**High-Level Design (HLD) Report for Financial Analytics Dashboards**

**1. Introduction**

This High-Level Design document provides an overview of two interactive dashboards built in Tableau for Financial Analytics. These dashboards are designed to empower stakeholders, including sales managers and executives, with insights into sales performance and customer behavior. They leverage a dataset comprising customers, orders, locations, and products to create a comprehensive, data-driven view of financial trends. By combining various visualizations—such as big-ass numbers (BANs), line charts, sparklines, and tables—these dashboards provide an intuitive and insightful experience for end users.

**2. System Architecture Overview**

The architecture supporting these Financial Analytics dashboards integrates Tableau with multiple data sources to deliver real-time data visualization capabilities. Key elements include:

- Data Sources: Centralized databases store details on customer profiles, order histories, product categories, and location data. Regular updates ensure users are working with current information.

- Data Processing & Calculations: Data is transformed within Tableau using calculated fields, allowing for custom metrics that dynamically update based on user interactions.

- Dashboard Hosting (Tableau Server/Online): Hosting is managed via Tableau Server or Tableau Online, ensuring secure, web-based access for authorized stakeholders.

The architecture enables efficient data handling, allowing for rapid data exploration and visualization without manual data uploads.

**3. Modules and Components**

The Financial Analytics project consists of two main dashboards: the Sales Dashboard and the Customer Dashboard, each tailored to meet distinct analysis requirements.

# Sales Dashboard

The Sales Dashboard delivers insights into sales metrics, supporting year-over-year (YOY) analysis, product subcategory performance, and weekly trends. Key components include:

- KPI Overview (BANs): Summarizes total sales, profit, and quantity for the current and previous years.

- Sales Trends (Line Charts & Sparklines): Visualizes monthly sales and profit trends, highlighting high and low-performance months through color-coded markers.

- Product Subcategory Comparison (Tables with Color-Coding): Breaks down sales and profit across product subcategories to aid in identifying top-performing products.

- Weekly Sales & Profit Trends: Shows weekly sales and profit figures, with weeks above and below average highlighted to emphasize fluctuations.

# Customer Dashboard

The Customer Dashboard focuses on customer metrics, offering insights into purchasing behavior and segmentation. Components include:

- KPI Overview (BANs): Summarizes total customer count, sales per customer, and order totals for the current and previous years.

- Customer Trends (Line Charts & Sparklines): Monthly trends provide insights into customer engagement, with highest and lowest months clearly marked.

- Customer Distribution by Orders: Displays customer segmentation based on the number of orders, giving insights into customer loyalty and engagement levels.

- Top 10 Customers by Profit (Tables with Tooltips): Ranks the top 10 customers by profit, with additional information on order count, sales, profit, and the last order date.

**4. Layout and Dashboard-Building Process**

Creating effective layouts and building the dashboards involved careful planning and design choices:

- Layout Design: Both dashboards are designed to prioritize key metrics at the top (using BANs), followed by trend charts and comparisons for in-depth analysis. This hierarchy enables users to start with an overview and drill down as needed.

- Visualization Selection: Each chart type serves a specific purpose, such as line charts for tracking trends over time, sparklines for quick insights into monthly fluctuations, and tables for detailed comparisons.

- Interactivity and Filters: Filters for categories, subcategories, regions, and dates are positioned for easy access, allowing users to customize views to their needs. Tooltips provide additional context on hover, and colors are applied to draw attention to key figures.

- Dashboard Building Process:

- Data Connection: Connected Tableau to the dataset, ensuring all relevant tables (customers, orders, location, products) are linked.

- Calculated Fields: Created custom calculations for YOY metrics, averages, and other specific KPIs, enabling real-time updates and comparisons.

- Visualization Assembly: Constructed each visualization, using BANs for high-level KPIs and line charts, sparklines, and tables to represent trends and comparisons.

- Testing and Refinement: Tested the dashboards to ensure interactivity, correct filter functionality, and clarity, making adjustments based on user feedback.

**5. Data Flow and Interactivity**

Data flows from the source database to Tableau, where it’s processed using calculated fields and displayed through various visualizations. Key interactivity features include:

- Year Selection: Allows users to select the desired year for historical comparison.

- Interactive Charts: Enables users to click on visualizations, such as line charts, to focus on specific categories or periods.

- Tooltips and Color-Coding: Tooltips provide additional insights on hover, while colors indicate high and low metrics for easy identification.

- Filters: Product and location filters allow users to refine views based on categories, subcategories, regions, states, and cities.

**6. Security and Access Control**

Role-based permissions are implemented to secure access to the dashboards on Tableau Server/Online. Permissions are assigned based on the user’s role (e.g., manager, analyst), ensuring data confidentiality and compliance with organizational policies.

**7. Design Rationale**

Each design decision aims to make the dashboards intuitive and insightful for the users:

- High-Level KPI Summaries: BANs offer a quick snapshot of essential metrics, such as total sales and profit, allowing users to gauge performance at a glance.

- Color-Coded Trends: Monthly and weekly trends are color-coded to highlight significant variations, helping users quickly identify key insights.

- Comparative Analysis and Customer Focus: The product subcategory and customer distribution views support comparative analysis, while the top customer list allows stakeholders to focus on high-value relationships.

**8. Future Enhancements**

Future improvements could include predictive analytics for sales forecasting, automated real-time data updates, and mobile-responsive layouts to enhance access and functionality for remote users.

This HLD report provides a detailed overview of the Financial Analytics dashboards, covering their layout, key components, and interactivity features, helping stakeholders make data-driven decisions and support business growth.