

# PHASE 5

## Project Documentation & Submission

### Abstract

In this comprehensive e-commerce sales analysis project, IBM Cognos and Python were employed to unveil sales trends, top products, and customer preferences, offering actionable insights for optimized inventory management and strategic marketing decisions to enhance REC corp LTD.'s PERFORMANCE.

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## **Phase 5: Project Documentation & Submission - Product Sales Analysis**

### **Project Objective:**

The objective of the Product Sales Analysis project was to comprehensively analyze sales data for REC corp LTD.'s four products (P1, P2, P3, P4) and provide valuable insights to guide decision-making in inventory management and marketing strategies.

### **Design Thinking Process:**

The project followed a systematic design thinking process:

- **Understanding the Data:** We began by acquiring and understanding the dataset, which included information on product sales, quantities, and revenues.
- Data modules were constructed in IBM Cognos Analytics to prepare the data for analysis. This involved data blending and cleansing within the IBM Cognos environment.
- **Building Data Modules with IBM Cognos:** Data Visualization using IBM Cognos: Using IBM Cognos, a variety of visualizations were created to illustrate sales trends, top-selling products, customer preferences, and peak sales periods.
- **Advanced Analysis with Python:** Python code was integrated to perform advanced analyses, including predictive analytics to forecast future sales trends and annual sales estimates.
- **Deriving Insights:** The insights derived from the analysis were aimed at guiding inventory management and marketing strategies to enhance REC corp LTD.'s performance.

### Analysis Objectives:

The project had several key analysis objectives:

- Identifying sales trends over the years.
- Determining the top-selling products by sales quantity and revenue.
- Uncovering customer preferences for specific products or categories.
- Identifying peak sales periods or months for strategic planning.
- Predicting future sales trends to guide inventory management.
- Offering annual sales estimates with high accuracy to support planning and decision-making.

### Data Collection Process:

The project used a hypothetical dataset sourced from Kaggle, which provided detailed information about sales, products, and customers. This dataset was the foundation for the entire analysis.

### Derived Insights:

The insights from the analysis can greatly benefit REC corp LTD.:

- Sales trends can inform inventory management and help ensure product availability during peak periods.
- Identifying top-selling products can guide marketing strategies and the allocation of resources.
- Customer preferences can lead to targeted marketing efforts, enhancing customer satisfaction.
- Recognizing peak sales periods is crucial for stock preparation and marketing planning.

- Predictive analytics and annual sales estimates can support data-driven decision-making for REC corp LTD.

### Submission part:

#### GitHub Repository Link:

The complete project, including the files, is available on our GitHub repository at

[https://github.com/BalaSanthosh21ECA72/Naan\\_Mudhalvan](https://github.com/BalaSanthosh21ECA72/Naan_Mudhalvan)

#### Replication Instructions:

To replicate the analysis and generate visualizations using IBM Cognos and Python, detailed instructions are provided in the project documentation. This includes data preparation, code execution, and visualization creation within the IBM Cognos environment.

#### Example Outputs:

The project documentation includes example outputs of visualizations and derived insights, providing a clear reference for understanding the results of the analysis.

All the example analysis available in previous phases, which you can access through the GitHub link provide.

This Product Sales Analysis project represents a comprehensive effort to leverage data for strategic decision-making, with a specific focus on IBM Cognos for data visualization and analysis. The project offers actionable insights that can greatly benefit REC corp LTD. in optimizing its inventory management and marketing strategies.