NEXUS ANALYTICS
Solution Guidelines
Professional Data Analytics Portfolio Project

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Solution Overview

This document outlines the technical approach used to transform raw transactional data into an executive-ready analytics dashboard using Microsoft Excel Power Pivot and DAX. The solution follows a structured analytics workflow covering data ingestion, modeling, KPI creation, visualization, and insight generation.

Architecture Summary

- Source Data: Synthetic CSV generated using Python
- Analytics Layer: Excel Power Pivot Data Model
- Calculation Layer: DAX Measures
- Presentation Layer: PivotCharts + Interactive Dashboard
- Output: PNG/PDF exports for portfolio sharing

Step 1 – Data Ingestion

The CSV dataset is imported into Excel using Power Query. Basic validation is applied to ensure correct data types, standardized categorical values, and removal of null or invalid records. The cleaned dataset is then loaded into the Power Pivot Data Model.

Step 2 – Data Modeling

A dedicated Date table is created and marked as a Date Table. Relationships are established between Date and Sales tables. This enables proper time-intelligence calculations such as YoY growth and trend analysis.

Step 3 – KPI Development (DAX)

Core business KPIs are implemented using DAX:

- Total Revenue

- Total Orders
- Revenue YoY %
- Average Order Value (AOV)
- Fulfillment Rate
- Cancellation Rate

These measures provide financial, customer, and operational visibility.

Step 4 – Pivot Analysis

Dedicated PivotTables are created for each analytical dimension:

- Monthly Revenue Trend
- Category Performance
- Regional Revenue Share
- Customer Segment Performance
- Payment Method Distribution
- Order Status Distribution

Each Pivot serves as a data source for dashboard visuals.

Step 5 – Dashboard Design

An executive-style dashboard is built using PivotCharts with a dark theme. Slicers (Year, Region, Category) provide interactivity. KPI cards display key metrics with YoY indicators. Charts are arranged in logical sections to support quick business interpretation.

Step 6 – Insight Generation

Dashboard visuals are translated into actionable insights covering:

- Revenue growth and seasonality
- Product concentration risk
- Regional balance
- Customer behavior
- Fulfillment health
- Marketing channel efficiency

These insights are documented separately for portfolio presentation.

Step 7 – Finalization & Export

The dashboard layout is locked, slicers remain interactive, and backend sheets are hidden. Final outputs are exported as PNG and PDF for LinkedIn, GitHub, and recruiter sharing.

Quality Assurance

- KPI reconciliation against source data

- Slicer interaction validation
- Visual alignment checks
- File size optimization
- Dashboard usability review

Conclusion

This solution demonstrates an end-to-end Excel BI workflow combining data modeling, DAX calculations, and dashboard storytelling. It reflects real-world analyst practices using a single governed workbook supported by documentation and exports.

Ownership

This project is entirely owned and developed by Shivansh Yadav. All data was programmatically generated using Python scripts for educational and professional portfolio purposes.