ABSTRACT

DESIGN OF A RAW MATERIAL FORECASTING INFORMATION SYSTEM TO IMPROVE RAW MATERIAL PROCUREMENT ACCURACY
(Case Study: Handmade Leatherstrap Shop)

by

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Leatherstrap Handmade, located in Yogyakarta, is a shop that produces and sells leather watch straps. The types of leather produced include cowhide, which is the best-selling product, monitor lizard skin, crocodile skin, and sheepskin. The main problem that arises is the ineffective management of raw material inventory, caused by the absence of an adequate monitoring system, which affects the delay in the production process. In dealing with this problem, a forecasting system is needed to estimate the need for raw materials so that existing supplies can be sufficient according to needs without a shortage or excess of raw materials. The Single Exponential Smoothing (SES) forecasting method is applied to predict raw material requirements based on historical data. The forecasting system was created using the Extreme Programming (XP) method, which allows iterative and collaborative development to ensure effective and fast results. Forecasting using the Single Exponential Smoothing method produces values based on the calculation process applied, namely Mean Forecast Error (MFE) of -0.233633, Mean Absolute Error (MAE) of 3.053080, and Mean Absolute Percentage Error (MAPE) of 4.544871, which indicates good accuracy. User Acceptance Testing (UAT) obtained a satisfaction rate of 83.3% from admins and 91.1% from staff, which proves that this system is effective and well received.

Keywords: BlackBox, Extreme Programming, Raw Materials Forecasting, Single Exponential Smoothing, User Acceptance Testing