

Data Analytics with Cognos Project

PROJECT TITLE:

PRODUCT SALES ANALYSIS

TEAM MEMBERS:

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Project Definition

The project involves using IBM Cognos to analyze sales data and extract insights about top selling products, peak sales periods, and customer preferences. The objective is to help businesses improve inventory management and marketing strategies by understanding sales trends and customer behavior. This project includes defining analysis objectives, collecting sales data, designing relevant visualizations in IBM Cognos, and deriving actionable insights.

Design Thinking

1. Analysis Objectives:

This phase involves defining of specific insights that we want to extract from the sales data, such as identifying top-selling products, analysing sales trends and understanding customer preferences.

- **Top-Selling Products:** To determine which products are consistently selling well. This insight helps businesses focus on high-demand items and possibly expand their offerings in that category.
- **Sales Trends:** Understanding the patterns in sales data over time. Recognizing the trends, whether they're seasonal or influenced by market changes, allows businesses to adapt their strategies accordingly.
- **Customer Preferences:** Analysing customer data to identify preferences and behaviours. This insight helps in tailoring products, services, and marketing efforts to specific customer needs, increasing customer satisfaction and loyalty.

2. Data Collection

Determination of the sources and methods for collecting sales data, including transaction records, product information, and customer demographics.

To proceed with the analysis, we need to gather the necessary data. The provided dataset is accessible via the link:

Dataset Link: <https://www.kaggle.com/datasets/ksabishek/product-sales-data>

During data collection, transaction records containing product details, quantity, price, and dates are gathered to understand product popularity and peak sales periods. Comprehensive product data, including category and specifications, aids in effective product categorization and understanding customer preferences. Additionally, demographic information such as age, location, and buying history is collected. This data is vital for tailoring marketing campaigns precisely to specific customer segments, enhancing business strategies and customer engagement.

3. Visualization Strategy

In this phase, we plan how to visualize the insights using IBM Cognos to create interactive dashboards and reports. It is explained below.

- **Interactive Dashboards:** Designing of dashboards that allow users to interact with the data dynamically. Adding Interactive features like filters and drill-down options enable users to explore specific aspects of the data, enhancing the depth of analysis.
- **Reports:** Creation of detailed reports summarizing key findings. Reports should be visually appealing and easy to understand, presenting complex data in a comprehensible format.
- **Visual Representations:** Utilize various types of charts (e.g., bar charts, line graphs, pie charts) to represent different aspects of the data. Each visualization should be chosen based on the type of data being presented to ensure clarity and insightfulness.

4. Actionable Insights

Here we Identify how the derived insights can guide inventory management and marketing strategies. They are as follows

- **Product Prioritization:** Focusing on top-sellers. Ensuring availability, strategic placement, and promotion for maximum revenue.

- **Strategic Inventory Management:** To Analyze trends for accurate demand forecasting. Optimizing inventory levels, reducing excess stock and minimizing shortages.
- **Targeted Marketing Campaigns:** To Personalize promotions based on preferences. Recommendation of products for effective cross-selling and upselling strategies.
- **Optimized Sales Periods:** To Strategize marketing and discounts during peak times. Attracting more customers, maximizing revenue opportunities.
- **Enhanced Customer Experience:** Anticipation of needs, personalization of interactions, and offering tailored recommendations. Using customer feedback to refine the purchasing process effectively.

5.Next Steps:

The next phase of the project will involve data preprocessing, loading the data into IBM Cognos, creating visualizations, and conducting statistical analysis to fulfill the defined objectives. Regular updates and collaboration among team members will be essential throughout the project to ensure its success.

TIMELINE

A tentative timeline for the project is as follows:

- Data Collection and Preprocessing: 1 week
- IBM Cognos Setup and Visualization Design: 1 week
- Data Analysis and Insights Generation: 1 week
- Documentation and Reporting: 1 week
- Review and Finalization: 1 week