**Phase 1: Project Definition and Design Thinking**

**Project Definition:**

The project involves using IBM Cognos to analyze sales data and extract insights about top selling products, peak sales periods, and customer preferences. The objective is to help businesses improve inventory management and marketing strategies by understanding sales trends and customer behaviour. This project includes defining analysis objectives, collecting sales data, designing relevant visualizations in IBM Cognos, and deriving actionable insights.

**Design Thinking:**

**1. Analysis Objectives:**

- Determine which products have consistently ranked as top sellers over different time periods.
- Discover when sales peak throughout the year. This can help in planning marketing campaigns, stock replenishment, and staff allocation.
- Analyze customer behavior to understand preferences in terms of product categories, shipping modes, and order priorities.
- Evaluate the profitability of different regions, customer segments, and product categories.

**2. Data Collection:**

- Ensure data quality by addressing missing values, outliers, and inconsistencies. Clean data is crucial for accurate analysis.

**3. Visualization Strategy:**

- Create an interactive heat map that showcases the top-selling products over time. Use color gradients to make it visually appealing.
- Allow users to filter by product category or region.
- Build a visually stunning line chart with different shades representing sales volume throughout the year.
- Design a sunburst chart to display customer preferences.
- Users can interactively drill down to see preferences based on region, product category, and shipping mode.
- Develop a treemap that illustrates profitability by region, product category, and customer segment. Use color-coding to highlight the most profitable areas.

**4. Actionable Insights:**

- Based on top-selling products, optimize inventory levels to meet demand without overstocking.
- Plan marketing campaigns around peak sales periods and customer preferences to maximize ROI.
- Analyze shipping modes and order priorities to streamline the supply chain process and reduce shipping costs.
- Use profitability analysis to make decisions about product categories that need more attention or investment.
- Customize strategies for regions based on profitability and customer behavior insights.