High Level Design (HLD)

**Expenditure Data Analysis**

**Last Date of Revision:** 12/07/2025  
**Author:**  Riva Prakash

**Contents**

* Abstract
* Introduction
* Why this HLD Document?
* Scope
* General Description
* Problem Statement
* Tools Used
* Design Details
* Functional Architecture
* Optimization
* Key Performance Indicators (KPIs)
* Deployment

**Abstract**

Every business must control costs to survive in today’s competitive landscape. This project focuses on analyzing company expenditure data using Power BI to uncover high-cost areas, identify loss-making transactions, and provide actionable visual insights. The goal is to guide management toward smarter cost-reduction decisions through meaningful metrics and dashboards.

1. **Introduction**

**1.1 Why this HLD Document?**

This High-Level Design document helps define the structural approach of the project. It explains key modules, user flows, and metrics at a high level before moving into development. It also defines the technology choices, data flow, and project architecture.

**1.2 Scope**

This document outlines the BI solution built in Power BI to help finance and management teams track spending patterns and improve decision-making. The dashboard focuses on sales, costs, profits, customers, and country-level performance.

1. **General Description**

**2.1 Product Perspective & Problem Statement**

No business can thrive with high revenue but even higher costs. The aim of this project is to identify unnecessary expenses, loss-making transactions, and patterns in sales and profits using dashboard-driven analytics.

**2.2 Tools Used**

* Power BI (Dashboard & Reporting)
* Power Query (ETL)
* DAX (Calculations & KPIs)
* Microsoft Excel / CSV (Data source)
* GitHub (Code and ReadMe repository)

1. **Design Details**

**3.1 Functional Architecture**

* **Input** → Raw CSV Data
* **ETL Process** → Clean, transform, and enrich using Power Query
* **Calculated Columns** → Profit, Year-Month, Profit Margin
* **DAX Measures** → KPIs such as Total Sales, Total Profit
* **Output** → Visual dashboards with filters and insights

**3.2 Optimization**

* Removed unnecessary columns and nulls
* Handled inconsistent date formats manually
* Reduced complexity of DAX calculations
* Used slicers and filters for interactive analysis
* Aggregated data at monthly and product-level for better performance

1. **Key Performance Indicators (KPIs)**

* **Total Sales**
* **Total Profit**
* **Profit Margin**
* **Monthly Revenue Trend**
* **Top Performing Product Lines**
* **Most Valuable Customers**
* **Revenue by Country**
* **Loss-making Transactions**

1. **Deployment**

The Power BI .pbix file is published to Power BI Desktop. A version-controlled GitHub repository includes the:

* Project code
* ReadMe file
* Screenshots of dashboard
* Dataset
* Documentation

A demo video will be recorded explaining the dashboard walkthrough and business insights derived.