GLOBAL SALES ANALYTICS

End-to-End BI Automation:
Excel + SQL + Power BI + Fabric + Gateway

SAHEB RAFIQUE

DATA ANALYST & BUSINESS INTELLIGENCE ANALYST

Project Summary

- **Goal**

Automate Power BI dashboard updates by connecting MySQL to Microsoft Fabric through an On-Premises Gateway.

The objective was to create a seamless pipeline where new sales records automatically update all dashboards without manual intervention.

- **Why Automation Was Needed**

Manual refreshes were slow, repetitive, and error-prone

Dashboards often became outdated before stakeholder reviews

Increased data volume made manual processes unsustainable

Analysts spent more time maintaining reports instead of analyzing insights

Outcome

Dashboard now **auto-refreshes** when new countries or records are inserted into MySQL

New regions like **Saudi Arabia** and **UAE** appeared instantly after SQL upload

All visuals update automatically, providing real-time insights

The BI workflow is now stable, scalable, and suitable for production environments

BEFORE Refresh – Dashboard Summary

SALE

Global Sales Analytics

Interactive Sales Insights Across Countries, Categories & Time

WELCOME, SAHEB RAFIQUE

Total Profit	Total Sales	Total Orders	Total Discount Given	Average Order Value
1.11M	4.85M	3.50K	89.54K	1.39K

- Overview
- Customer Insights
- Product & Store Performance
- Time Intelligence & Trends

SALES PERFORMANCE SUMMARY

Business Highlights

- **$4.85M+ Total Sales** generated across all markets.
- **Australia, US & China** lead in both **revenue and profitability**.
- **Home & Kitchen** ranks as the **top-performing category** by sales volume.
- **Balanced Payment Behavior:** Cash, Credit Card & Mobile Payment each contribute ~33%.
- **Adults (25–40 yrs)** are the **strongest customer group**, generating the highest sales.
- **Top Performing Stores: New York, Birmingham & Guangzhou consistently** outperform others.
- **Monthly Sales Trend:** Strong upward momentum from **May → December**, peaking during holiday season.
- **YoY Growth:** Positive and stable, signaling strong market expansion.
- **Discount Efficiency:** Total discounts of **89.54K** are helping drive sales without significantly reducing profit.
- **Top 10 Products** show strong and consistent demand, with repeat buying behavior.
- **Rolling 12-Month Trend:** Smooth upward curve across both **sales & profitability**.

Note: **Insights derived from sales transactions across 7 countries, 500+ stores, and multiple customer demographics.**

AFTER Refresh – Dashboard Summary

SALE

Global Sales Analytics

Interactive Sales Insights Across Countries, Categories & Time

WELCOME, SAHEB RAFIQUE

Total Profit	Total Sales	Total Orders	Total Discount Given	Average Order Value
1.81M	7.58M	4.50K	99.85K	1.68K

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Before and After Refresh – Country Filter

Before

After

Before and After Refresh – Customer Insights

Before

After

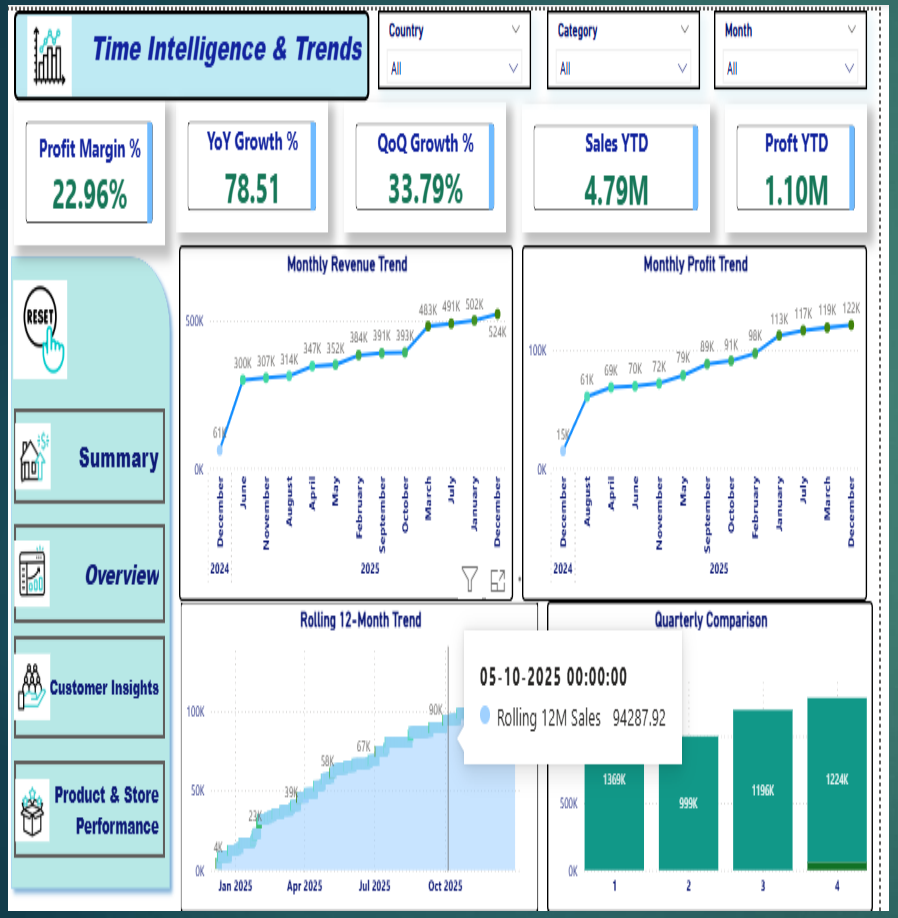
Before and After Refresh – Product and Store Performance

Before

After

Before and After Refresh – Time Trends

Before



After

SQL & Data Update Process

- • Inserted Saudi Arabia & UAE records into MySQL master table.
- • Updated Profit & Total Amount calculations.
- • Ensured consistent schema and formatting for Power BI ingestion.

```
1 •  SELECT Country
2     FROM sales_analysis.master_sales_data
3     group by Country
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

Country
Canada
China
India
Nigeria
UK
US
Australia
Saudi Arabia
United Arab Emirates

Fabric - Gateway Automation

- **Successfully connected Microsoft Fabric to the MySQL database using the On-Premises Data Gateway**, enabling secure, real-time access to local data from the cloud environment.
- **Configured, mapped, and validated the semantic model connection** to ensure Power BI/Fabric could correctly read and query the updated MySQL tables.
- **Set up a scheduled refresh cycle** so the dashboard automatically updates on a daily basis without manual intervention, ensuring stakeholders always see the latest sales insights.
- **Performed a manual on-demand refresh** to confirm the gateway connection, refresh pipeline, and semantic model were functioning correctly before full automation.

Why We Used Gateway Instead of Direct-Query in Power BI

MySQL does not support Direct-Query natively in Power BI Service

Power BI Desktop can connect to MySQL,
but Direct-Query mode is not supported for refresh in Power BI Service.

Without Direct-Query, publishing the report would not allow real-time queries.

- **To enable automatic updates, we used the On-Premises Data Gateway**

The Gateway securely connects Power BI Service with the **local MySQL Server**.

It allows Power BI to refresh the dataset on a schedule or manually.

No need to republish the PBIX file every time the database changes.

- **Gateway enables enterprise-grade data refresh**

Supports encrypted credential storage.

Automatically refreshes the semantic model from MySQL.

Ensures the dashboard always reflects the latest sales records.

- **Result**

After adding Saudi Arabia & UAE data to MySQL,
the **Power BI dashboard updated automatically after Gateway refresh**
— demonstrating successful automation.

Key Outcomes

- • Dashboard updated instantly with new regions.
- • Fully automated BI workflow achieved.
- • No manual imports needed.
- • Scalable for future countries and datasets.

Final Remarks

- This project demonstrates a complete Data Analytics + BI pipeline:
- Excel → SQL → Transformation → Fabric Gateway → Power BI Automation.
- A strong showcase of automation, modeling, and professional dashboard development.