

**IMPLEMENTASI DATA MINING MENGGUNAKAN ALGORITMA
APRIORI DALAM MENENTUKAN PERSEDIAAN BARANG (STUDI
KASUS: MASDEWA JEWELLER)**

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ABSTRAK

Masdewa Jeweller adalah perusahaan retail perhiasan perak. Berdasarkan hasil wawancara dan pengalaman magang, toko ini belum memiliki kendali penuh menentukan persediaan karena distribusi masih dikendalikan sepihak oleh produsen (CV Jeronini). Hal ini memicu potensi kehilangan penjualan akibat ketidaksesuaian antara permintaan pasar dan ketersediaan stok, serta penumpukan stok yang menyita ruang, menurunkan nilai estetika, dan memakan biaya pemeliharaan. Solusi yang ditawarkan adalah pemanfaatan *data mining* dengan algoritma *Apriori* untuk menemukan pola hubungan antar-produk. Tujuannya menemukan pola kombinasi produk yang sering dibeli bersamaan sebagai acuan strategi persediaan. Penelitian ini menggunakan kerangka kerja *CRISP-DM (Business Understanding, Data Understanding, Data Preparation, Modelling, Evaluation dan Lift Ratio, dan-Deployment-berupa sistem)* terhadap data transaksi Juni 2022 - Agustus 2025. Hasil penelitian menunjukkan algoritma *Apriori* berhasil menemukan kombinasi yang valid (*lift ratio* > 1). Terdapat 4 kombinasi yang dianggap valid yaitu *Necklaces & Pendants (support 11,15%, confidence 47,54%, lift ratio 1,22)*. Pola lainnya adalah *Rings, Necklaces & Bracelets (confidence 47,06%)*, *Earrings, Necklaces & Pendants (confidence 46,15%)*, dan *Bracelets, Necklaces & Pendants (confidence 41,82%)*. Kesimpulannya, implementasi algoritma *Apriori* mampu menemukan pola pembelian pelanggan pada data transaksi Masdewa Jeweller, hasil ini dapat dijadikan rekomendasi kategori produk yang di-*restock* bersamaan oleh Masdewa Jeweller. Hasil analisis ini disajikan dalam bentuk sistem sebagai alat bantu pengambilan keputusan yang objektif bagi Masdewa Jeweller.

Kata Kunci: *Data Mining, Algoritma Apriori, CRISP-DM, Persediaan Barang.*

**IMPLEMENTATION OF DATA MINING USING THE APRIORI
ALGORITHM IN DETERMINING INVENTORY (CASE STUDY:
MASDEWA JEWELLER)**

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ABSTRACT

Masdewa Jeweller is a silver jewelry retail company. Based on interview results and internship experience, this store does not yet have full control over determining its inventory because distribution is still unilaterally controlled by the manufacturer (CV Jeronini). This triggers potential lost sales due to discrepancies between market demand and stock availability, as well as stock accumulation that consumes space, reduces aesthetic value, and incurs maintenance costs. The proposed solution is the utilization of data mining with the Apriori algorithm to find relationship patterns among products. The objective is to find product combination patterns frequently purchased together as a reference for inventory strategy. This research uses the CRISP DM framework (Business Understanding, Data Understanding, Data Preparation, Modelling, Evaluation using Lift Ratio, and Deployment in the form of a system) on transaction data from June 2022 to August 2025. The research results indicate that the Apriori algorithm successfully discovered valid combinations (lift ratio > 1). There are 4 combinations considered valid, namely Necklaces & Pendants (support 11.15%, confidence 47.54%, lift ratio 1.22). Other patterns are Rings, Necklaces & Bracelets (confidence 47.06%), Earrings, Necklaces & Pendants (confidence 46.15%), and Bracelets, Necklaces & Pendants (confidence 41.82%). In conclusion, the implementation of the Apriori algorithm is able to discover customer purchasing patterns in Masdewa Jeweller's transaction data; this result can be used as a recommendation for product categories to be restocked together by Masdewa Jeweller. The results of this analysis are presented in the form of a system as an objective decision support tool for Masdewa Jeweller.

Keywords: Data Mining, Apriori Algorithm, CRISP-DM, Inventory.