Business Problem Statement

A leading **E-commerce company** wants to evaluate and improve the performance of its online sales operations across multiple product categories and customer segments. Despite steady growth, the business faces challenges such as uneven revenue distribution, fluctuating sales trends, varying customer purchasing behaviour, and low repeat purchase rates across different time periods and locations.

The management team aims to gain deeper insights into customer behaviour, product performance, revenue drivers, and retention patterns**.** They are particularly interested in understanding the factors influencing order volume, revenue generation, category performance, seller contribution, payment behaviour, and customer retention across cities, states, and time periods.

You are tasked with analysing the E-commerce transactional dataset to answer the following overarching business question:

"How can the E-commerce company leverage sales and customer behaviour data to optimize revenue, improve customer retention, identify high-performing products and sellers, and enhance overall business performance?"

Deliverables

1. **Data Preparation & Modelling (SQL / Python)):** Cleaned, transformed, and modelled E-commerce transactional data to create analysis-ready datasets and key business metrics.
2. **Data Analysis (SQL):** Used SQL to analyse sales performance, revenue trends, product and category contribution, seller performance, and customer purchasing behaviour.
3. **Advanced Analytics (SQL & Python) :** Performed time-series analysis including moving averages, cumulative sales, year-over-year (YoY) growth, correlation analysis, and customer retention calculations.
4. **Report and Presentation:** Delivered a concise analytical report and presentation with **actionable insights** to improve revenue growth, customer retention, and product strategy.
5. **GitHub Repository:** Maintained a well-structured GitHub repository containing SQL scripts, Python notebooks, and complete project documentation.