

**VISUAL DEVELOPMENT TOOL SUPPORT FOR
ENHANCING PERFORMANCE AND QUALITY OF
DEVELOPER WORK**

U.I. Heenatigala

168223F

This dissertation submitted in partial fulfilment of the requirements for the Degree of
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Department of Computer Science and Engineering

University of Moratuwa
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DECLARATION

I declare that this is my own work and this dissertation does not incorporate without acknowledgement any material previously submitted for degree or Diploma in any other University or institute of higher learning and to the best of my knowledge and belief it does not contain any material previously published or written by another person except where the acknowledgement is made in the text.

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Dr. Indika Perera

Supervisor (University of Moratuwa)

ABSTRACT

There is a very limited number of visual development tools that support a software developer. The aim of this study was to develop a visual development tool and determine the effect of the tool on developing performance and quality of work of a developer. The research was conducted in five steps. Develop version 0.1 of the tool with basic requirements. Conduct a survey for the initial tool. Update the tool according to the survey results. Release version 1.0 of the tool to the sample with development tasks. Finally analyse the results. Thirty developers from the Srilanka were randomly selected using the convenience sampling method. Testing method was used to identify the efficiency of the developers and observation method was used to explore the quality of the work. Paired t-test in R package 2019 was used to compare the time taken to complete the given tasks using the tool and without the tool. The quality of work is measured by coding standards followed and also the structure of the code is inspected to determine how the developer has gone about solving the problem. Three tasks with varying complexities were given. Task 1 which is the least complex didn't give a significant result(P value >0.05). Task 2 and Task 3 development time analysis gave a positive result for using the tool(P value < 0.05). There are further features that need to be added to make it a product that can be used by the masses. Suggestions, a real-time preview of the generated code, more built in components and better style (css) generation are some of those features. The quality standards in readability and code reuse were improved by using the tool.

The results conclude that the importance of visual development tools to enhance the performance and quality of the developer according to the complexities of the tasks. Not only the statistical analysis but also the developer interviews also confirm this. Further, there is an added advantage that helps new vue developers to learn as well. As future work we plan to enhance the tool according to the suggestions given.

Keywords - Developer tools, Vue, Vue drag and drop, Developer performance, Code quality

DEDICATION

To all the parties
who are interested in the field of
Computer Science

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