

NATIONHOOD LITERACY WEB PORTAL WITH DATA VISUALIZATION

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ABSTRACT - The exponential growth of data every day poses a huge challenge for humans to manage and use it efficiently. This challenge is also affected by politics, in addition to the lack of an information platform specifically focused on politics is also a common issue in many countries, including Malaysia. The main objective of this project is to provide data visualization of the general election result in Malaysia. The other objectives are outlined to support the main goals which are to examine and analyze the dataset of Malaysian general election results, to design the dashboard and visualize the dataset, and to evaluate the Nationhood Literacy Web Portal with Data Visualization dashboard. The focus of this project is on how to develop the data visualization dashboard. The election result will be used as a dataset to be analyzed and visualized. The process to implement the dashboard will involve the planning phase until the testing phase. This project aims to help users to view the data more easily and clearly. The methodology that will be used is the Waterfall approach. It consists of five phases which are planning, analysis, design, development, and testing. Every phase has its own activities, technique, and outcome. This project will use Power Bi to visualize the data. Other tools such as Apache Hive and Microsoft Excel are used for data cleaning and ETL process. At the end of this project, all objectives are achieved, and the complete Nationhood Literacy Web Portal with Data Visualization is ready to be used.

Keywords: Nationhood, literacy, data visualization, dashboard, web portal

1. INTRODUCTION

In today's data-driven world, the exponential growth of data has presented a formidable challenge for humans to effectively manage and utilize this vast wealth of information. This challenge is particularly pertinent in the realm of politics, where the lack of dedicated information platforms focused on political matters is a pervasive issue in countries worldwide, including Malaysia. Recognizing the significance of this challenge, the primary objective of this project is to provide a comprehensive data visualization of the general election results in Malaysia. Central to this project is the development of an efficient and user-friendly data visualization dashboard. Leveraging the election results dataset, this dashboard aims to facilitate the seamless analysis and visualization of pertinent data. The implementation process spans from the initial planning phase to the comprehensive testing phase, ensuring a robust and reliable solution. The primary aim of this project is to empower users by enabling them to explore the available data easily and clearly. To achieve this, the Waterfall approach will be employed as the methodology, consisting of five distinct phases: planning, analysis, design, development, and testing. Power BI will serve as the primary tool for data visualization, while complementary tools such as Apache Hive and Microsoft Excel will aid in data cleaning and the Extract, Transform, Load (ETL) process. Upon the project's completion, Nationhood Literacy Web Portal with Data Visualization dashboard will evaluate by using User Acceptance Testing.

2. METHODOLOGY

The Waterfall Model was chosen as the methodology for the Nationhood Literacy Web Portal with Data Visualization dashboard. There are five phases which are Planning, Analysis, Design, Development, and Testing. The Planning phase involves defining the problem statement, objective, project scope, and project significance. Then, the Analysis phase where previous related works will be studied to find the information and requirements for the project. Next is the Design phase involves the process of designing the prototype of the Nationhood Literacy Web Portal with Data Visualization dashboard by using Figma. In the development phase there are Apache Hive and Microsoft Excel for data cleaning and ETL process, while Power BI for visualizing the data, Lastly, in the Testing phase, the dashboard will be tested using User acceptance testing.

3. RESULTS AND DISCUSSION

User Acceptance Testing is a phase of the dashboard that will be tested by the consumer and evaluated by them. The questions asked in User Acceptance Testing are divided into four sections which are Perceived Ease of Use (PEU), Perceived Usefulness (PU), Attitude (ATT), and Intention to Use (IU). Google Forms is used in this project as an online survey to give respondents the opportunity to provide feedback on the questionnaire. Figure 1 shows the result of the testing.

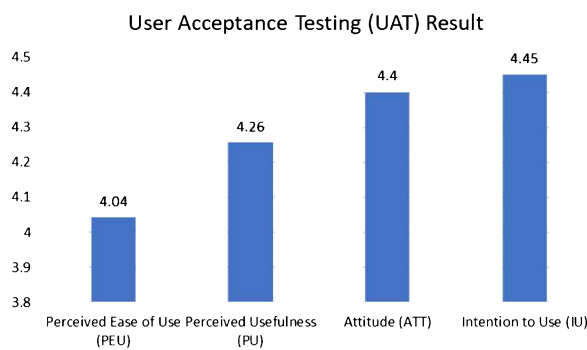


Figure 1. User acceptance testing result

4. NOVELTY OF RESEARCH / PRODUCT

The project fills a crucial gap by tackling the exponential growth of data in the political realm, an issue that has far-reaching implications for effective data management and utilization. The development of a dedicated information platform focused on politics, specifically the general election results in Malaysia. Furthermore, the integration of data visualization techniques and tools, such as Power BI, Apache Hive, and Microsoft Excel, brings innovation to the process. It enables users to gain valuable insights from complex datasets in a user-friendly manner. Lastly, the application of the Waterfall approach as the methodology ensures a structured and systematic framework for the project, contributing to efficient development and reliable outcomes. The result is to facilitate citizenship to get knowledge and advance the nation's understanding of its electoral processes.

5. CONCLUSION

In conclusion, Nationhood Literacy Web Portal with Data Visualization dashboard was constructed for people to find information about nationality. The dashboard was created to help the consumer get insight and knowledge about the pattern of the election result in Malaysia while the web portal was for people finds other related information such as the history of Malaysia. The dashboard includes the analysis of election results by year, voter analysis, and candidate and party analysis. The data is visualized by using various graphs such as maps, line charts, and tree maps.

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