ABSTRACT

Finding-Free Certificate Application Using a Web-Based Decision Tree Algorithm

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This study aims to design and implement a web application that leverages the Decision Tree algorithm for processing and classifying findings data received from units under the supervision of the Inspectorate General of the Ministry of Religious Affairs of the Republic of Indonesia. The application is designed to enhance accuracy and efficiency in determining the eligibility of findings data, focusing on automation processes that reduce the potential for errors in manual assessments. The methodology includes data preprocessing, such as filling missing rows and columns and encoding categorical data, to ensure data integrity and cleanliness before classification. The data is then split into training and testing sets, where the model is trained using features like the type of finding and aspects of the finding to produce recommendations for the issuance of a Surat Keterangan Bebas Temuan (SKBT). Model evaluation is conducted by calculating accuracy metrics, creating a confusion matrix, and visualizing the results in the form of a decision tree that illustrates classification rules based on the utilized features. Additionally, the application offers a download feature with checkboxes, allowing users to select data to be downloaded in PDF format, which can be packaged into a ZIP file if multiple documents are selected. The study results indicate that the application not only improves classification accuracy but also provides a practical solution for managing findings data, making it relevant for implementation in the context of government administration.

Keywords : Certificate of Findings Free, Decision Tree Algorithm, Data Classification, Web Application, Prerocessing Data, Confusion Matrix, Accuracy Matrics.