Visualizing and Predicting Online Retail Sales Using Tableau

Goal of this project is to investigate and analyze **sales trends, customer behavior, and performance of products** using the Online Retail II dataset. We will make a regression analysis to predict sales revenue based on key factors like product type, customer segment, and time.

Dataset Description:

- Source: UCI Machine Learning Repository
- Contains transactional data from a UK-based online retailer between 2009–2011
- Key Variables: InvoiceDate, Quantity, UnitPrice, Description, Country, CustomerID

Tools Used:

- Python for Data Cleaning
- Tableau for data visualization and interactive dashboard creation

Methodology:

- Data cleaning (removing nulls, formatting dates)
- Exploratory data analysis
- Creating calculated fields like monthly revenue, product categories
- Building interactive dashboards:
    - Time series of total sales
    - Country-wise sales map
    - Top products and customer segments
- Optional: Regression analysis (e.g., Quantity, UnitPrice → TotalPrice)

Expected Outcomes:

- Identifying key patterns in sales behavior
- Deciding which products and countries perform the most revenue
- Conduct a predictive model for sales estimation
- Enable strategic decision-making for marketing and inventory

Timeline:

- Week 1: Data Understanding & Cleaning
- Week 2: EDA & Dashboard Planning
- Week 3: Tableau Visualizations
- Week 4: Final Review & Proposal Presentation