Low-Level Design (LLD) Document

Project Title: Amazon Sales Data Analysis

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Document Version Control

Date	Version	Description	Author
2025-06-26	1.1	Expanded version of Amazon LLD with visual configs and optimization	Divyanshi Gangrade]

1. Overview

This Low-Level Design (LLD) document outlines the detailed structure of the Amazon Sales Dashboard created using Power BI. It includes descriptions of data columns, transformation logic, DAX measures, visual layout, and design practices.

2. Data Model

- Data Source: Amazon Sales Records (CSV file)
- Contains 1,000+ rows of data between 2010–2017
- Primary columns: Order Date, Region, Country, Item Type, Channel, Units Sold, Total Revenue, Cost, Profit

3. Column Descriptions

Column Name	Description
Order Date	Date when the order was placed
Item Type	Category/type of product sold
Sales Channel	Sales mode - Online or Offline
Region	Geographical region of the order

Country	Country where order was placed
Units Sold	Quantity of items sold
Total Revenue	Gross revenue generated
Total Cost	Cost to produce or acquire products
Total Profit	Revenue minus Cost

4. Calculated Columns

- OrderYear = YEAR([Order Date])
- OrderMonth = MONTH([Order Date])
- OrderYearMonth = FORMAT([Order Date], 'yyyy-MM')
- OrderYearMonthNum = YEAR([Order Date]) * 100 + MONTH([Order Date])

5. DAX Measures

- TotalRevenue = SUM('Amazon Sales Records (2)'[Total Revenue])
- TotalProfit = SUM('Amazon Sales Records (2)'[Total Profit])
- TotalCost = SUM('Amazon Sales Records (2)'[Total Cost])
- UnitsSold = SUM('Amazon Sales Records (2)'[Units Sold])

6. Visuals Configuration

- KPI Cards:
  • Total Revenue → Blue, 32pt, Display Units: M
  • Total Profit → Green, 32pt, Display Units: M
  • Total Cost → Red, 32pt, Display Units: M
  • Units Sold → Yellow, 32pt, Display Units: K
- Year-wise Revenue → Column Chart
- Month-wise Revenue → Line Chart
- Year-Month Trend → Area Chart
- Channel-wise Revenue → Pie Chart
- Product Profit → Treemap
- Top Countries by Profit → Donut Chart
- Units Sold by Product → Stacked Column Chart
- Region vs Product → Matrix Table

7. Filters and Slicers

- Slicers: Year, Month (used to filter visuals)
- Optional: Region, Product Category, Sales Channel

8. Formatting & Theme

- Theme: Dark background with neon accents
- Fonts: Segoe UI or Montserrat
- Color Coding:
  • Revenue → Blue
  • Profit → Green
  • Cost → Red
  • Units Sold → Yellow or Cyan

9. Performance Optimization

- Use numeric slicers (e.g., year) for better performance
- Hide unused fields from the report view
- Enable display units (M/K) to reduce label clutter
- Reduce number of visuals per page to speed up loading
- Use Top N filters for high-cardinality charts (e.g., Top 10 Countries)

10. Future Enhancements

- Add YoY and MoM % growth KPIs
- Deploy to Power BI Service with auto-refresh
- Embed into a personal portfolio website
- Add map visual for geo-analysis once available