SQL and Power BI Integration Project

**Introduction**

This project will leverage the use of SQL queries to feed a Power BI dashboard with the database called Adventure Works from Microsoft that can be downloaded [here](https://github.com/Microsoft/sql-server-samples/releases/download/adventureworks/AdventureWorksDW2014.bak). The Power BI report will have 3 pages: Home, General, Clients.

**KPIs**

KPIs for the General Page:

1. Total Revenue
2. Quantity Sold
3. Total of Product Categories
4. Total Number of Clients
5. Total Revenue and Total Profit per Month
6. Profit Margin
7. Quantity Sold per Month
8. Profit per Month

KPIs for the Client page:

1. Sales per Country
2. Clients per Country
3. Sales per Gender
4. Sales per Category

**Tables and Columns**

Tables and columns used to create the View in SQL Server are going to be:

* FactInternetSales: SalesOrderNumber, OrderDate, CustomerKey, SalesAmount, OrderQuantity, TotalProductCost
* DimProduct: ProductKey
* DimProductSubcategory: ProductSubcategoryKey
* DimProductCategory: ProductCategoryKey, EnglishProductCategoryName
* DimCustomer: FirstName, LastName, Gender, CustomerKey
* DimGeography: GeographyKey, EnglishCountryRegionName

The SQL query of the View was saved in the file SQLQueryCreatingView that can be opened using SSMS.

**Power BI Connection with SQL**

The Power BI app can connect to the SQL Server (or any other database) by clicking on the Get Data button on the Initial Page tab. To connect specifically to a SQL Server database, it’s necessary to select it from the Get Data and copy and paste the server name and the database name (the database being optional). After following the simple steps prompted by the software you shall be able to start creating visuals.

**Power BI Dashboard**

The Power BI report will have 3 pages as explained before. Follow below for more information about each page:

1. Home Page:
2. General Page: This page shows the total revenue, total quantity, number of product categories and total clients as cards. As charts, shows the total revenue and total profit per month, total revenue per country, total quantity per month and profit margin. The page also contains a filter by year on the top.
3. Client Page: Shows total revenue and total profit as cards, total quantity per country as a bubble map, number of clients per country as a column bar chart, clients per gender as doughnuts chart and quantity per product category as bar chart.

All 3 pages have buttons to create a better navigation experience.

**Update Database**

The database was changed by modifying the OrderQuantity to all 1’s, as it was before the Excel and SQL Integration Project. With this changes, we can update the Power BI report by going to the Initial Page and clicking on the Update button. The data in all visualizations will update automatically.

Following there are screenshots of each page of the report.





