# High-Level Design Document for Power BI Project

## Introduction

**This document outlines the high-level design for the Power BI dashboard implementation for ElectroHub. The dashboard aims to provide insights into sales performance, trends, profitability, and customer engagement through interactive visualizations.**

## Project Overview

**The Power BI solution will enable users to analyze sales, profit, and order details using various filters and comparisons. The dashboard will support key business decisions by providing valuable insights into product performance, discounts, and sales distribution.**

## Architecture Diagram

**- Data Sources: SQL Database, Excel/CSV Files, Cloud Data Storage (if applicable)  
- ETL Process: Data cleansing and transformation using Power Query  
- Data Model: Fact and dimension tables in a star schema  
- Visualization Layer: Power BI reports and dashboards**

## Data Sources & Data Flow

**- *Data Sources:* Sales transactions, product details, customer information, discount categories  
- *ETL Process:* Extracting, transforming, and loading data into Power BI  
- *Data Refresh:* Scheduled daily or real-time refresh**

## Data Model & Schema

**- Fact Tables:  
 - Sales Fact Table (Sales, Profit, Quantity, Order ID, Date, Customer ID, Product ID, Discount, Promotion Category)  
- Dimension Tables:  
 - Date Dimension  
 - Product Dimension  
 - Customer Dimension  
 - Promotion Dimension**

## Key Metrics & KPIs

- **Top/Bottom 5 Products: By Sales, Profit, and Quantity Sold  
- Sales Trends: Daily, Monthly, Quarterly, and Annually  
- Sales vs. Profit Analysis: Correlation and trend comparison  
- Period-over-Period Comparison: Comparing sales, profit, and quantity sold between user-selected timeframes  
- Average Discount per Category  
- Total Number of Orders  
- Order-Level Breakdown: Sales, Profit, Discount, and Net Sales with filter options  
- Sales Distribution by City**

## Dashboard & Visualization Details

**- Charts & Graphs:  
 - Bar Chart: Top/Bottom 5 products  
 - Line Chart: Sales trends over time  
 - Scatter Plot: Sales vs. Profit correlation  
 - Comparative Bar Chart: Sales/profit/quantity sold for different periods  
 - Pie Chart: Sales distribution by city  
 - Table: Order-level details with filtering options**

## Security & Access Control

- **Role-Based Access Control (RBAC)  
- User Authentication & Authorization  
- Data-Level Security for Restricted Views**

## Performance Considerations

**- Data Aggregation & Indexing  
- Use of Composite Models for Optimization  
- Incremental Refresh Strategy**

## Conclusion

**This high-level design document outlines the structure and key elements of the Power BI dashboard for ElectroHub. The implementation will enable dynamic, insightful reporting for data-driven decision-making**.