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Penerapan Data Mining Untuk Memprediksi Data Penjualan Barang Pada Pt. Dano Sigarap Perdana

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Abstrak : Penelitian ini menerapkan metode K-Nearest Neighbor (KNN) untuk menganalisis dan memprediksi tren penjualan di PT. Dano Sigarap Perdana. Dengan memeriksa jarak Euclidean dari fitur produk dan status penjualannya, analisis ini mengidentifikasi pola dalam perilaku penjualan. Produk dengan jarak Euclidean yang lebih kecil menunjukkan tren penurunan penjualan, sementara produk dengan jarak yang lebih besar menunjukkan potensi peningkatan. Algoritma KNN membantu memprediksi tren penjualan masa depan dengan menemukan kesamaan antara data baru dan data historis. Rekomendasi meliputi fokus pada pemasaran produk yang diprediksi akan naik penjualannya, secara rutin memperbarui model dengan data baru untuk menangkap perubahan pasar, dan mengoptimalkan pemilihan fitur untuk akurasi prediksi yang lebih baik. Pendekatan ini bertujuan untuk meningkatkan pengambilan keputusan dan perencanaan strategis dalam penjualan dan pemasaran produk. Sistem ini dibangun menggunakan bahasa pemrograman PHP dan MySQL sebagai basis data.

PENDAHULUAN

Perkembangan IPTEK mampu dalam mengikuti perkembangan era globalisasi yang sangat pesat dalam dunia pendidikan dan industri. Pada saat ini banyak perusahaan yang bersaing untuk mendapatkan keuntungan dalam penjualan produk dan berusaha menentukan kualitas produk yang baik. IPTEK dapat diterapkan untuk otomatisasi proses-proses analisis data, sehingga dapat fokus pada interpretasi hasil dan pengambilan keputusan strategis. Dengan demikian, penerapan data mining tidak hanya meningkatkan prediksi penjualan, tetapi juga efisiensi operasional secara keseluruhan.

PT. Dano Sigarap Perdana merupakan perusahaan yang bergerak di bidang penjualan alat-alat safety. Dalam menghadapi persaingan yang semakin ketat di pasar, perusahaan ini perlu memanfaatkan teknologi dan strategi bisnis yang canggih untuk meningkatkan efisiensi operasionalnya. Salah satu pendekatan yang dapat diterapkan adalah penerapan teknologi data mining. Dengan menerapkan data mining, perusahaan dapat mengevaluasi dan mengidentifikasi bagian-bagian yang paling efektif, dan menyusun strategi penjualan.

Berbagai macam produk yang diproduksi oleh PT. Dano Sigarap Perdana, Setiap harinya, PT. Dano Sigarap Perdana melakukan kegiatan produksi, pengiriman, dan transaksi penjualan. Namun, selama ini proses pengolahan data transaksi penjualan pada . PT. Dano Sigarap Perdana belum memiliki pola data penjualan produk alat-alat safety dalam penjualan sehari-hari, dikarenakan belum memiliki metode secara tersistem komputerisasi dalam melakukan prediksi penjualan sepatu, helm, rompi sehingga sering mengalami kesalahan dalam persediaan barang, barang yang terlalu banyak distok tetapi permintaan sedikit dan juga sebaliknya barang sedikit dibuat tetapi permintaan banyak sehingga mengakibatkan kerugian. Data penjualan produk tersebut hanya diarsipkan dan tidak dikelola oleh pihak perusahaan untuk mendapatkan hasil yang baru, dan memprediksi keuntungan sehingga membuat pihak perusahaan mengalami kesulitan dalam mengatur prediksi

penjualan yang berujung kepada kerugian perusahaan. Penelitian ini dilakukan guna untuk memprediksi penjualan safety seperti sepatu, helm dan rompi di. PT. Dano Sigarap Perdana Penerapan ilmu yang sesuai untuk mengetahui cara memprediksi penjualan tentang berapa penjualan yang laku dan yang tidak laku tersebut diharapkan agar perusahaan dapat meminimalisir kerugian adalah dengan dikembangkannya menggunakan alat bantu dari salah satu ilmu komputer yaitu ilmu data mining. Adapun juga kelemahan dalam perusahaan yaitu masih belum menggunakan sistem data mining. Maka dari itu penulis mengklasifikasikan sistem baru untuk menentukan produk-produk mana saja yang paling laris dan diminati oleh masyarakat. Akan tetapi untuk memprediksi data penjualan barang pada PT. Dano Sigarap Perdana ini dibutuhkan sebuah algoritma K-Nearest Neighbor agar mempermudahkan PT. Dano Sigarap Perdana untuk mengetahui produk-produk mana saja dan varian-varian mana saja yang banyak diminati, Dalam hal ini Data mining sangat berpengaruh dalam proses menggali sebuah data dari suatu kumpulan data yang berupa pengetahuan yang selama ini tidak diketahui. Data mining ialah sesuatu teknik yang dipergunakan dalam menemukan informasi dalam suatu database. Data mining dalam prakteknya mengimplementasikan berbagai teknik diantaranya, Kecerdasan buatan, Pembelajaran mesin/machine learning, Kecerdasan Buatan dan teknik statistik yang digunkan untuk mengektrasi data dan mengidentifikasi data untuk kebutuhan informasi dari sebuah data base yang besar (Dodi Nofri Yoliadi, 2023). Data yang dibutuhkan adalah data penjualan barang yang menjadi titik sampel sebagai acuan dalam menentukan barang.

Data mining merupakan pemisahan dari model informasi yang bermanfaat dalam penyimpanan database. Data mining merupakan urutan proses yang berfungsi untuk mencari informasi tambahan yang belum ada didalam database serta model-model yang bermaksud mencarian model data yang dapat berubah menjadi informasi yang penting dari hasil pemisahan serta pengenalan model yang bermanfaat atau menarik dari data yang terdapat dalam database (Zulfa ,dkk,2020). Dengan menggunakan Algoritma KNN Algoritma K-Nearest Neighbor (KNN). Dengan memanfaatkan kemiripan objek yang bertetangga, KNN merupakan algoritma supervised learning yang digunakan untuk mengklasifikasikan suatu objek baru. Hasil dari sampel pengujian baru akan diklasifikasikan menggunakan jumlah terbanyak atau mayoritas dari algoritma KNN, yang berarti kelas yang paling sering muncul akan dijadikan kelas hasil klasifikasi (Ezra Amarya Aipassa dkk, 2024).

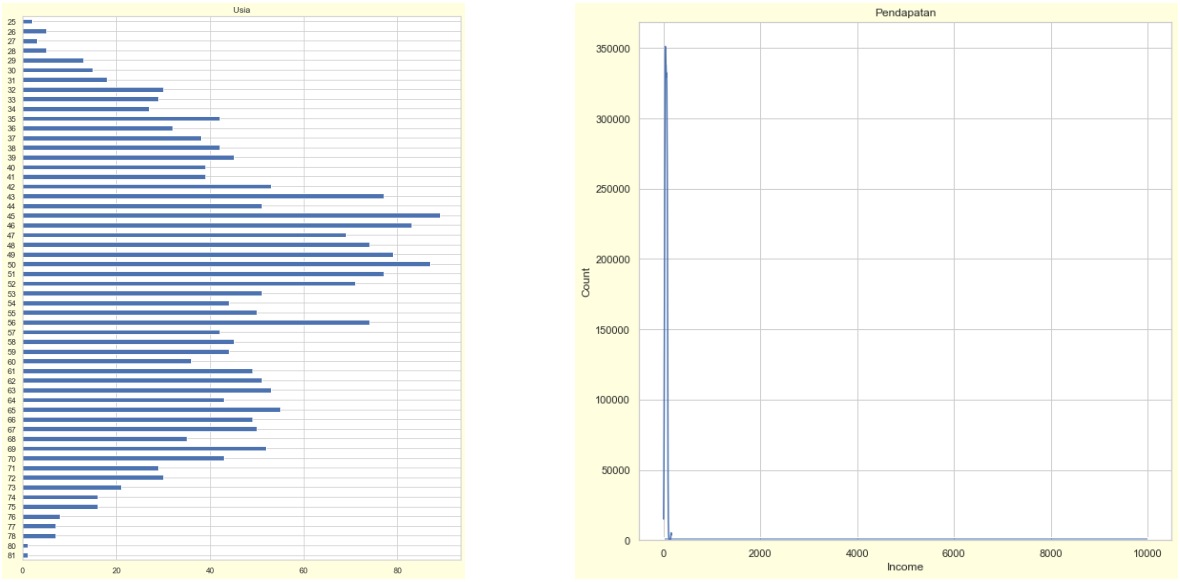
TINJAUAN LITERATUR

Lorem Ipsum is simply dummy text of the printing and typesetting industry. Lorem Ipsum has been the industry's standard dummy text ever since the 1500s, when an unknown printer took a galley of type and scrambled it to make a type specimen book. It has survived not only five centuries, but also the leap into electronic typesetting, remaining essentially unchanged. It was popularised in the 1960s with the release of Letraset sheets containing Lorem Ipsum passages, and more recently with desktop publishing software like Aldus PageMaker including versions of Lorem Ipsum. Lorem Ipsum is simply dummy text of the printing and typesetting industry. Lorem Ipsum has been the industry's standard dummy text ever since the 1500s, when an unknown printer took a galley of type and scrambled it to make a type specimen book. It has survived not only five centuries, but also the leap into electronic typesetting, remaining essentially unchanged. It was popularised in the 1960s with the release of Letraset sheets containing Lorem Ipsum passages, and more recently with desktop publishing software like Aldus PageMaker including versions of Lorem Ipsum

METODE PENELITIAN

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Gambar 1 Analisis Usia dan Pendapatan Pelanggan

HASIL PENELITIAN

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PEMBAHASAN

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KESIMPULAN

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