My Power BI Business Intelligence Project

I created this dashboard as part of my learning journey through the *"Power BI Desktop for Business Intelligence"* course on Udemy. My goal was to design a complete business intelligence solution that could help decision-makers understand sales, profitability, returns, and customer behavior in one place. I wanted to build something that not only showed numbers but also told a clear story about how the business was performing, and where improvements could be made.

The first step was working with the data itself. I imported sales, returns, product, customer, and territory data into Power BI. Using Power Query, I cleaned and transformed the raw files—removing null values, setting the right data types, and making sure keys matched across tables. I also created a proper calendar table in Power Query, which gave me flexibility with time-based calculations like Year-to-Date sales and year-over-year growth. This stage was critical because I knew the quality of my insights would only be as good as the quality of the data model.

Next, I designed the data model. I chose a star schema with FactSales and FactReturns in the center, connected to dimension tables for Products, Customers, Territories, and Calendar. This setup ensured clean one-to-many relationships and made calculations more reliable. I deliberately disabled Power BI's auto date/time and built my own calendar to keep things transparent and efficient.

Once the model was in place, I moved on to creating DAX measures. This was where the analysis started to come alive. I wrote measures for Total Sales, Total Cost, Profit, Profit Margin, Return Rate, and Revenue per Customer. I also used time intelligence functions like TOTALYTD() and SAMEPERIODLASTYEAR() to track performance over time. For me, this part of the process was about translating business questions into repeatable calculations that anyone could slice by region, product, or customer segment.

With the data model and measures ready, I began building the reports. I designed multiple pages to serve different purposes:

- **Executive Dashboard** – A high-level view with KPIs like Sales, Profit, Margin %, and Return Rate. I added trend charts and category/region breakdowns so executives could quickly see the big picture.
- **Regional Map** – A map-based view to compare sales and profit across territories, with filters and buttons to make navigation easy.
- **Product Details** – A deeper look at categories and products, including gauges for margin and return rate, plus time-based trends.
- **Customer Details** – A page focused on customer segments, showing revenue per customer, retention trends, and contribution by segment.
- **Advanced Analytics** – I also included special pages with a Decomposition Tree and Key Influencers. These visuals allowed me to explore what factors drove profit or return rates and gave me unexpected insights into relationships in the data.

As I built the dashboards, I focused a lot on user experience. I added slicers for time, product, and region, used consistent design elements, and created tooltips to show more detail when hovering over visuals. I also added bookmarks and buttons to make the report interactive and easy to navigate.

Finally, I spent time testing the model. I validated totals against the raw data, checked that filters worked correctly across pages, and used the Performance Analyzer to identify any slow visuals. This gave me confidence that the report was accurate and efficient.

Through this project, I was able to answer key questions. I identified which regions and categories were driving sales growth, which products had high revenue but poor margins, and where return rates were eating

into profitability. I also saw that a small group of customers contributed a large portion of revenue, which suggested opportunities for targeted loyalty programs.

Overall, this project brought together everything I learned in the Udemy course and allowed me to apply it in practice—from Power Query transformations to data modeling, DAX calculations, and dashboard design. More importantly, it showed me how data can be turned into a tool for better business decisions.