were easily understandable and closely resembled the language used in everyday Vietnamese. The application was developed by Nguyen Van Thiem, a student at the University of Information Technology and Communication, as part of his undergraduate thesis. The project aimed to provide a user-friendly tool for teachers and students to facilitate the learning and teaching of algorithms [1].

IV. Discussion

The application demonstrated the ability to convert algorithms into programming commands in a user-friendly manner. Future development plans include expanding the system to allow independent access to the school's lecture repository and enhancing the command recognition functions using artificial intelligence. The application successfully supported algorithm teaching by converting algorithms into easily understandable commands. The application was developed by Nguyen Van Thiem, a student at the University of Information Technology and Communication, as part of his undergraduate thesis. The project aimed to provide a user-friendly tool for teachers and students to facilitate the learning and teaching of algorithms. The application was tested for its ability to convert algorithms into programming commands, and the results showed that the commands were easily understandable and closely resembled the language used in everyday Vietnamese. The application was developed using Visual Studio, a powerful integrated development environment (IDE) that supports multiple programming languages and platforms. The development process followed both system design and practical requirements, ensuring that the application would meet the needs of both teachers and students [1].

V. Conclusion

The application successfully supported algorithm teaching by converting algorithms into easily understandable commands. Future work will focus on expanding the system's functionality and improving command recognition through artificial intelligence. The application was developed by Nguyen Van Thiem, a student at the University of Information Technology and Communication, as part of his undergraduate thesis. The project aimed to provide a user-friendly tool for teachers and students to facilitate the learning and teaching of algorithms. The application was tested for its ability to convert algorithms into programming commands, and the results showed that the commands were easily understandable and closely resembled the language used in everyday Vietnamese. The application was developed using Visual Studio, a powerful integrated development environment (IDE) that supports multiple programming languages and platforms. The development process followed both system design and practical requirements, ensuring that the application would meet the needs of both teachers and students [1].

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