Naive Bayes Classification: Furniture Sales Dataset Analysis

Exploring the sales dataset of a company to understand the application of Naive Bayes classification in real-life business scenarios. The dataset includes 'Order_ID', 'Order_Priority', 'Order_Quantity', 'Sales', 'Ship_Mode', 'Profit', 'Customer_Name', 'Region', 'Customer_Segment', 'Product_Category', 'Product_Sub-Category', 'Product_Name', and 'Product_Container'.

Submitted by :-

Gaurang Ashava RA2111027010007
Safal Mehrotra RA2111027010006

Understanding the Sales Dataset

Data Distribution

Detailed breakdown of order quantity, sales, profit, and more.

Customer Segmentation

Analyzing sales data based on customer segments such as region, priority, and mode of shipment.

Product Categorization

Exploring the dataset to understand the distribution across different product categories and sub-categories.

Key Patterns & Trends

1

Seasonal Variations

Identifying patterns in sales data based on different seasons and trends.

2

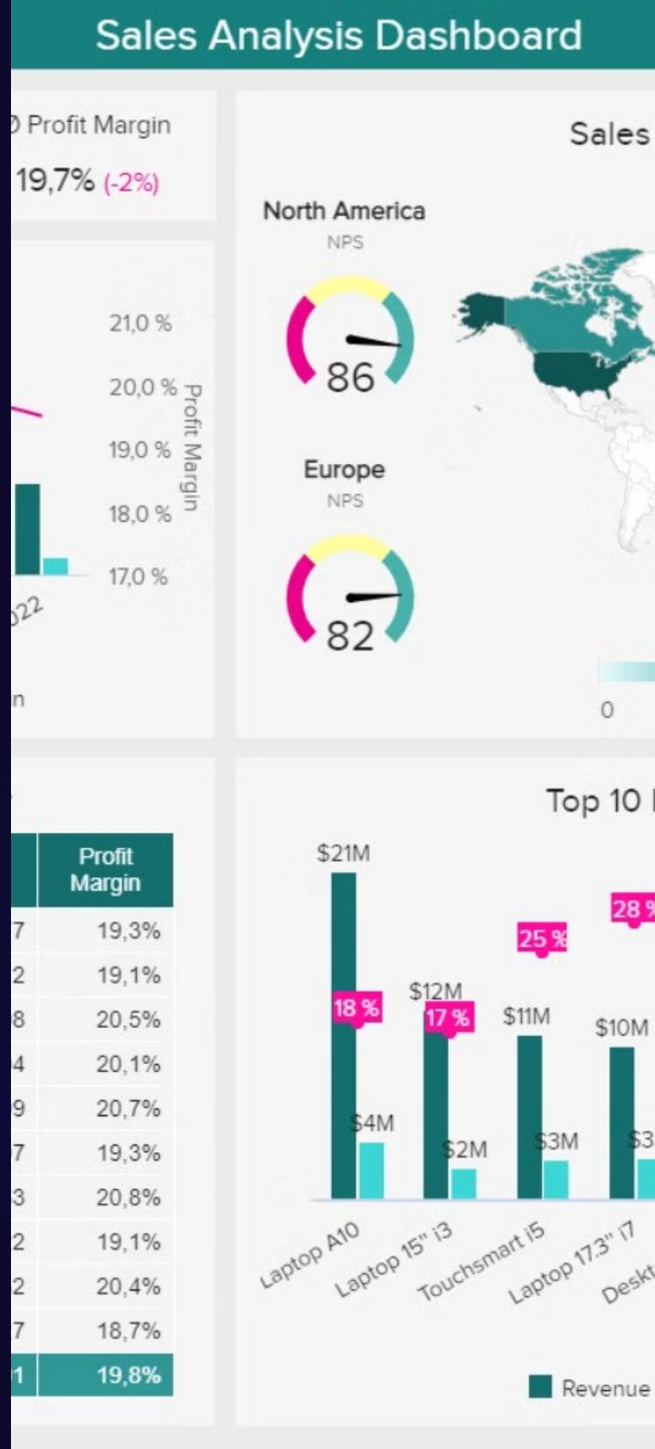
Regional Insights

Exploring how sales vary across different regions based on the dataset.

3

Customer Behavior

Understanding patterns in customer behavior related to product purchases and order priority.



$$P(A|B) = \frac{P(B|A) * P(A)}{P(B)}$$

Naive Bayes Classification Basics

1 Probability Model

Explaining the fundamental principles of Naive Bayes classification based on probability.

2 Independence Assumption

Understanding the assumption of independence between features in Naive Bayes.

3 Real-world Examples

Illustrating how Naive Bayes is used in real-world scenarios including sales predictions.

Impact of Naive Bayes Analysis

Insights Generation

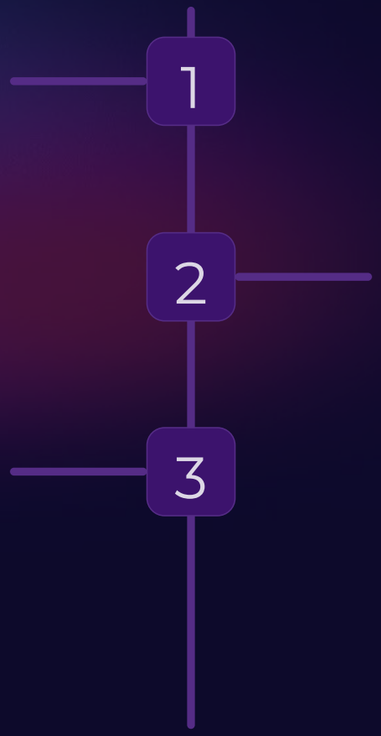
How Naive Bayes helps in generating valuable insights for sales strategies.

Efficiency Improvement

Enhancing operational efficiency in sales processes through classification analysis.

Decision-making Support

Empowering informed decision-making based on the analysis output.



Challenges & Limitations

Handling Missing Data

Addressing challenges related to incomplete or missing data points in the sales dataset.

Outlier Detection

Identifying and managing outliers in the data to ensure accurate analysis results.

Assumption Validity

Ensuring the validity of independence assumptions for accurate classification results.

Future Scope & Recommendations

Enhanced Data Collection	Optimizing data collection processes to ensure comprehensive and accurate analysis.
Advanced Model Iterations	Exploring advanced Naive Bayes models for improved sales predictions and insights.
Industry-specific Applications	Adapting Naive Bayes techniques, suit specific industry requirements for impactful analysis.