



Tech Saksham

Case Study Report

Data Analytics with Power BI

"Supply chain Analysis of
Inventories"

"Government Arts and Science College,
Aundipatti"

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Introduction

POWER BI

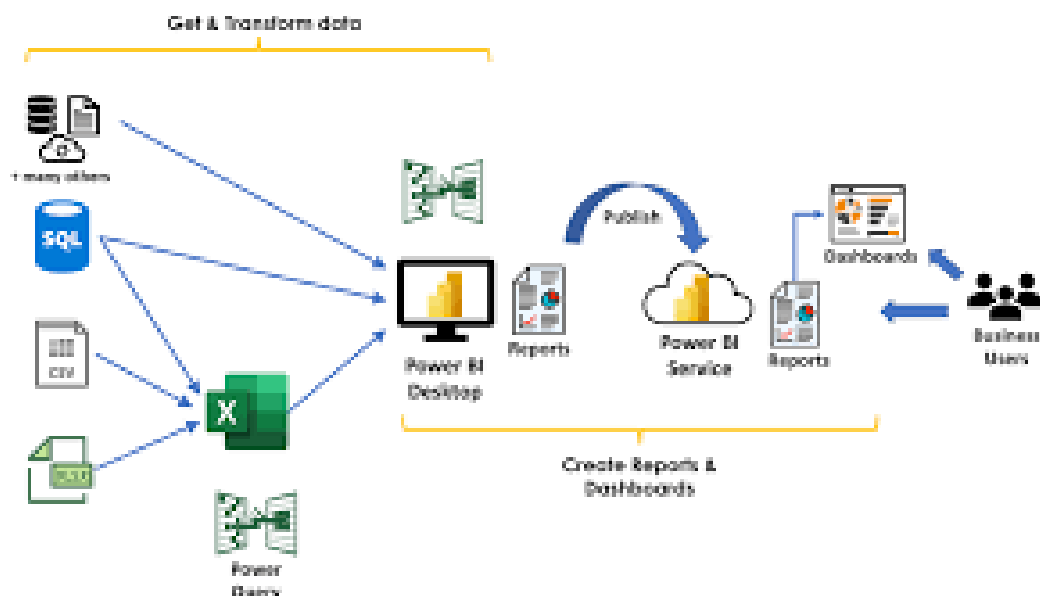
Power BI is a collection of software services ,apps, and connectors that work together to turn your unrelated sources of data into coherent, visually immersive, and interactive insights. Your data might be an excel spreadsheet ,or a collection of cloud-based and on-premises hybrid data warehouses. Power BI server ,an on-premises report server where you can publish your power BI reports after creating them in power BI desktop.

Power BI dashboard

Power BI dashboard is a single page, often called a canvas, that tells a story through visualizations. Because it's limited to one page, a well-designed dashboard contains only the highlights of that story. Readers can view related reports for the details. A dashboard is an information management tool that receives data from a linked database to provide data visualizations.

Power BI process

1. **Connect to data, including multiple data sources.**
2. **Shape the data with queries that build insightful, compelling data models.**
3. **Use the data models to create visualizations and reports.**
4. **Share your report files for others to leverage, build upon, and share. You can share Power BI Desktop**



Power Query editor

Power Query is a powerful tool used to connect to many different data sources and transform the data into the

shape you want. The scenarios outlined in this article are examples to show you how you can use Power Query to transform raw data into important actionable business insights.

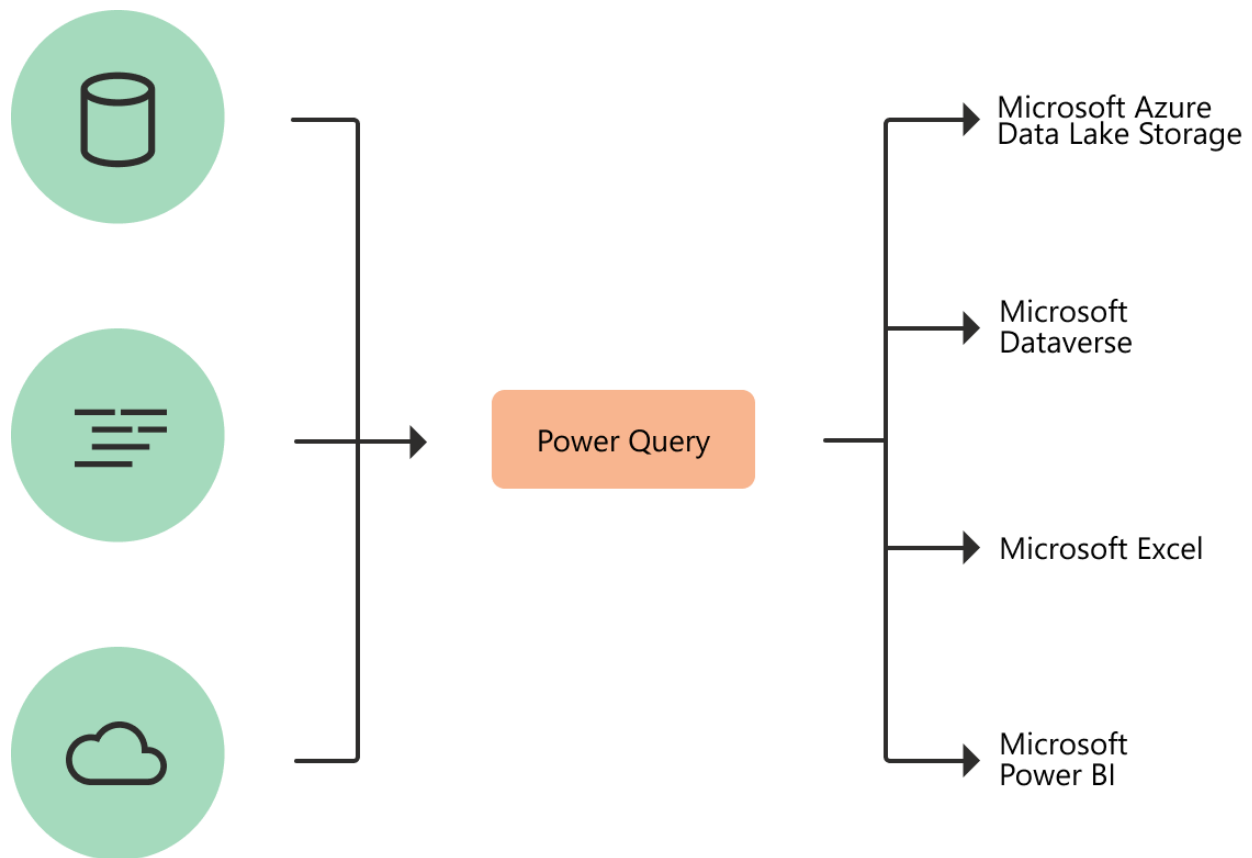
Software Requirement

Power BI Desktop: This is a Window application that you can use to create reports and publish them to Power

Power BI Service: This is an online SaaS(Software as a Service) service that you use to publish reports, create new dashboards, and share insight.

Power BI Mobile: This is a mobile application that you can use to access your reports and dashboards on the go.

Power Query is a data transformation and data preparation engine. Power Query comes with a graphical interface for getting data from source and a Power Query Editor for applying transformations. Because the engine is available in many products and services, the destination where the data will be stored depends on where Power Query was used. Using Power Query, you can perform the extract, transform, load, PROCESSING DATA.



The Power Query Editor is the primary data preparation experience, where you can connect to a wide range of data sources and apply hundreds of different data transformations by previewing data and selecting transformations from the UL.

These data transformation capabilities are common across all data sources, whatever the underlying data source limitations.

When you create a new transformation step by interacting with the components of the Power Query interface, Power Query automatically creates M code required to do the transformation so you don't need to write any code. Currently, two Power Query experiences are available:

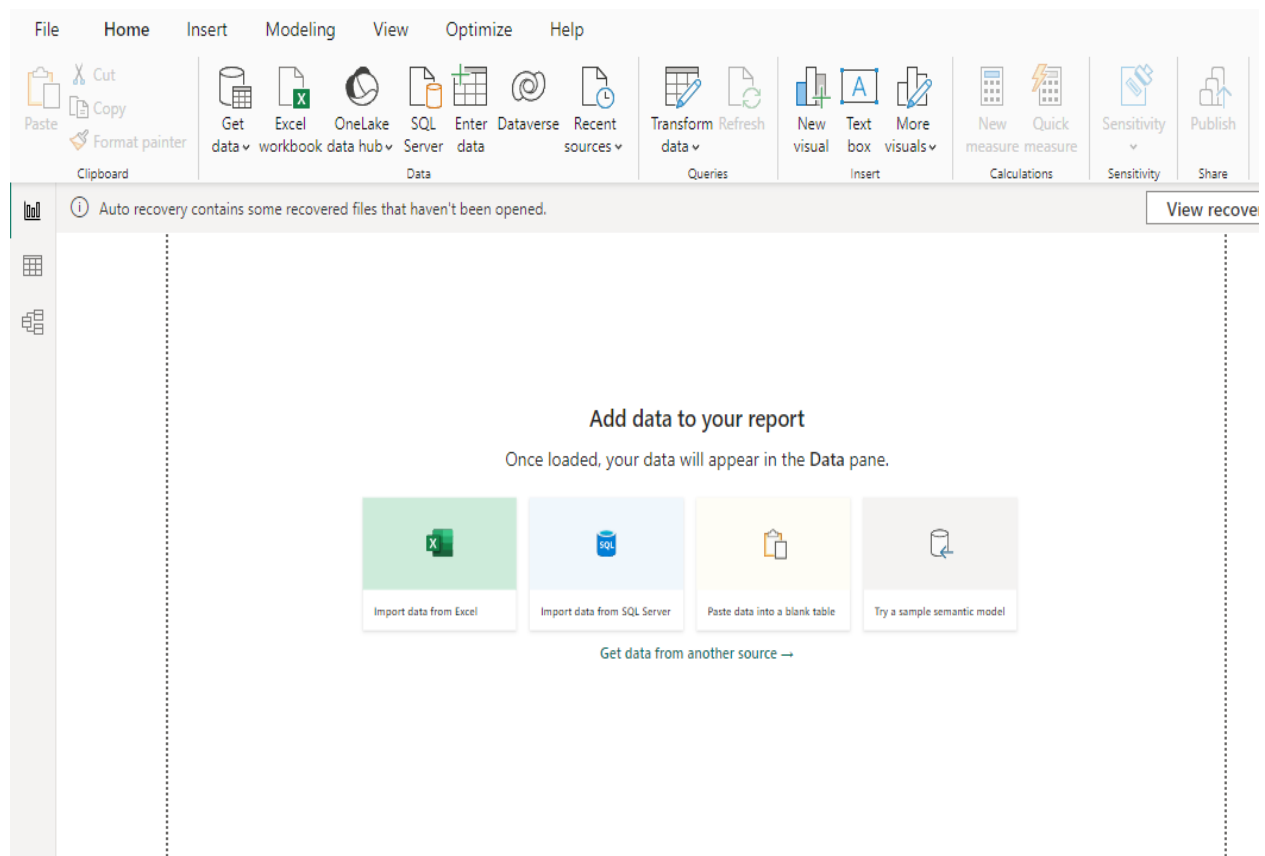
POWER QUERY ONLINE- Found in integrations such as Power BI dataflows, Microsoft power platform dataflows, Azure Data Factory wrangling dataflows, and many more that provide the experience through an online web page.

POWER QUERY FOR DESKTOP- Found in integrations such as Power Query for Excel and Power BI Desktop.

NOTE: Although two Power Query experiences exists, they both provide almost the same user experience in every scenario.

TRANSFORMATION: The transformation engine in power Query includes many prebuilt transformation functions that can be used through the graphical interface of the Power Query Editor. These transformations can be as simple as removing a column or filtering rows, or as common as using the first row as a table header. There are also advanced transformation options such as merge, append, group by, pivot, and unpivot.

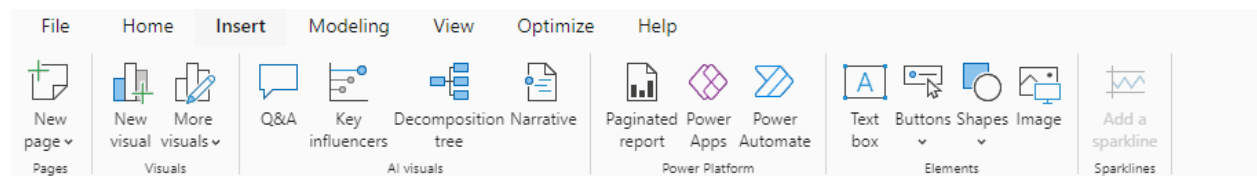
All these transformation are made possible by choosing the transformation option in the menu, and then applying the options required for that transformation. The following illustration shows a few of the transformations available in Power Query Editor.



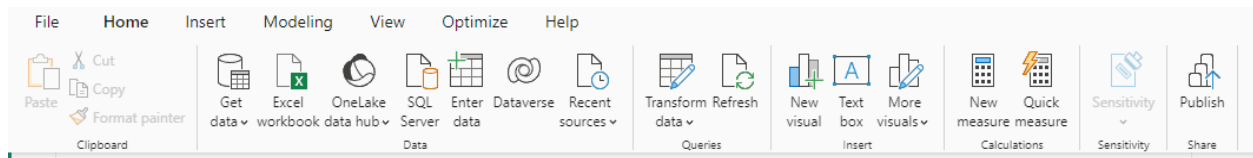
USER INTERFACE:

THE RIBBON: At the top we have the familiar Microsoft Ribbon. Just like the ribbons in Microsoft Excel and Word and Power point, the Power BI ribbon is filled with tools split up into different tabs.

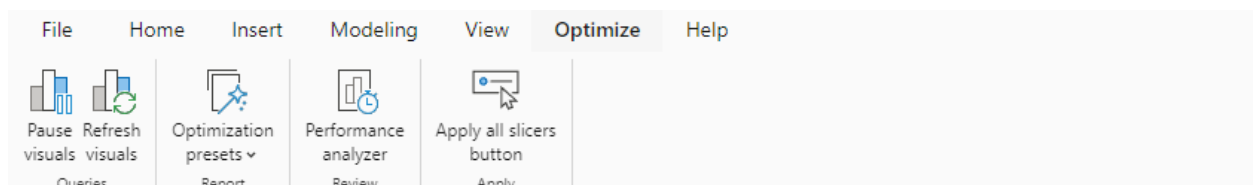
RIBBON TABS: The HOME tab has tools for adding data sources, accessing power Query Editor (used for cleaning and transforming data) via the "Transform data" buttons, and adding in visuals and more



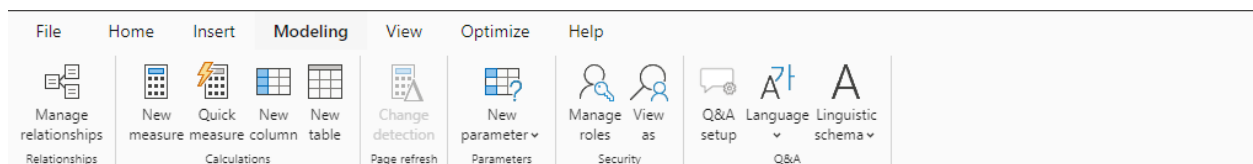
The MODELING tab lets us create DAX measures, or even new columns and tables, and also lets us set up a security model if we need some users to only see some data.



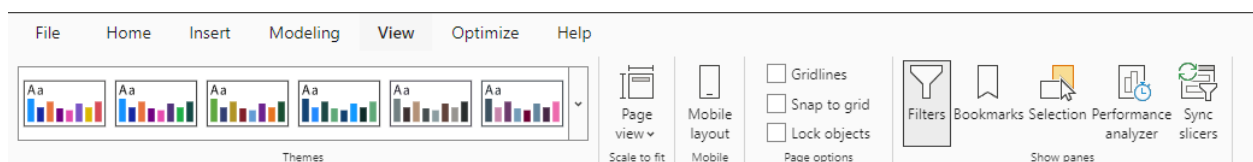
The INSERT tab lets us insert different visual, text boxes, buttons.



The VIEW tab lets us set a theme for our reports, set up mobile layouts, and access other panes that don't show up by default.



The OPTIMIZE tab has tools to check the efficiency of our reports... as in if they are loading really slow, we can analyze what parts of the report are loading really slow.



The HELP tab has links to things like Microsoft forums Power BI blog which has news about new features.

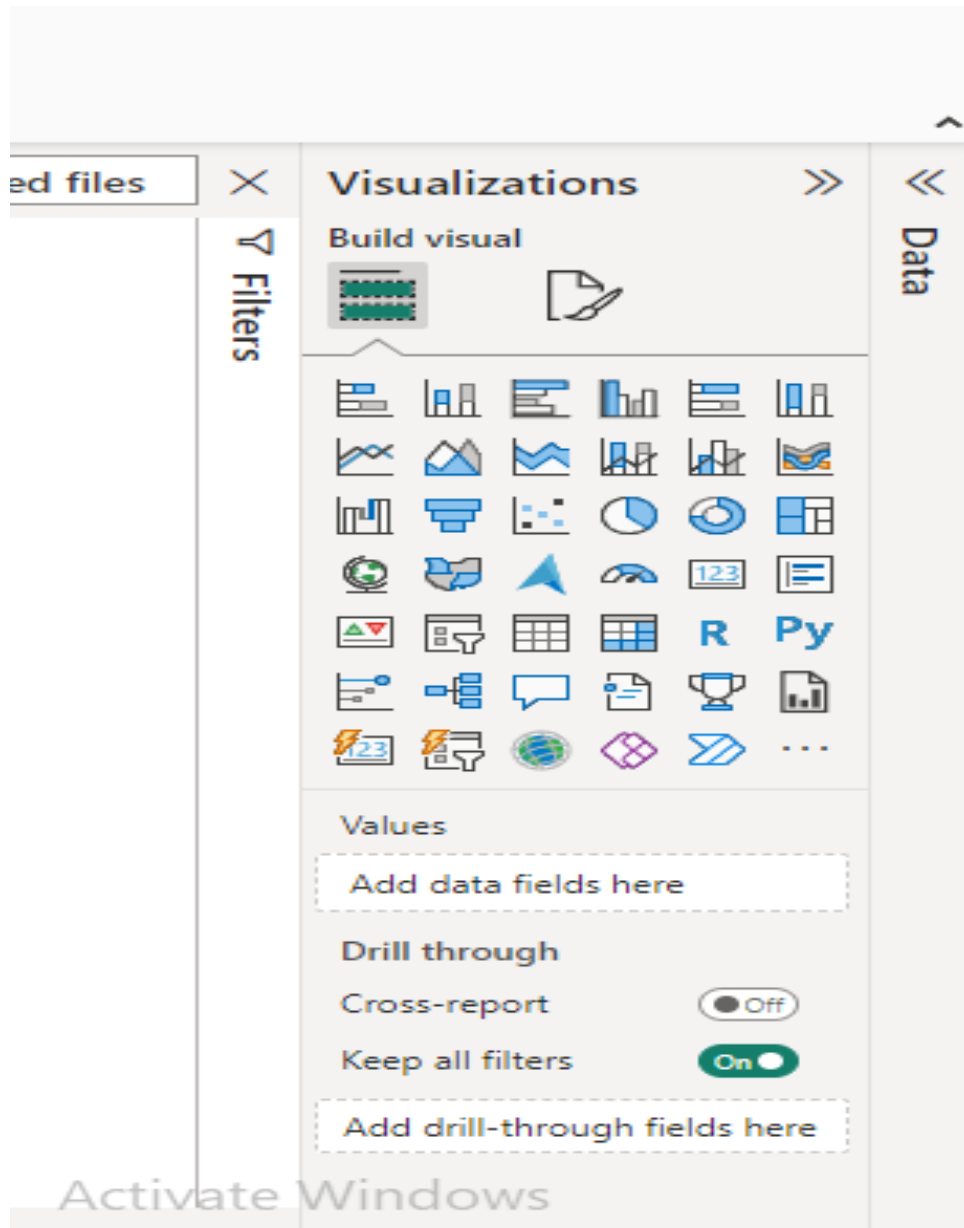
The EXTERNAL TOOLS tab is where 3rd-party tools live. There are only a few of these okay' by Microsoft, and if you haven't download one, this tab doesn't show up.

PANES:

On the right side of the Power BI interface are 3 panes that appear by default. The DATA pane is where we see the tables and columns of data we've added.

The VISUALIZATION pane is where we can choose what visual we want to make, and it also has formatting tools. The FILTERS pane is where we can create filters and control what data is making it

from our data to the visual on our ,



theme for our reports, set mobile layouts, and access other panes that don't show up by,

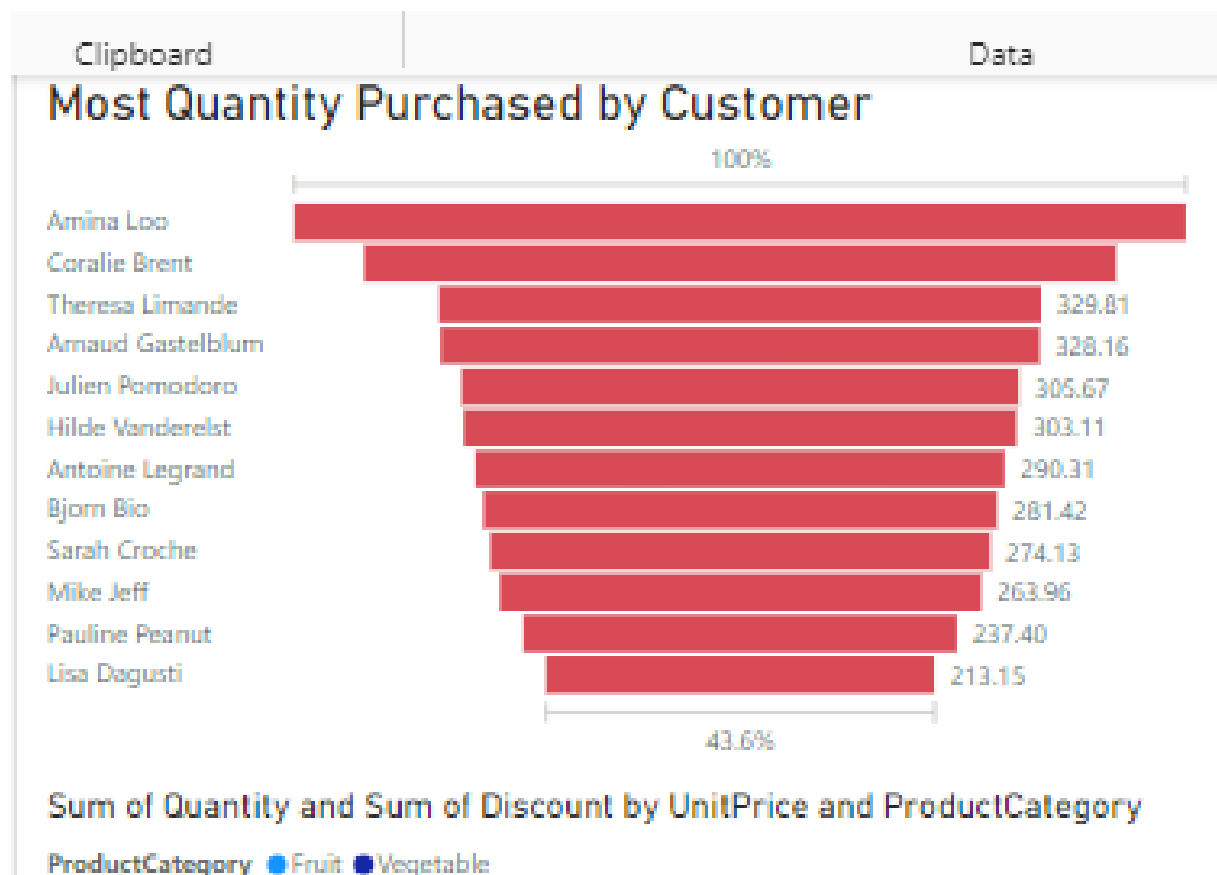
ABOUT MY PROJECT: Supply Chain Management(SCM) is the handling of the entire production flow of goods and services that

include all process for converting raw materials into final products. It involves the active streamlining of a business's supply side activities to maximize customer value and gain a competitive advantages in the market.

Supply Chain Management practice depends heavily on industrial engineering, systems engineering, cooperation management , logistics, procurement information technology and marketing, and strives for an integrated approach. It is the broad range of control and execute a products flow from materials to production to distribution in the most economical possible.

Supply Chain Management encompasses the planning and management of all activities involved in sourcing. Procurement, conversion, and logistics management activities. Importantly, it also includes coordination and collaboration with channel partners, which can be suppliers, intermediaries, third-party service providers, and customers. In essence, Supply Chain Management integrates supply and demand management within and across companies

DATA SHEET

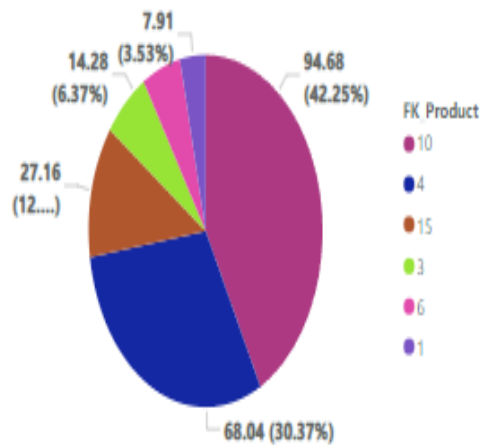


This graph represent the total amount and the customer full name

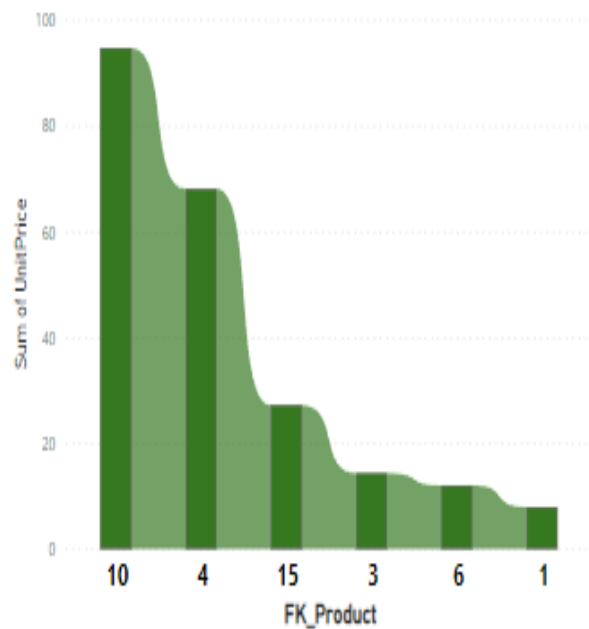
PIE CHART AND GAUGE CHART:

The pie chart represent the product name and product unit price
The gauge chart show product name and their quantity RI.

Sum of UnitPrice by
FK_Product



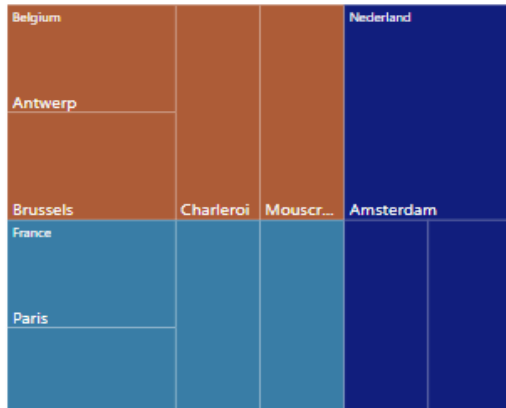
Sum of UnitPrice by FK_Product



RIBBON CHART AND COLUMN CHART

The ribbon chart represent city, country and genders but the column chart represent the country and city alone.

Count of Gender by Country and City

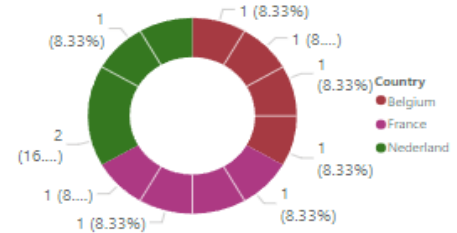


Ask a question about your data

Try one of these to get started

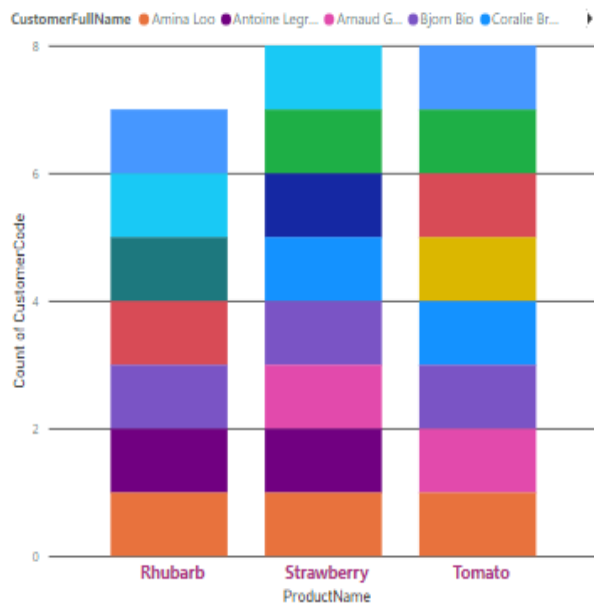
count genders count products

Count of Gender by Country and City

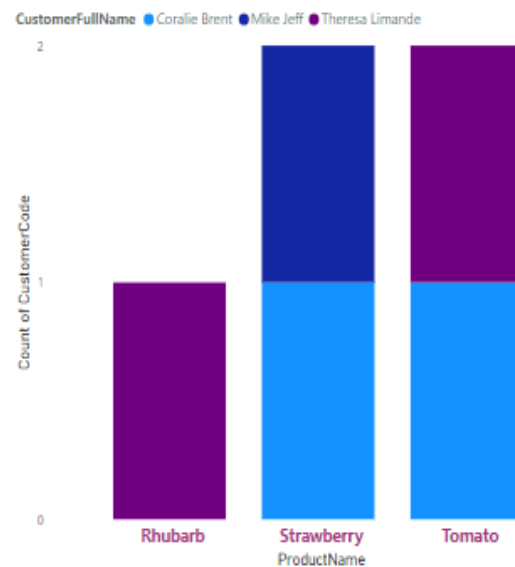


TREE CHART:

Count of CustomerCode by ProductName and CustomerFullName



Count of CustomerCode by ProductName and CustomerFullName

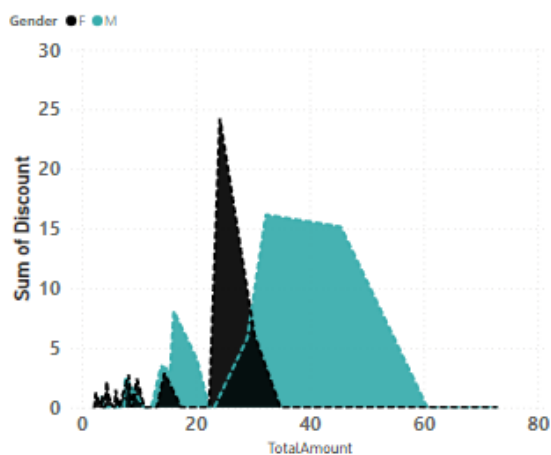


Here The chart show the customer code and customer ISO code and the products.count customer product name of ISO code and products.

WATER FALLS CHART AND COLUMN CHART:

Both charts represent gender and year in various format .

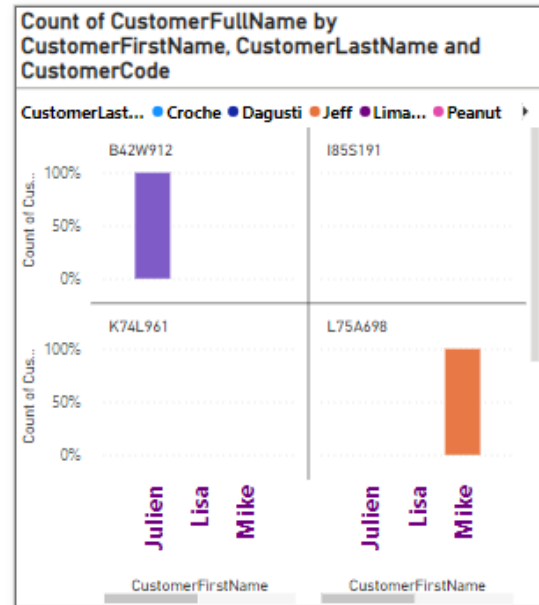
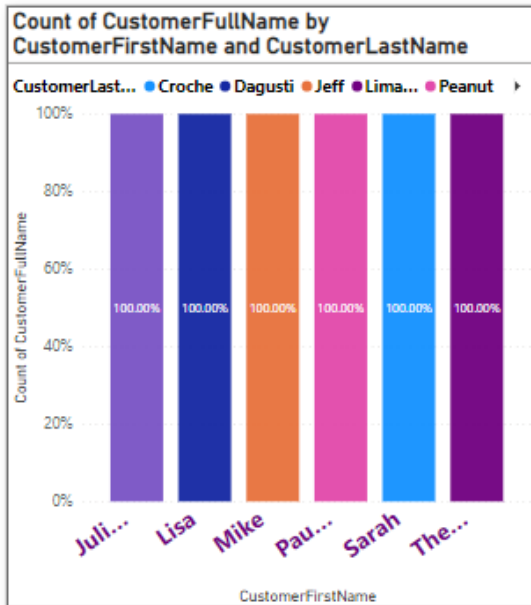
Sum of Discount by TotalAmount and Gender



Sum of Discount by TotalAmount and Gender



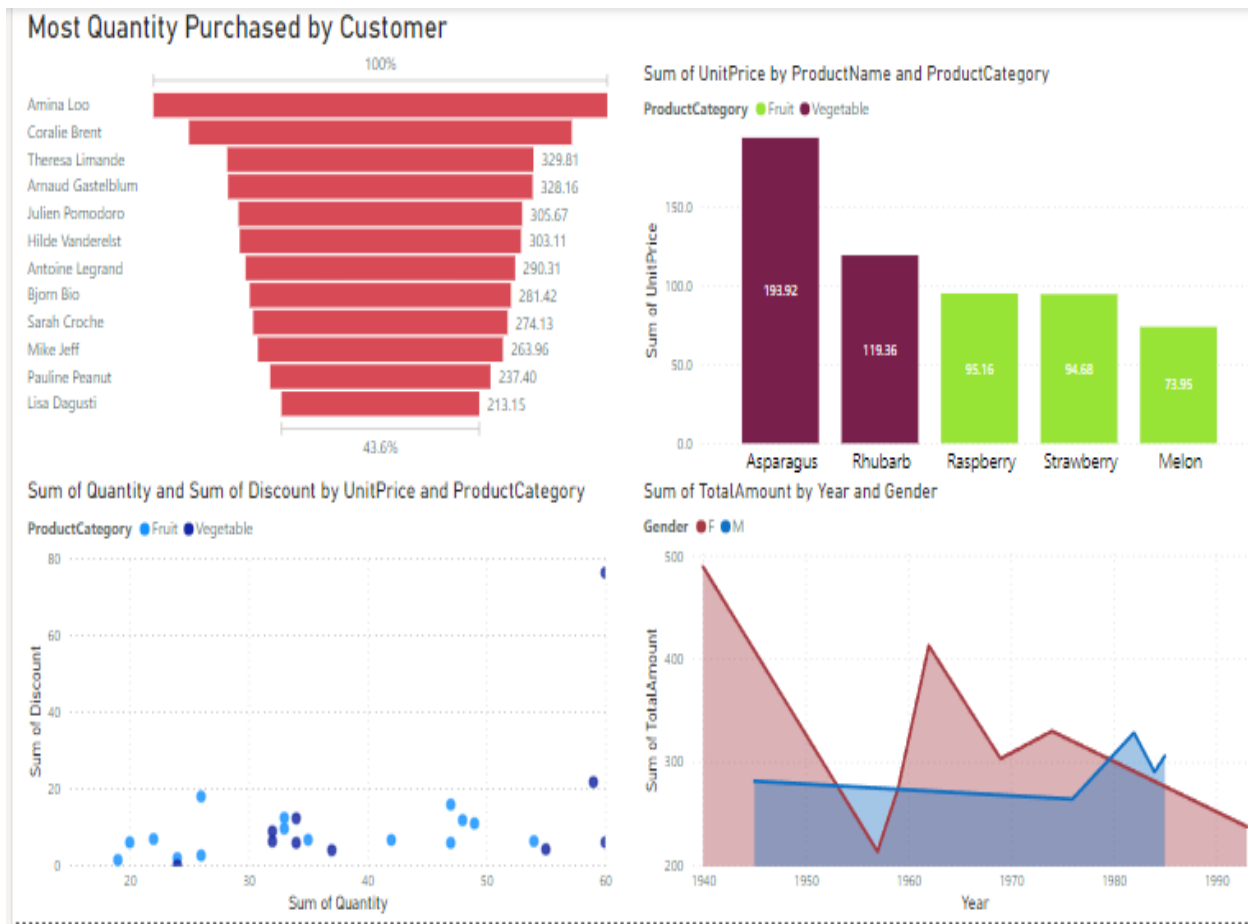
DOUGHNUT CHART:



Its show the graph between customers first and last name.

DASHBOARD AND REPORTS:

SUPPLYCHAINANALYSIS:



REPORTS:

Power BI numerous benefits for project tracking. One of the main advantages is its ability to consolidate data from multiple sources, such as project management tools, financial systems, and spreadsheets. This allows project managers to have a holistic view of the project, making it easier to identify trends, patterns, and anomalies. Power BI's advanced visualizations enable the creation of intuitive dashboards , making it effortless to track project progress at a glance.

Furthermore, Power BI's interactive features allow users to explore and drill into the data, gaining deeper insights into the project's performance. Another benefit of using Power BI for

project king is its ability to automate data refreshes. With power BI, project managers can set up scheduled refreshes to ensure that the data is always up to date. This eliminates the need for manual data updates and reduce the risk of using outdated information for decision-making.

In addition, Power BI offer a wide range of Collaboration features that enhance team Collaboration and communication. Project teams can easily share dashboards and reports with stakeholders, enabling real-time annotations to specific data points, facilitating discussion and improving the overall project tracking process.

CONCLUSION: Microsoft Power BI is an indispensable tool in the realm of business intelligence. Its robust features, ease of use, and ability to transform raw data into actionable insights make it a top choice for organizations worldwide. As you wrap up your Power BI project, consider the following key points.

DATA CONNECTIVITY: Power BI's extensive connector library allows seamless integration with various data sources, including Google Analytics, SQL database, and more.

CUSTOM VISUALISATION: Leverage Power BI's pre-designed visualizations to create interactive reports tailored to your specific needs. Additionally, explore third-party solutions like Fluen Pro's report packs for enhanced intelligence and analytics.

PERFORMANCE OPTIMIZATION: The columnar database engine within power BI significantly improves performance by compressing large datasets, making it an effect choice for data modeling.

<https://github.com/Pradeepa18/Pradeepa-power-bi>