

# Project Design Document: Sales Data Analysis using IBM Cognos

**Project Statement:** Our project revolves around harnessing the power of IBM Cognos to dig deep into sales data, extracting valuable insights that can revolutionize businesses' inventory management and marketing strategies. We need to uncover the top-selling products, pinpoint peak sales periods, and understand customer preferences. In this comprehensive project, we'll outline our analysis goals, undergo data collection, devise a visualization strategy within IBM Cognos.

## Analysis Objectives

We would like to focus on 3 main objectives for this project.

### Objective 1: Identifying Top-Selling Products

To get a grip on this objective, we aim to:

- Dive into the data to figure out which products consistently bring in the most revenue.
- And also discover the factors that make these products stand out in the market.

### Objective 2: Analyzing Sales Trends

In our pursuit of this objective, our plan is to:

- Delve into historical sales data to spot recurring patterns and trends.
- Identify seasonal variations and opportunities for growth.

### Objective 3: To predict future trends in sales.

For this objective, we'll:

- Extend our current findings to predict the sales of each product to best possible accuracy.
- Forecasting future sales trends and demand for specific products, ensuring products are always in stock when needed.

# Data Collection

Our Primary source of data will be from:

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

We plan to go through steps like:

- Handling Missing Values
- Removing Duplicates
- Outlier Detection and Handling
- Data Type Validation

Before working with it. And make sure the data available has integrity to it.

# Visualization Strategy

## Interactive Dashboards

Our approach to visualization within IBM Cognos will feature user-friendly dashboards with:

- Key Performance Indicators (KPIs) such as total sales, top products, and sales trends.
- Interactive filters so users can slice and dice data by date, and product type.

## Reports

In addition to dashboards, we'll generate detailed reports including:

- Deep insights on top-selling products, and sales trends.
- Charts, graphs, and tables to make these insights crystal clear.

# Actionable Insights

## Inventory Management

Our analysis will yield recommendations for smarter inventory management:

- Suggestions for optimal stock levels for different products based on sales trends.
- Insights into streamlining stock replenishment, saving on carrying costs.

## Marketing Strategies

We'll guide effective marketing strategies by:

- Tailoring campaigns to match customer preferences we've identified.
- Allocating resources where they'll have the most impact, focusing on high-potential products and customer segments.

# Conclusion

Our project is really about diving deep into what IBM Cognos can do with sales data. We're all about using design thinking and coming up with cool ideas to find the hidden secrets in this data. Our goal isn't just to help with inventory and marketing, but to actually make the business successful in the long run. We think the key to making this happen is by always keeping an eye on things, being flexible, and thinking ahead.