Universiti Teknologi MARA

Web-Based RIG Performance Reporting System Using Interactive Visualization Techniques

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ABSTRACT

The development of Web-Based RIG Performance Reporting System is a solution to the CoRe department to generating the report from the system. This system can visualize the data from the database in order to analyze the performance. The problem occurs when CoRe department needs to generate a report of RIG performance, they are using manual approaches. With this system, CoRe department does not need to use a manual approach to analyze the content. A study found that the visualization tools nowadays are not free, and it is expensive, so this system will help CoRe department in visualizing data. This project software development process used an agile model SDLC to develop the system. The system architecture which consists of a user interface, web framework and storage data. D3.js is used as a technology to visualize the result in interactive form or dynamic visualization which is a JavaScript library and Python is a language to program the system. For the user to analyze the result, the system provides visual analytics technique which can educate the user on analyzing the result which is drill down and sorting function to educate users. The result of this project is all algorithm for visualizing data is functioning and the output produced from the system is correct and effective. A conclusion that can be made is the development of Web-Based RIG Performance Reporting System is important for helping CoRe department in generating the report and help them to understand the significance of data in visual context.

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CHAPTER 1

INTRODUCTION

This chapter delivers the background and basis for the study. It also details of the problem that led to the research, objectives of research, the scope of project research and significance of research analysis.

1.1 Background of study

Research Interest Group or RIG is the research support of the Universiti Teknologi MARA. It was created to be an excellent management center for world-class research, development, consultancy and research publication. The Community of Research (CoRe) is a part of Research Interest Group Department. CoRe will assist researchers to team up with like-minded academics and suggest to them avenues which would enable the researcher to pursue excellence in conducting research and innovation in addition to helping academics to foster inter-disciplinary and trans-disciplinary collaborations. RIG needed the report of the progress of each research team every year because they need to see their performance. The information required in the report is about lecturers' research grant, information on lecturer's publication and also consultancy management. Currently, CoRe department have generated the report using manual approach. The challenges in generating the report are they have to manually go to the each of the systems which is iRES, PRISMa and also ICONS. These data are stored in a different database system that contributed to the problem to hidden data, especially when they need to access the data to analyze. For example, they need to see about lecturer research grant, the data is not clearer due to a large amount of data in the system. Therefore, the solution is creating an effective web-based data visualization system for RIG is conducted to make an improvement of the analyzing part with interactive automated visualization thus to prevent being hidden or separated.

Many studies of web-based data visualization systems are projected to provide data and tools to inform and support the users. At the same time, the systems help the users