



Tech Saksham

Case Study Report

Data Analytics with Power BI
"supply chain analysis of
Inventories"

**"Government Arts and Science College,
Aundipatti"**

NM ID	NAME
FF967DE02BA389DBF614261388ED D9C0	G. KAMATCHI

Trainer Name : UMAMAHESHWARI R
Master Trainer: UMAMAHESHWARI R

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Introduction

Power BI:

Power BI is a data visualization and business intelligence tool that converts data from different data sources to interactive dashboard and bi reports. power BI suite provides multiple software, connector, and service based on saas, and mobile powerbi apps available for different platforms. These set of services are used by business user to consume data and build BI reports.

Power BI desktop app is used to create reports, while power BI services (Software as a Service-SaaS) is used to publish the report, and Power BI mobile app is used to view the reports and dashboards. Power BI desktop is also available in both 32 bit and 64 bit versions.

Power Bi dashboard:

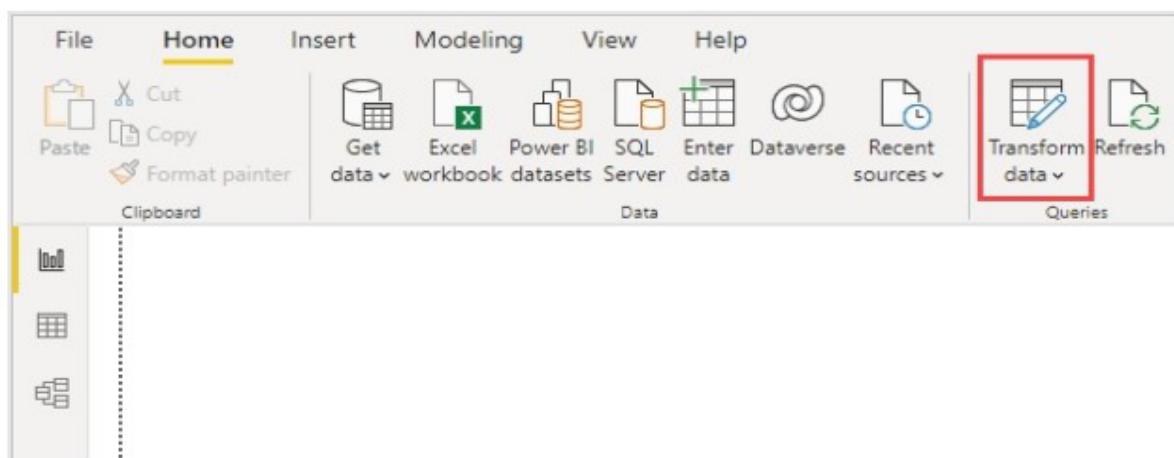
A power bi dashboard is a single page often called a canvas that tells a story through visualization because it's limited to one page, a well-designed dashboard contains only the highlights of that story readers can view related reports for the details.

Power Bi process:

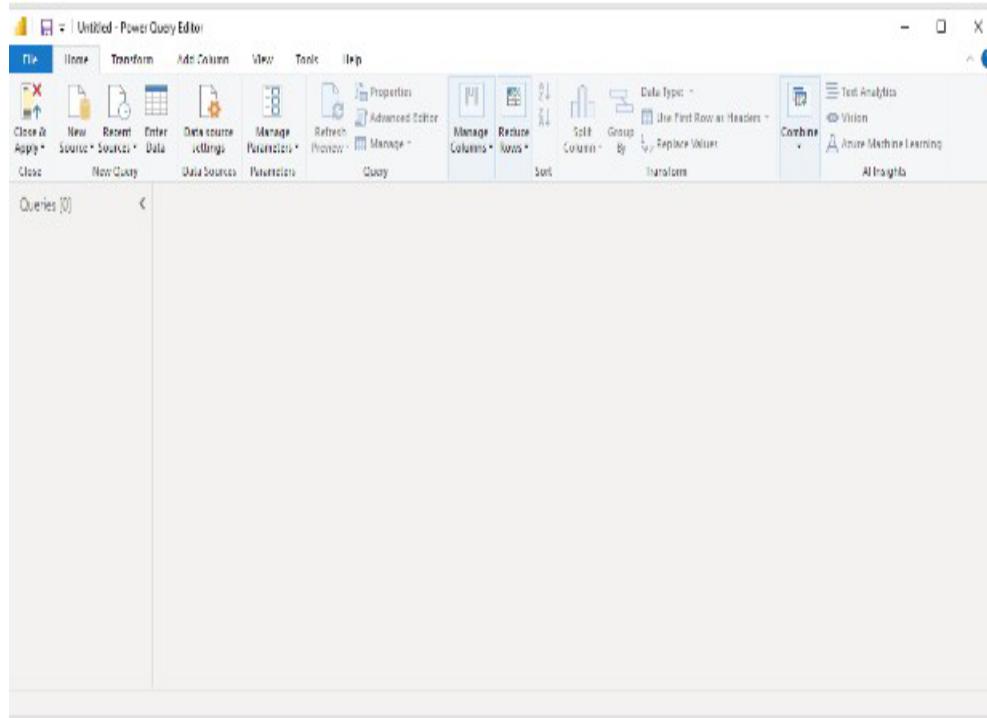
One common workflow in power BI begins by connecting to data sources in power bi desktop and building a report you then publish that report from power BI desktop to the power Bi service, and share it so business users in the power Bi service and on mobile devices can view and interact with the report

POWER QUERY EDITOR

To get to power query editor, select transform data from the home tab of power bi desktop.



With no data connections,power query editor appears as a blank pane,ready for data



**After a query is loaded, power query editor view becomes more interesting.
If you connect to a web data sources using the new source button in the top left, power query editor loads information about the data,which you can then begin to shape**

- 1. In the ribbon ,many buttons are now active to interact with the data in the ouery**
- 2.in the left pane, queries are listed and available for selection, viewing, and shaping**
- 3.in the centre pane, data from the selected query is displayed and available for shaping**
- 4.the ouery settings pane appears listing the ouerys properties and applied steps .**

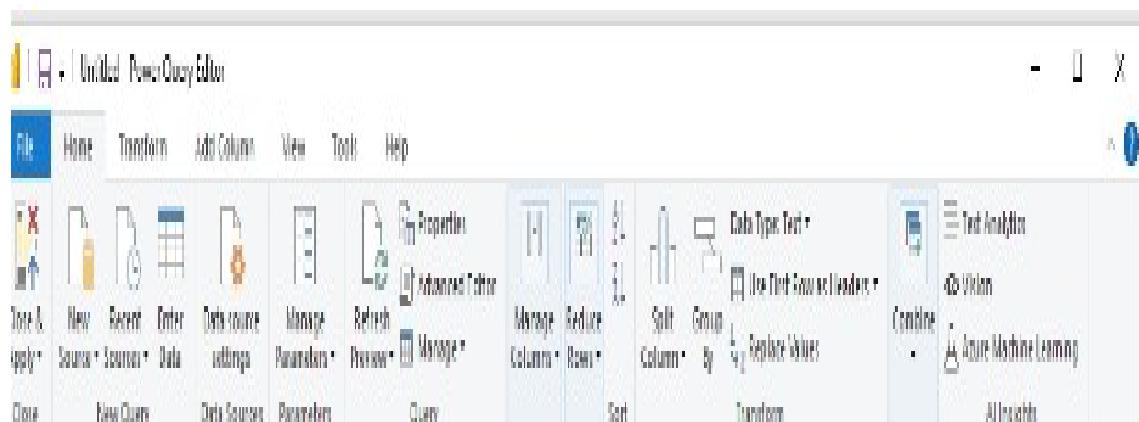
The screenshot shows the Microsoft Power Query Editor interface. The ribbon at the top has tabs for File, Home, Transform, Add Column, View, Tool, and Help. The Home tab is selected, indicated by a red circle labeled 1. The main area displays a table titled 'Table1' with 17 rows of data. A red circle labeled 2 points to the 'Overall risk' column header. A red circle labeled 3 points to the 'Affordability risk (%)' column header. A red circle labeled 4 points to the 'Name' field in the 'PROPERTIES' pane on the right. The 'APPLIED STEPS' pane shows three steps: 'From Text' (0), 'Promoted Headers' (0), and 'Changed Type' (highlighted with a red border). The status bar at the bottom indicates '6 COLUMNS, 20 ROWS'.

Each of these four areas will be explained later; the ribbon the oueries pane, the data view, and the ouery settings pane

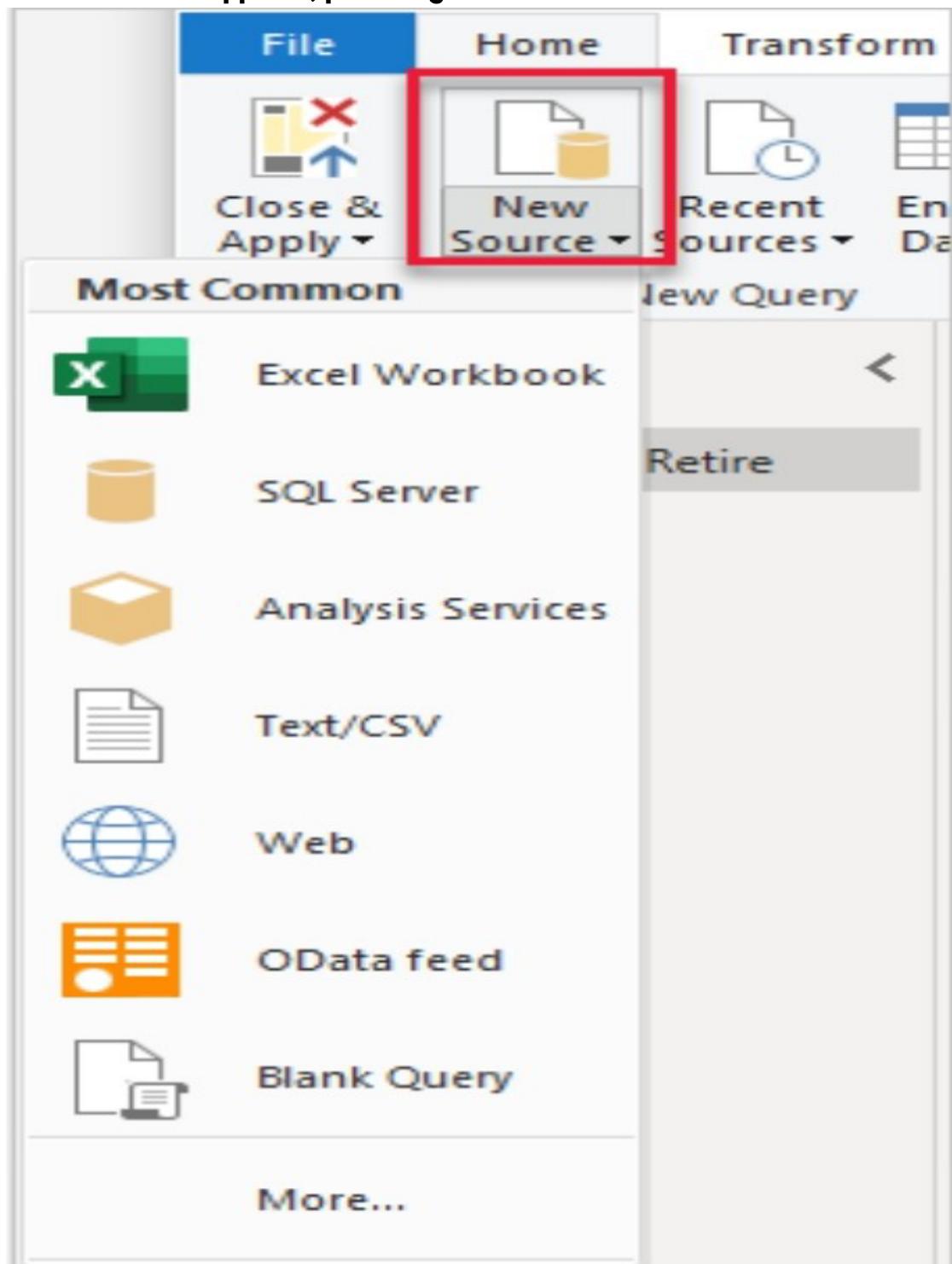
User interface:

The ribbon in power ouery editor consists of four tabs; home, transform, add column, view, tools, and help

The home tab contains the common ouery tasks.



To connect to data and begin the query building process, select new source. A menu appears, providing the most common data sources



For more information about available data sources, see [data sources](#). For

information about connecting to data, including examples and steps, see connect to data.

The transform tab provides access to common data transformation tasks, such as :

1.adding or removing columns

2.changing data types

3.splitting columns

4.other data _driven tasks

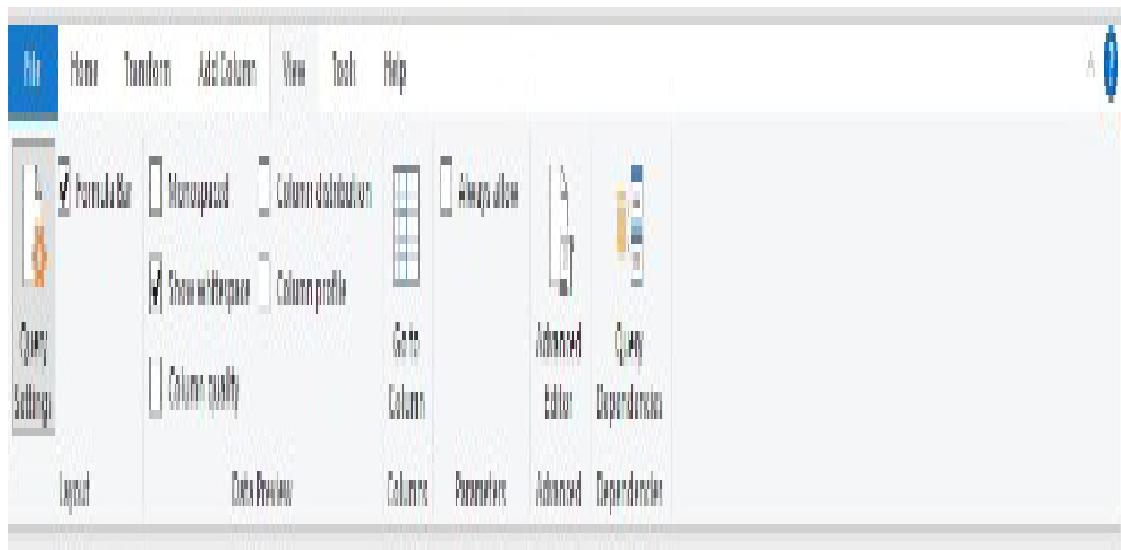


For more information about transforming data, including examples, see tutorial:shape and combine data in power Bill desktop

The add column tab provides more tasks associated with adding a column,formatting column data, and adding custom columns. The following image shows the add column tab.



The view tab on the ribbon is used to toggle whether certain panes or windows are displayed. It's also used to display the advanced editor. The following image shows the view tab.



It's useful to know that many of the tasks available from the ribbon are also available by right -clicking a column, or other data, in the centre pane.

ABOUT MY PROJECT :

For many leaders and decision -makers interactive data visualization and

Analytics continue to be a theme for technologies that are vital in keeping the supply chain going. However there's the constant challenge of transforming troves of data into usefully, actionable insights that, in turn, fuel timely and accurate decision-making. Visualizing data, too, helps build resilience by adding more context into the impact of disruptions that an organization's supply chain might confront down the line

Power Bill is one of the platform that can help convert seemingly unrelated sources of data into coherent and interactive visualization that can be used to manage the supply chain. While tools that provide reports such as enterprise resources planning (ERP) and materials requirement planning (MRP) software can provide snapshots of activities in the supply chain, using them alone is no longer enough.

Tracking critical success factors or measuring key performance indicators (KPIs), for examples, can be done more meaningfully when complemented with the right Analytics tool or technology. An erp or mrp system. For instance, can remove data silos between different business functions, while an Analytics tool can consolidate dispersed data to uncover insights. this is especially true in global, digital supply chains where large datasets reside in diverse and fragmented sources and whose business value depends on their integration.

DATA SHEET :

VISUALIZATION IN POWER BI

STACKED AREA CHART:

- this chart shows in a count of customer full name by quantity and product category

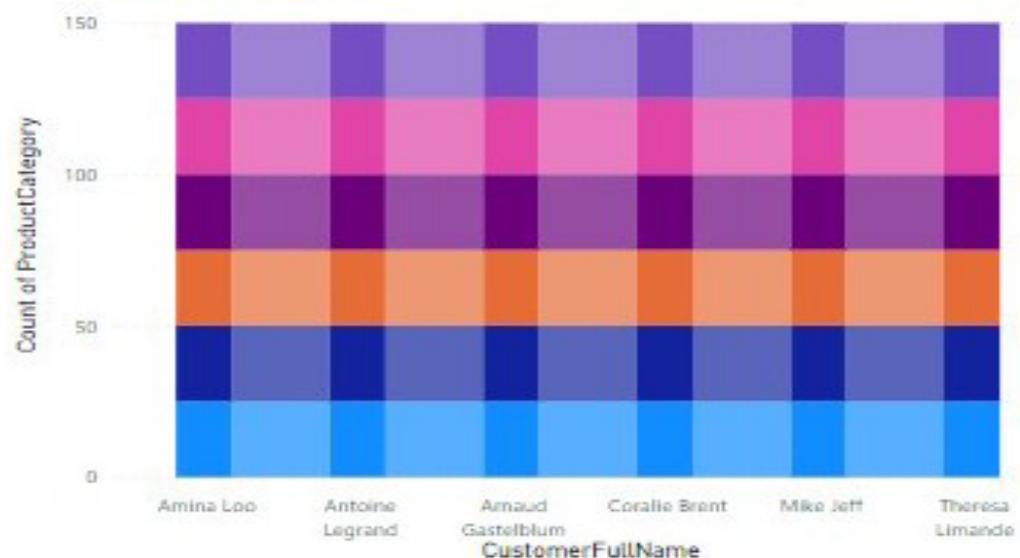


RIBBON CHART:

- This chart Shows in a count of product category by customer full name and ouantity

Count of ProductCategory by CustomerFullName and Quantity

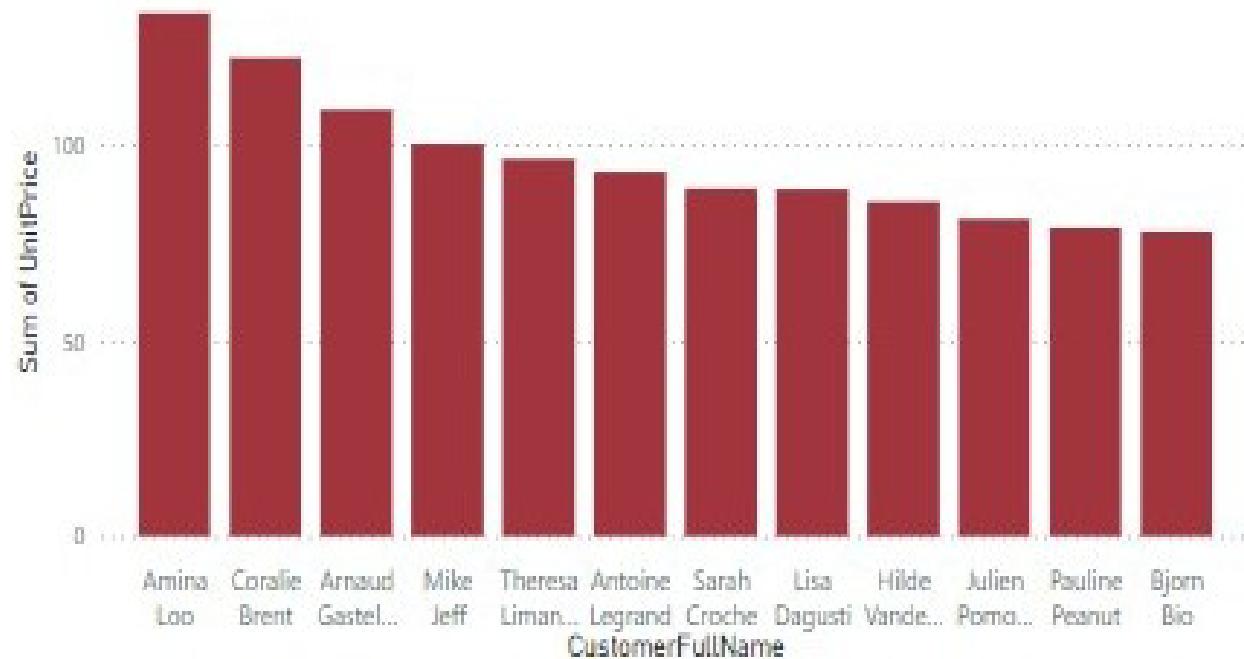
Quantity ● 1 ● 2 ● 3 ● 4 ● 5 ● 6



LINE AND CLUSTERED COLUMN CHART:

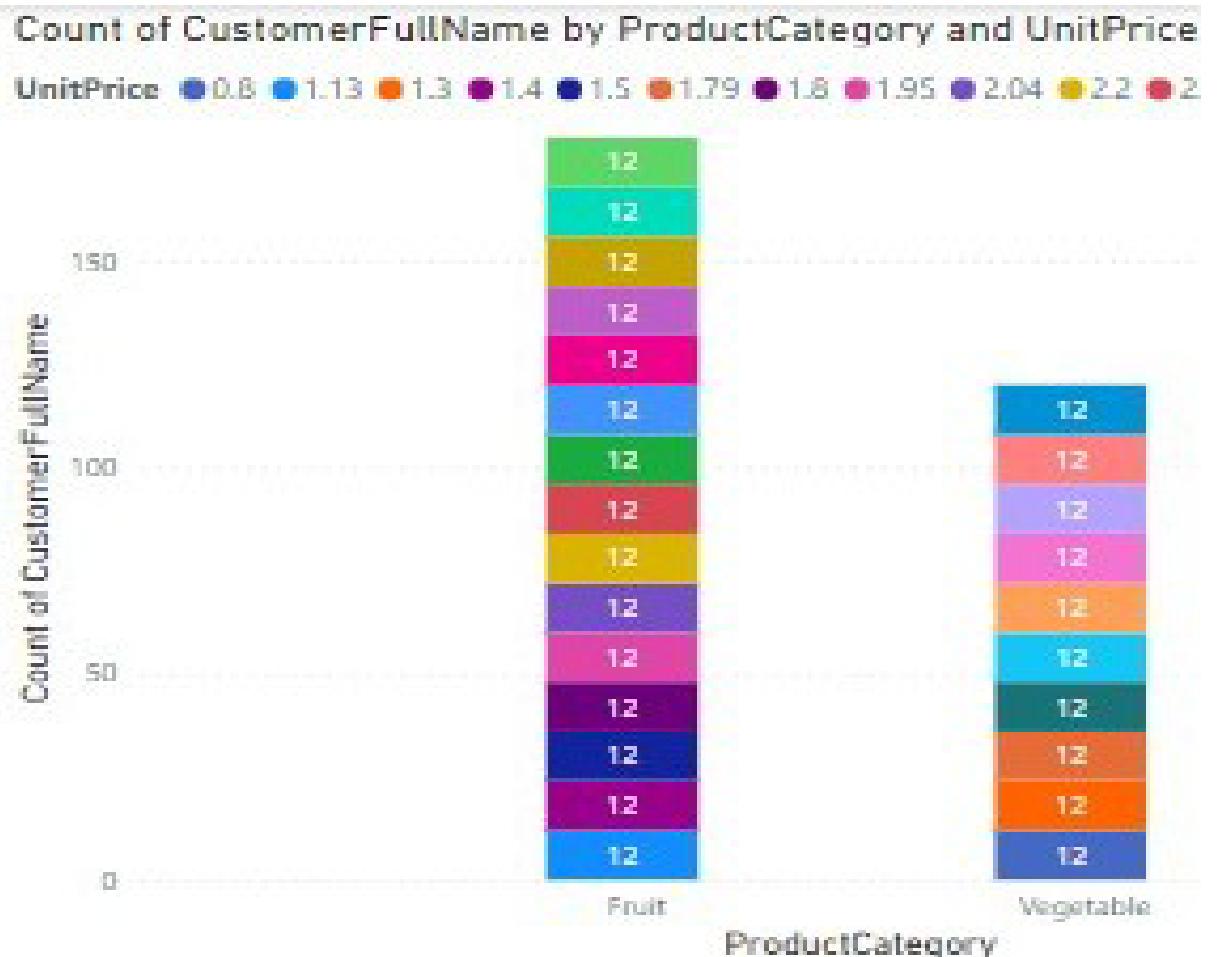
- This chart shows in a Sum of unitprice by customer full nam

Sum of UnitPrice by CustomerFullName



RIBBON CHART:

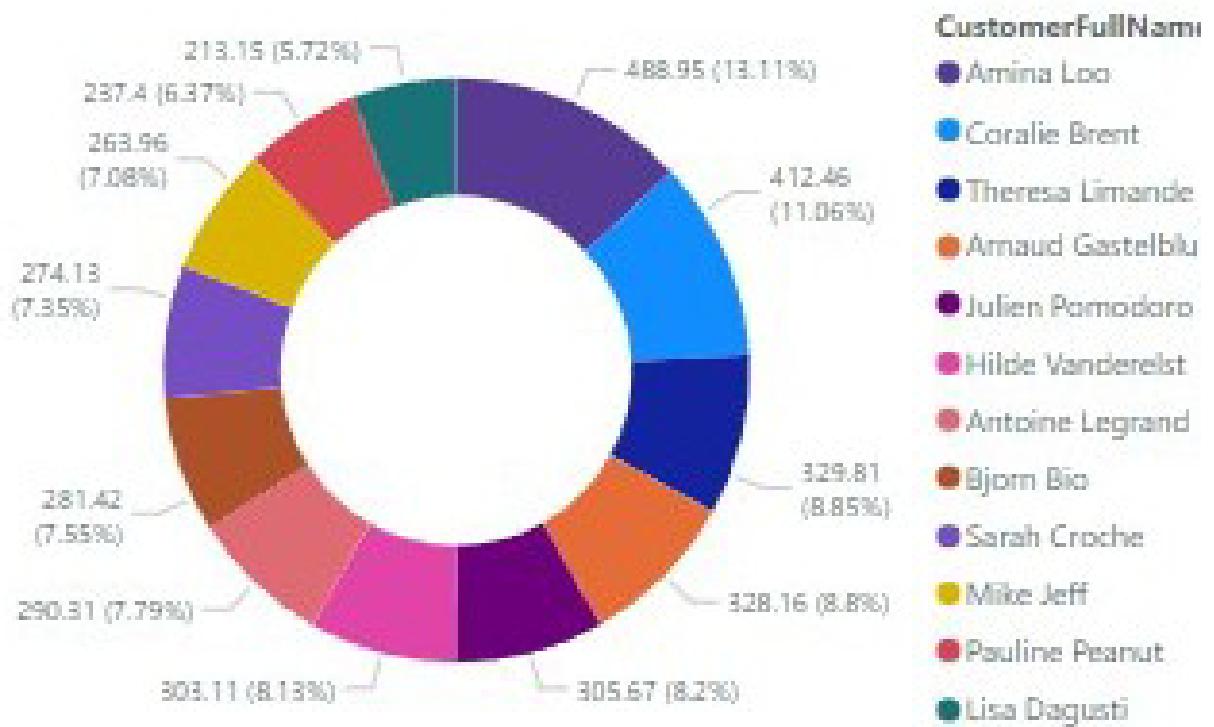
- This chart shows in a count of customer full name by product category and unit price



DONUT CHART:

- this chart shows in a Sum of total amount by customer full name

Sum of TotalAmount by CustomerFullName

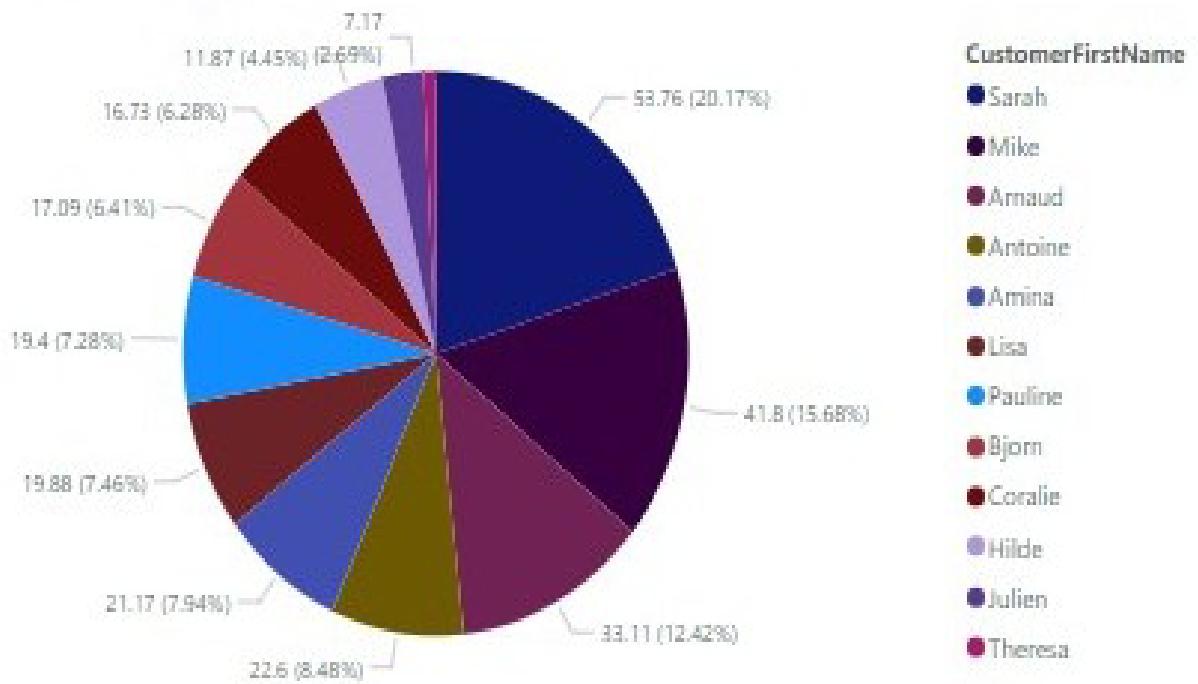


PIE CHART:

- This chart shows in a count by customer first name

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000000
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:Count by CustomerFirstName

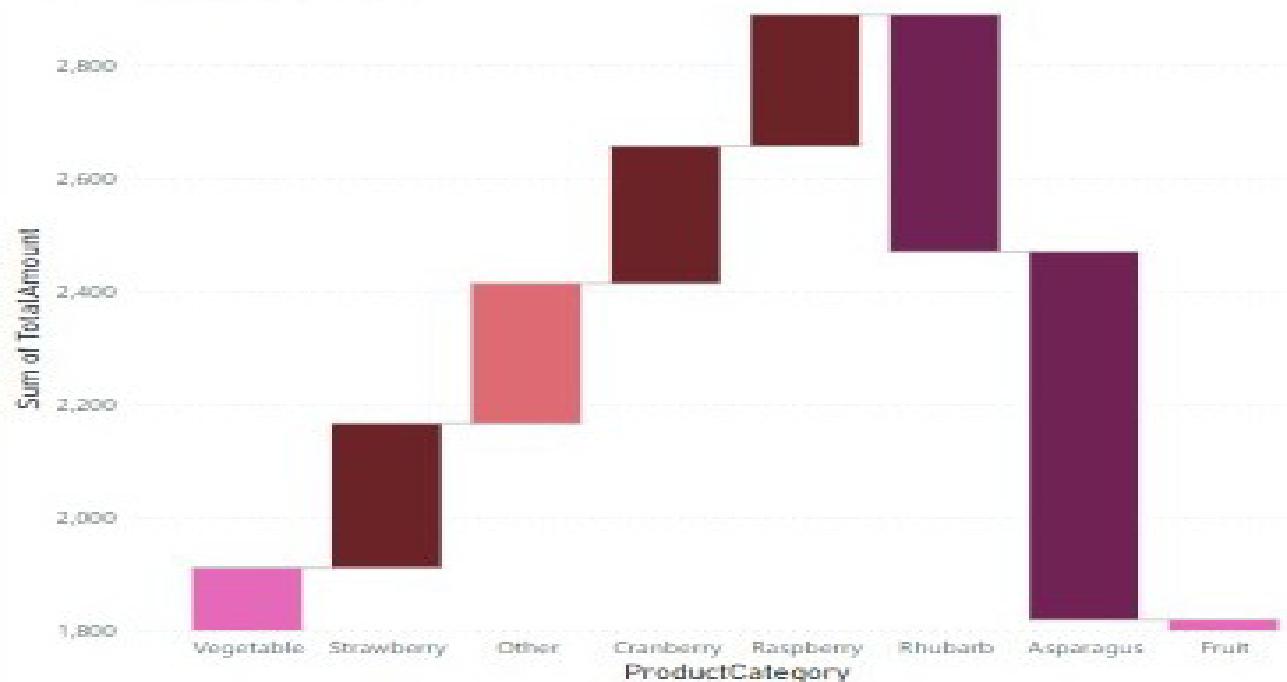


WATER FALL CHART :

- This chart shows in a Sum of total amount by product category and product name

Sum of TotalAmount by ProductCategory and ProductName

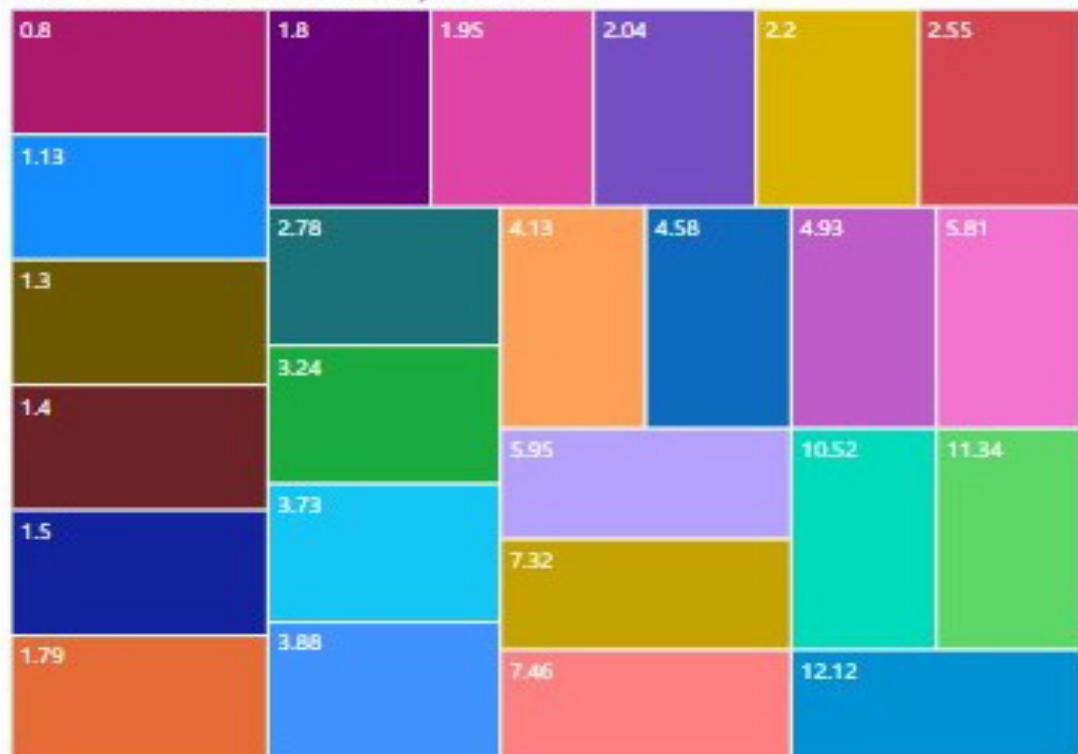
● Increase ● Decrease ● Total ● Other



TREEMAP:

- This chart shows in a count of customer full name by unit price

Count of CustomerFullName by UnitPrice



DASHBOARD AND REPORTS:



DASHBOARD AND REPORT:

Power bi is a powerful and user friendly tools for creating dynamic and insightful reports. In this section we will guide you through the step-by-step process of creating a report in power Bi.from Connecting data sources to designing the report and adding visualizations, we will cover all the necessary steps to help you create professional and informative report. So let's get started on your journey to mastering power Bi reporting

To create a data model in power Bi,follow these steps:

- **connect data sources:import data from different sources such as excel,CSVfiles,database,or online services**

- **create relationship**: establish relationship between tables to enable data analysis and create a robust data model
- **define measures**: use formulas to calculate important metrics or aggregations for effective reporting and analysis
- **create hierarchies**: organize data into hierarchies to facilitate drill-down analysis and enhance understanding
- **apply calculated column**: add calculated columns to derive new data based on existing columns and improve data insights

Want to create an effective report in power Bi? Look no further! In this section, we will discuss the best practises for creating a power bi report that will showcase your data to using appropriate visualizations and leveraging filters and interactivity, we will cover all the essential steps to create a top-notch report.so let's dive in and discover how to make the most out of this powerful reporting tool.

CONCLUSION:

If you're looking to use Microsoft Power Bill desktop,we generally find that customers start experimenting with the software on premises,connecting to data sources over the internet,while Private connectivity options exist for using AWS vpn and direct connect, many customers have concluded that running Microsoft Power Bill desktop in Amazon work spaces provides abetter performing experience

If you want to connect data source in AWS to Microsoft Power Bill service, you should to Microsoft Power Bill service you should feel comfortable knowing that this is an established erchitecultural pattern. You can install the Microsoft on-primises data gateway within an Amazon vpc and connect data sources such as Amazon Athena Amazon open search, and AWS lake formation seamlessly to the service