**Data Analysis and Interactive Dashboard Project**

This repository showcases a comprehensive data analysis project that involves **data cleaning**, **data transformation**, **data analysis**, and **data visualization** using Excel and Power BI.

**1. Data Preparation and Cleaning**

**File**: All data.xlsx

* **Description**:  
  The Excel file contains multiple sheets, each dedicated to different aspects of sales, customer, and product data. The data has been cleaned to remove inconsistencies and ensure accuracy, with necessary transformations applied for effective analysis.
* **Sheet Details:7 Sheets (Tables)**
  + **Sales**: Transaction-level sales data, including date, bill number, customer ID, and product code.
  + **Area**: Customer IDs with regions, cities, and sales territories.
  + **Customer**: Customer information including name, type, trade type, and grade.
  + **Customer Grade**: Customer categorization based on purchase behavior and loyalty.
  + **Beat**: Data about sales territories and salespeople.
  + **Product**: Product details including categories, prices, and weights.
  + **Sales Person**: Information about sales personnel including name, age, and experience.

**2. Data Transformation**

* **Transformation Process**:
  + Data from different sources was standardized for uniformity, ensuring consistency across all sheets.
  + Columns like date, product code, and customer ID were transformed for analysis readiness.
  + Relevant aggregations and calculations, such as total sales by region or product, were derived to make the data analysis-ready.

**3. Data Analysis**

* The dataset was analyzed to uncover key insights like:
  + **Sales trends** over time.
  + **Customer segmentation** based on grade and trade type.
  + **Regional sales performance** by beat, area, and sales person.
  + **Product performance** across different categories, colors, and price points.

**4. Data Visualization and Power BI Dashboard**

**File**: Analysis.pbix

* **Description**:  
  The Power BI dashboard provides interactive visualizations of the cleaned and transformed data, offering insights into sales performance, customer behavior, and product trends.
* **Dashboard Features**:
  + **Sales Trends**: Visualizes sales data over time with line and bar charts.
  + **Geographical Breakdown**: Displays sales performance by region, city, and sales beat.
  + **Customer Insights**: Analyzes customer type, grade, and the impact on sales.
  + **Product Insights**: Visualizes sales by product category and price.
  + **Sales Person Performance**: Tracks performance based on individual sales person metrics.

**5. Objectives of the Project**

* Clean, transform, and prepare data for analysis.
* Create a comprehensive Power BI dashboard for visualizing key business metrics.
* Perform detailed data analysis to provide actionable insights on sales, customers, and products.

**6. How to Use**

1. **Excel File**:
   * Open All data.xlsx to explore detailed datasets.
2. **Power BI File**:
   * Open Analysis.pbix in Power BI Desktop to interact with the dashboard and explore data insights.

**7. Technologies Used**

* **Tools**: Power BI, Microsoft Excel
* **Skills Demonstrated**:
  + Data cleaning, transformation, and preparation.
  + Advanced data analysis and visualization in Power BI.
  + Effective use of Excel for data management and aggregation.