ABSTRACT

In the raw material inventory management process at PR Wido, no calculation method has been used. To decide on placing orders for upcoming raw materials, the owner only relies on estimates without any mathematical calculation of the stock quantity. This poses a risk of errors in forecasting the amount of raw material to purchase, which could result in stock shortages or excess stock. If a shortage occurs, the company may incur additional costs for urgent orders, and production could even be halted. On the other hand, if there is excess stock, the company would also have to bear extra costs for inventory storage. Therefore, the Economic Order Quantity (EOQ), Safety Stock, and Reorder Point methods are considered highly suitable for managing raw material stock. The EOQ method is used to determine the optimal order quantity with the lowest cost, the Safety Stock method is used to set the minimum stock level, and the Reorder Point method is used to determine when to reorder. This research employs the Prototype method. The analysis results are projected using UML (Unified Modeling Language) models and applied in a web-based application.