AI-BASED SYSTEM FOR ANALYZING, PREDICTING AND VISUALIZING STUDENT GRADES

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Abstract. *In the context of digital transformation of education, the analysis of academic results is gaining increasing importance for improving the quality of teaching and early detection of anomalies. This paper presents an approach to smoothing a system for automated analysis of student grades, integrating methods from statistics, machine learning, and data visualization. The developed system processes Excel files, extracts and standardizes the data, then applies linear regression to predict final grades and K-Means clustering to detect groups with similar results. An anomaly detection mechanism based on the difference between intermediate and final grades is employed, along with a rule-based module that generates personalized recommendations for each student. The results are presented visually and exported in an enriched Excel format with conditional coloring, which facilitates teachers in analyzing performance and detecting problem cases. The system demonstrates potential for application in academic analytics, offering a basis for future expansion through classification models and a web-based interface.*

Key words: AI, Academic Analytics, Linear Regression, Clustering, K-Means.

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