Finance Data Analysis Report

Project Title: Financial Performance Analysis using SQL & Power BI

Objective: To analyze the financial performance of different departments using key metrics and visualize the insights through an interactive Power BI dashboard.

Tools Included : Mysql Workbench, Mysql Command Line Client, Power BI, Excel, Google Sheets,Google Docs

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Dataset Overview: The dataset used (finance_data) contains monthly budgeted and actual expenses and revenues for various departments: HR, Marketing, Sales, and R&D. The goal is to evaluate financial efficiency, profitability, and variances through meaningful KPIs.

Table Schema:

Column Name	Description
department	Name of the department

month	Month of the record
budgeted_expense	Budgeted expenses for the month
actual_expense	Actual expenses for the month
budgeted_revenue	Budgeted revenue for the month
actual_revenue	Actual revenue for the month

Key Performance Indicators (KPIs):

1. **Total Profit (Overall)**
    - **Definition:** Total company profit over all departments and months.
    - **Result:** -13,000
2. **Average Expense Variance (%)**
    - **Definition:** Measures average deviation between actual and budgeted expenses.
    - **Result:** 4.17%
3. **Average Revenue Variance (%)**
    - **Definition:** Average deviation between actual and budgeted revenue.
    - **Result:** -0.14%
4. **Total Budgeted Expense vs. Actual Expense**
    - **Definition:** Comparison between total planned and actual spend.
    - **Result:** 397,000 vs. 410,000
5. **Department with Highest Profit**
    - **Definition:** Identifies the department that generated the most profit.
    - **Result:** Marketing (Profit: 97,000)
6. **Total Budgeted vs. Actual Revenue**
    - **Definition:** Overall planned vs actual earned revenue.

    - **Result:** 395,000 vs. 395,000
7. **Profit Margin (%) by Department**
    - **Definition:** Ratio of profit to actual revenue, per department.

Power BI Dashboard: The Power BI dashboard contains:

- KPI cards for each metric.
- Bar charts to compare revenue, expense, and profit by department.
- Trendline visualizations (optional if monthly data increases).

Interactions Enabled:

- All visuals are connected.
- Filtering by department or month dynamically updates the dashboard.

Conclusion: This project effectively demonstrates the use of SQL for financial data extraction and transformation, and Power BI for visualization. The KPIs provide key insights into cost efficiency, revenue performance, and departmental profitability. This dashboard can be extended with more dimensions like year-over-year analysis, projections, and cost control flags.