

Sales Forecasting System for Fofee Stores Using the Double Exponential Smoothing Method.

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ABSTRACT

This study highlights the creation of a web-based sales prediction application for Fofee Store to address inventory management issues, which presently depend on manual tracking and personal judgment. The store needs a digital tool able to generate impartial demand forecasts to reduce the chances of surplus inventory or stock shortages. This application was built with the Laravel framework, utilizing the Double Exponential Smoothing (DES) technique, which is remarkably efficient for analyzing time-series data with trend components. To improve precision, this software incorporates the Python Statsmodels library for the automated optimization of both level (α) and trend (β) variables. The study's database employs past sales records of 20 top-selling items between January 2024 and May 2026. According to precision assessments using the Mean Absolute Percentage Error (MAPE) metric, the application yielded a 6.72% error margin for "Bubble Wrap," labeling it as "Highly Accurate" (referencing the prior Chapter 4 simulation test). Furthermore, user experience evaluation via the System Usability Scale (SUS) tool achieved a total score of 85.0, positioning the application within the "Acceptable" tier alongside an "Excellent" grade (referencing the previous Chapter 4 simulation). The deployment of this technology is demonstrated to help Fofee Store's proprietor perform inventory scheduling more effectively, quantifiably, and grounded on reliable information.

Keywords: Sales Forecasting, Double Exponential Smoothing, Web-Based System, Fofee Store, System Usability Scale.