

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:

In this how-to guide ,we give you an overview course of Power BI and how it can be used to load,manipulata, modal, and report on data to assist with your reporting requirements.

The Scenario well's run through is how to report on internet sales for the fictitious Adventure Works bicycle company and adding some common time intelligence measures, for example, period to data and period aganist previous period reporting.

WHAT IS PURPOSE OF THE 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 QUERY EDITOR:

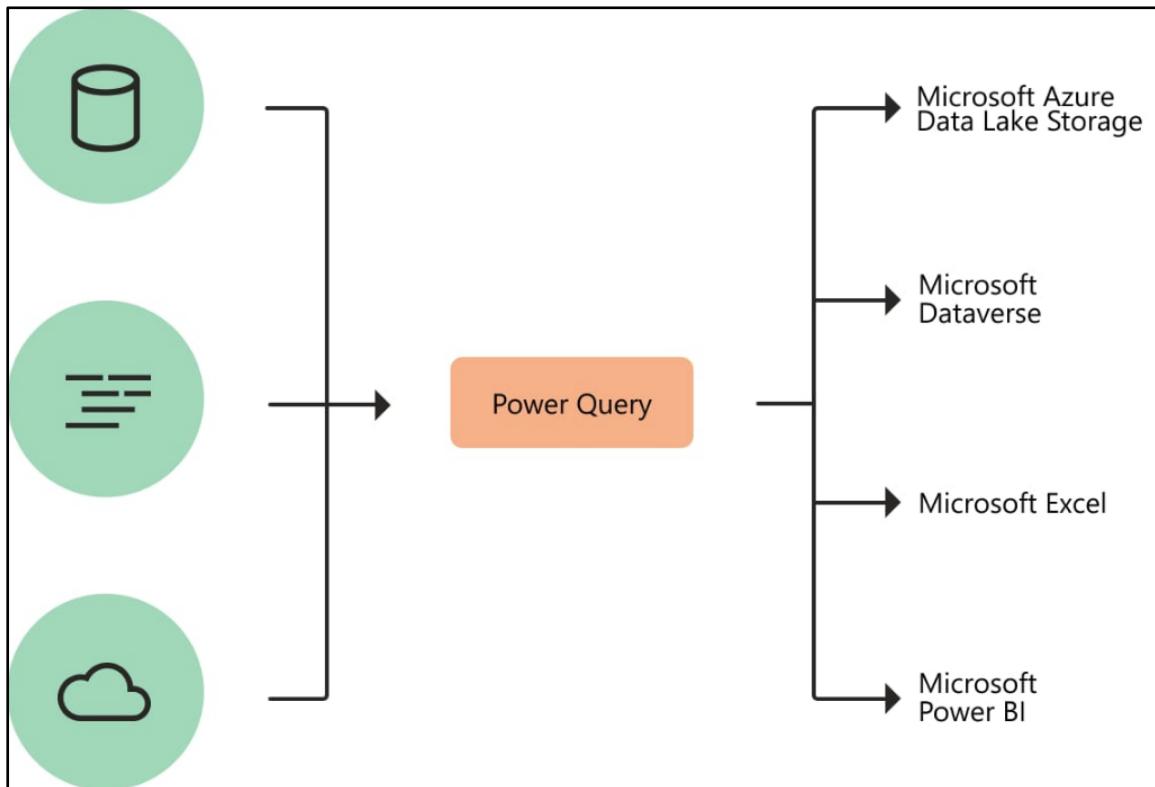
Power Query:

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



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article are examples to show you how you can use Power Query to transform raw data into important actionable business insights.



You can open the Power Query Editor by selecting Launch Query Editor from the Get Data command in the Get & Transform Data group, but it also opens when you connect to a data source, create a new query, or load a query.

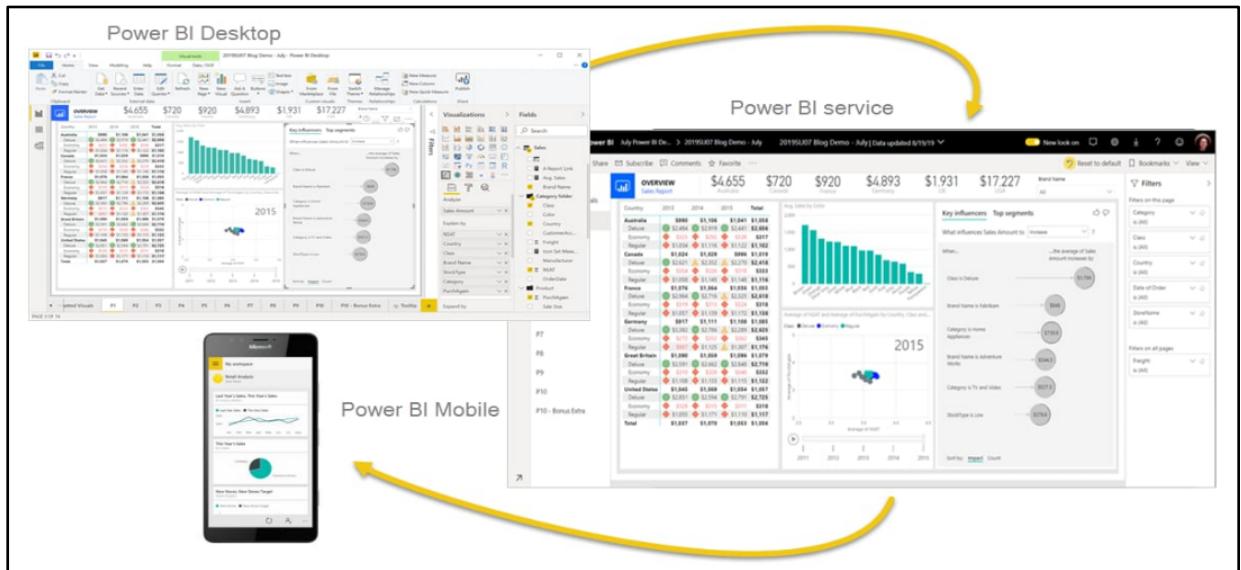
Software Requirements:



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- **Power BI Desktop:**

Power BI Desktop is a free application you install on your local computer that lets you connect to, transform, and visualize your data. With Power BI Desktop, you can connect to multiple different sources of data, and combine them (often called modeling) into a data model.



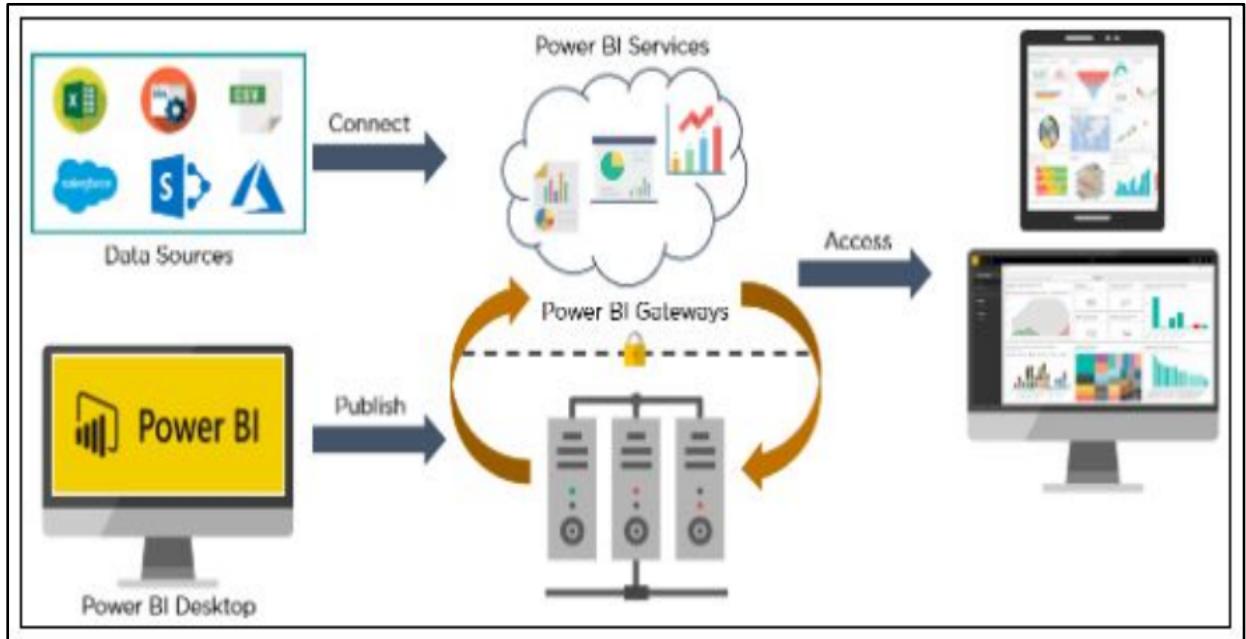
- **Power BI Service:**

Power BI is a business analytics service provided by Microsoft that lets you visualize your data and share insights. It converts data from different sources to build interactive dashboards and Business Intelligence



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reports.



- **Power BI Mobile:**

The Power BI mobile app for the Android brings Power BI to your pocket, with up-to-date, touch-enable mobile access to your business information. You can filter a report by your geographic location. You can scan QR codes with your Android phone and go straight to a Power BI dashboard or report.

USER INTERFACE

It allows users to quickly build visuals and reports, as well as view and interact with their data in a more meaningful way. The tool also provides users with



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access to powerful data visualization capabilities, such as Power BI custom visualizations and advanced analytics

- **The Ribbon**

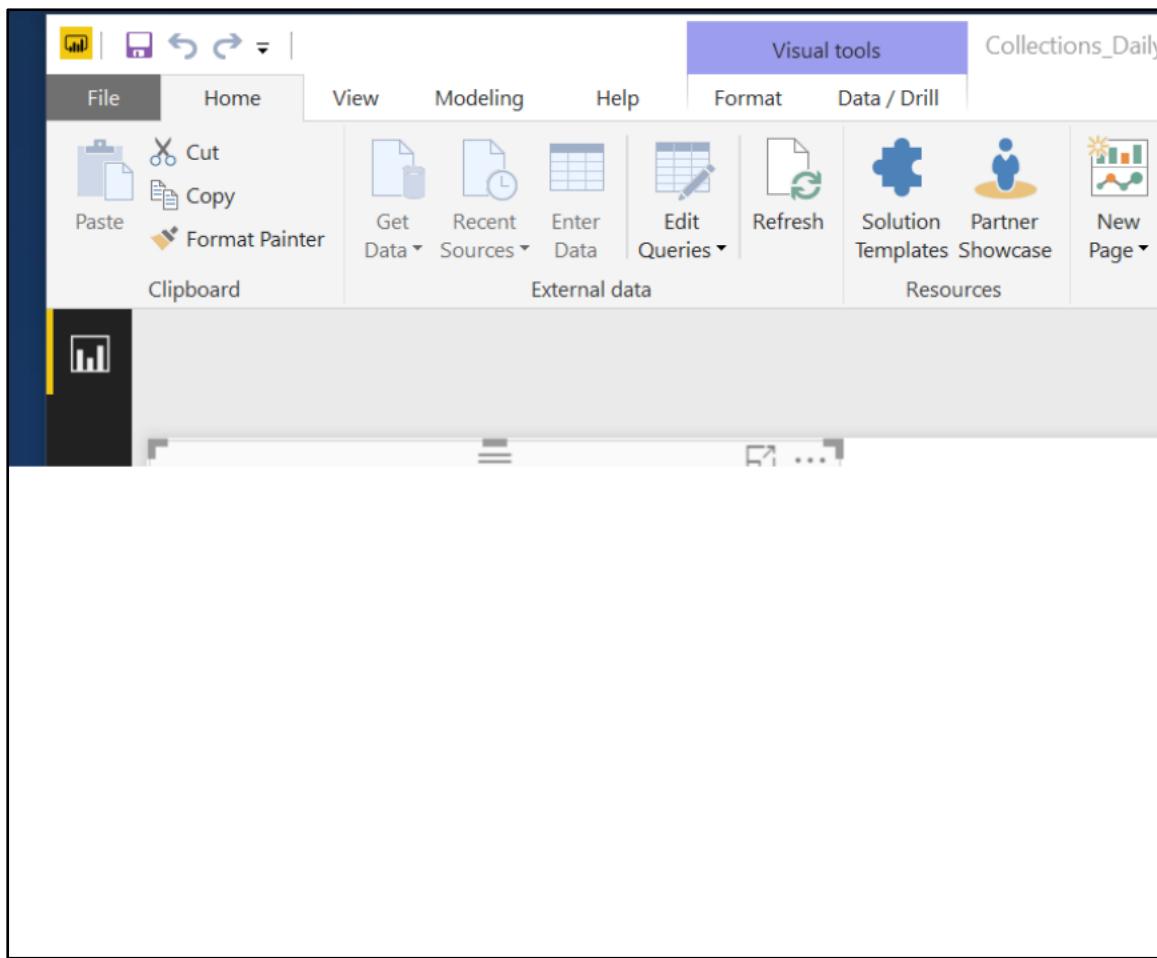
The images in the ribbon show what the theme changes will look like if applied to your report, such as the color combinations and fonts. Dynamic ribbon content based on your view - In the old ribbon for Power BI Desktop, icons or commands that weren't available were grayed out, creating a less-than-optimal experience.

- **Ribbon Tabs**

- The **HOME** tab contains the common query 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.



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- The **INSERT** tab lets us insert different **visuals, text boxes, buttons, shapes, and images**.



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- 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.

A screenshot of the Power BI Desktop interface. The ribbon at the top has the 'Modeling' tab selected. Below the ribbon is a toolbar with icons for 'Manage Relationships', 'New Measure', 'New Column' (which is highlighted with a green arrow), and 'New Table'. To the right of the toolbar are settings for 'Data type: Whole Number', 'Format: \$ - %', and 'Sort by Column'. The main area shows a table with three columns: 'Cast_Id', 'Cast_Name', and 'Prod_Id'. A yellow arrow points to the 'Columns' button at the top of the table's grid. The table contains the following data:

Cast_Id	Cast_Name	Prod_Id
101	Jack	1102
102	Jones	1105
111	Anna	1201
125	Jim	1207
135	James	1209
137	Andy	1290

- 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

A screenshot of the Power BI Desktop interface with the 'View' tab selected in the ribbon. The ribbon also includes 'File', 'Home', 'Insert', 'Modeling', 'Help', and 'External Tools'. The 'View' tab has the following options:

- Themes**: A section with six color-coded theme swatches, one of which is highlighted with a red box.
- Page view**, **Mobile layout**, **Page options**: Options for page orientation and layout.
- Filters**, **Bookmarks**, **Selection**, **Performance**, **Sync analyzer**, **Slicers**: Tools for report navigation and analysis.

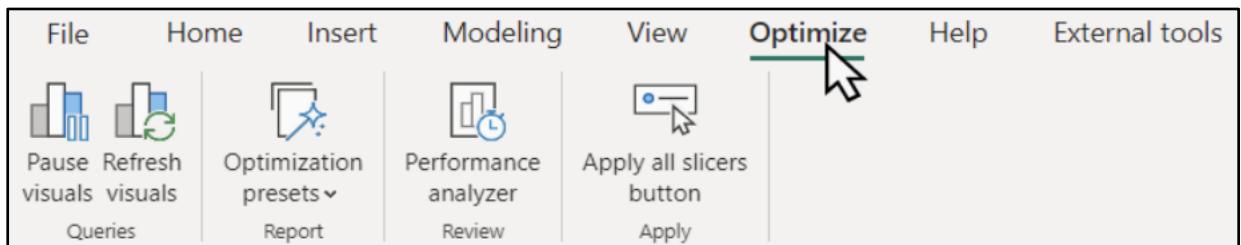
 On the right side of the interface, there are three expandable panes:

- Visualizations**: Shows a list of existing visualizations.
- Build visual**: A tool for creating new visualizations.
- Fields**: A list of available fields.



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- The **OPTIMIZE** ribbon in Power BI Desktop can improve report authoring performance by pausing data source queries when adding or changing visuals on the Report surface.

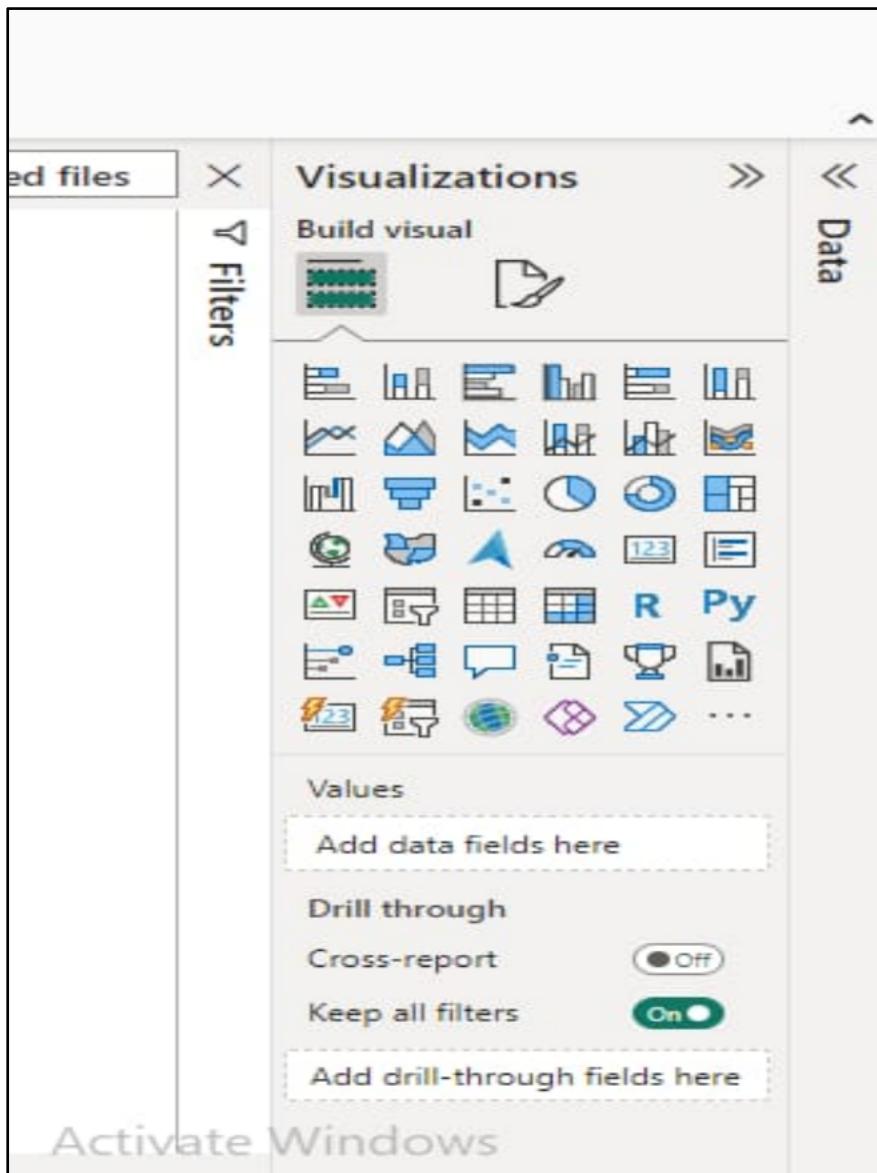


- The **HELP** tab has links to things like Microsoft forums and the Power BI blog which has news about new features.
- The **EXTERNAL TOOLS** tab is where 3rd-party tools live. There are only a few of these okayed by Microsoft, and if you haven't downloaded one, this tab doesn't show up.
- **PANES:**
- 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.



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- The **FILTERS** Pane is where we can create filters and control what data is making it from our data to the visuals on our Canvas.



ABOUT MY PROJECT:

Supply Chain Analysis of Inventories:

Supply chain inventory planning involves



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forecasting demand and deciding exactly how much inventory is needed and when to order it. It helps companies meet demand while reducing expenses.

DATA SHEET

SUPPLY CHAIN ANALYSIS OF INVENTORIES(Data sheet)IN EXCEL FORMAT:

	Sales	Product	Customer										***				
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	
1	PK_Customer	CustomerCode	CustomerFirstName	CustomerLastName	Country	CountryISOCode	City	Gender	Birthdate	CustomerFullName							
2	1N79H709	Arnaud	Gastelblum	Belgium	BE	Mouscron	M	09-Apr-1982		Arnaud Gastelblum							
3	2Z9ZR03	Pauline	Peanut	France	FR	Villefranche sur mer	F	23-Jun-1993		Pauline Peanut							
4	3H59L252	Antoine	Legrand	Nederland	NL	Rotterdam	M	08-Jun-1984		Antoine Legrand							
5	4C00R794	Corinne	Brent	Nederland	NL	Maastricht	F	20-Apr-1962		Corinne Brent							
6	5B42W912	Julien	Pomodoro	France	FR	Roubaix	M	27-Nov-1985		Julien Pomodoro							
7	6I85S191	Sarah	Croche	France	FR	Paris	F	11-May-1959		Sarah Croche							
8	7L75A698	Mike	Jeff	Nederland	NL	Amsterdam	M	12-Dec-1976		Mike Jeff							
9	8K49A336	Amina	Loo	Belgium	BE	Brussels	F	23-Oct-1940		Amina Loo							
10	9Q44B467	Bjorn	Bio	Belgium	BE	Charleroi	M	23-Aug-1945		Bjorn Bio							
11	10Z91K849	Lisa	Dagusti	Belgium	BE	Antwerp	F	28-Nov-1957		Lisa Dagusti							
12	11K74L961	Theresa	Limande	France	FR	Strasbourg	F	12-Jun-1974		Theresa Limande							
13	12Y17E452	Hilde	Vanderelist	Nederland	NL	Amsterdam	F	19-Oct-1969		Hilde Vanderelist							
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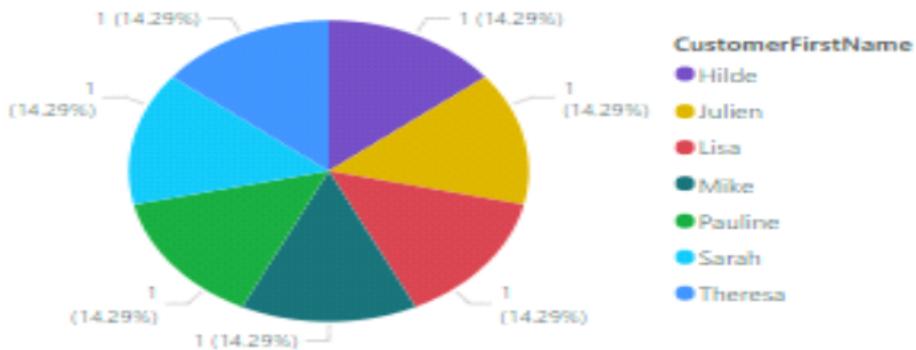
VISUALIZATION IN POWER BI:

PIE CHART:



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Count of PK_Customer by CustomerFirstName

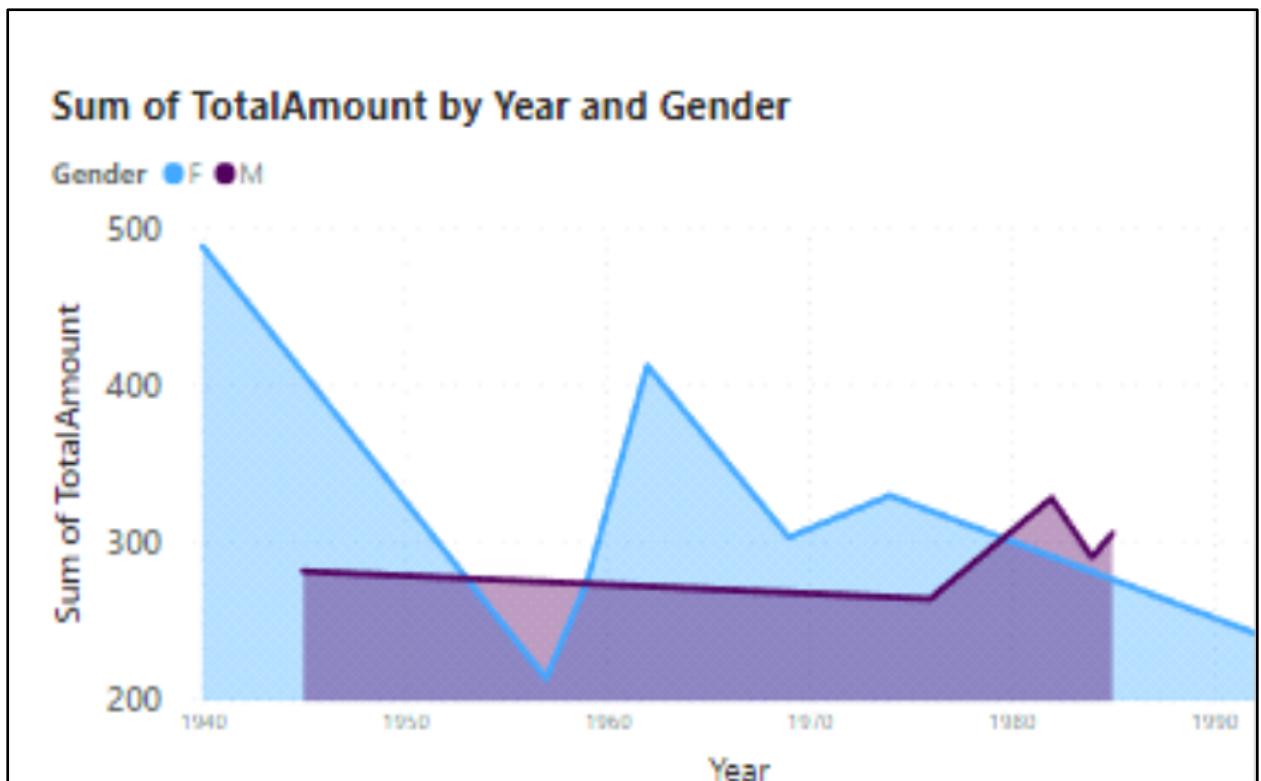


- This pie chart show The Count of Pk_Customer First Name.

STACKED AREA CHART:



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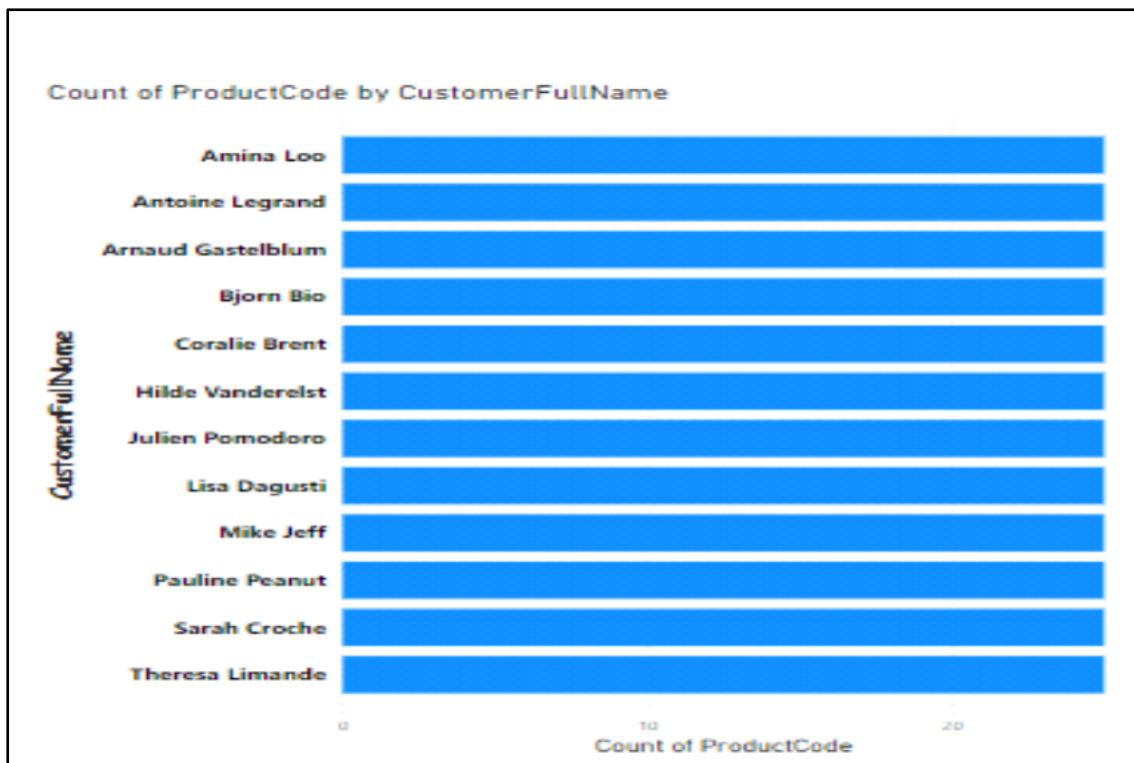


- This chart shows a Sum of Total Amount by Year and Gender.

CLUSTERED BAR CHAT:



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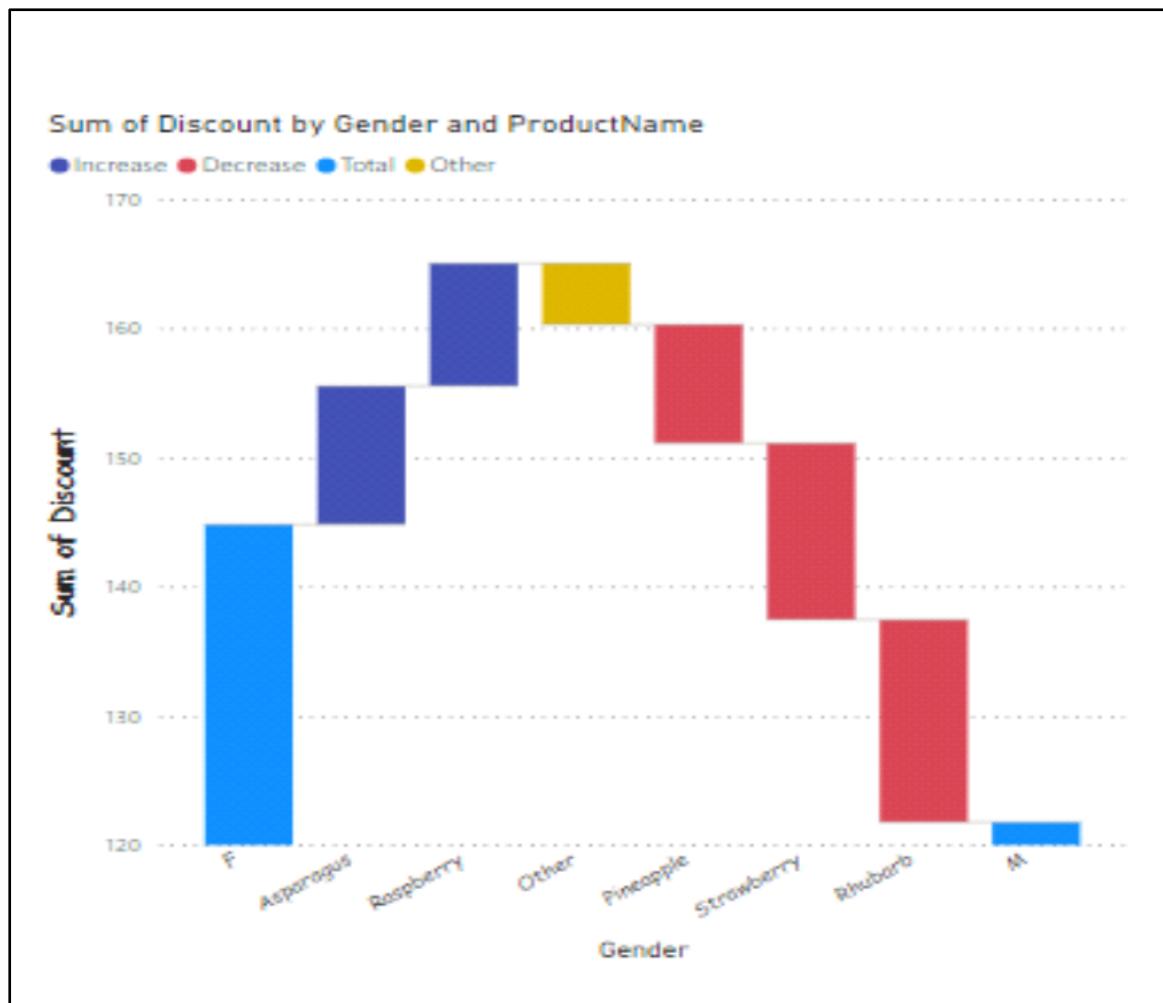


- This chart shows a count of Product Code by Customer Fullname.

WATERFALL CHART:



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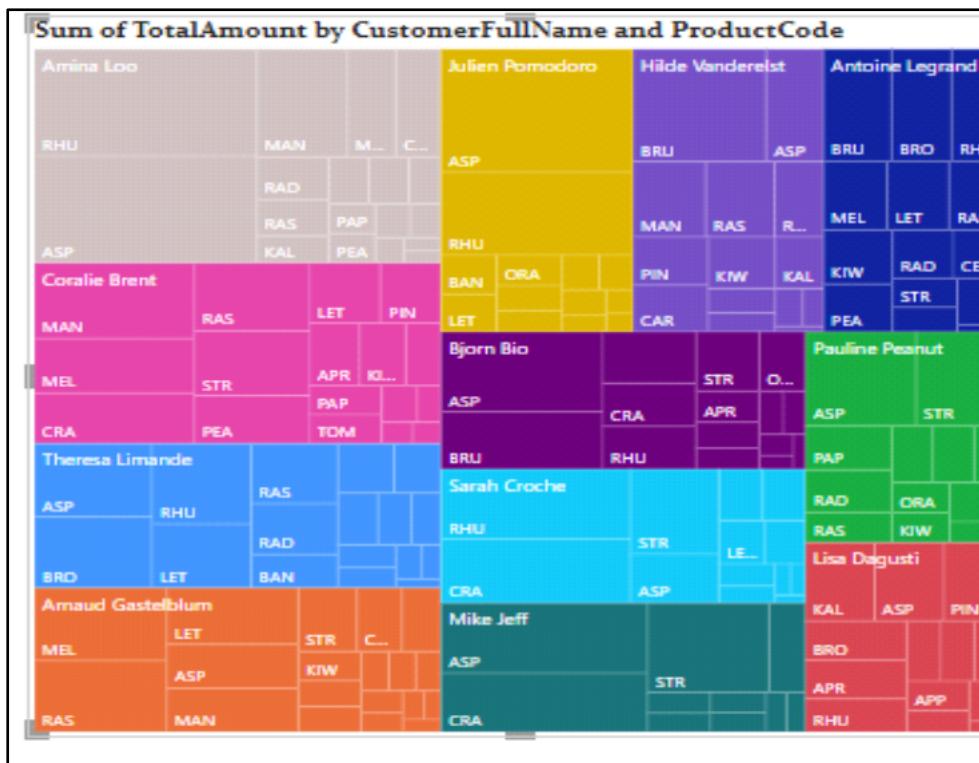


- This Chart Shows Sum of Discount by Gender and Product Name.

TREE MAP CHART:

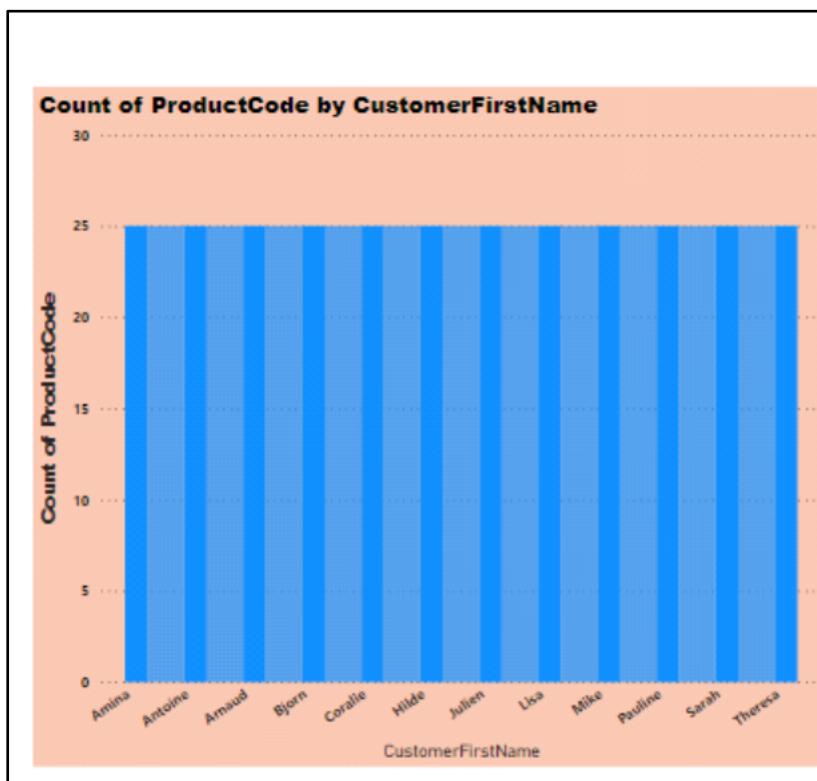


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- This Chart Shows a Sum of Total Amount by Customer Full Name and Product Code.

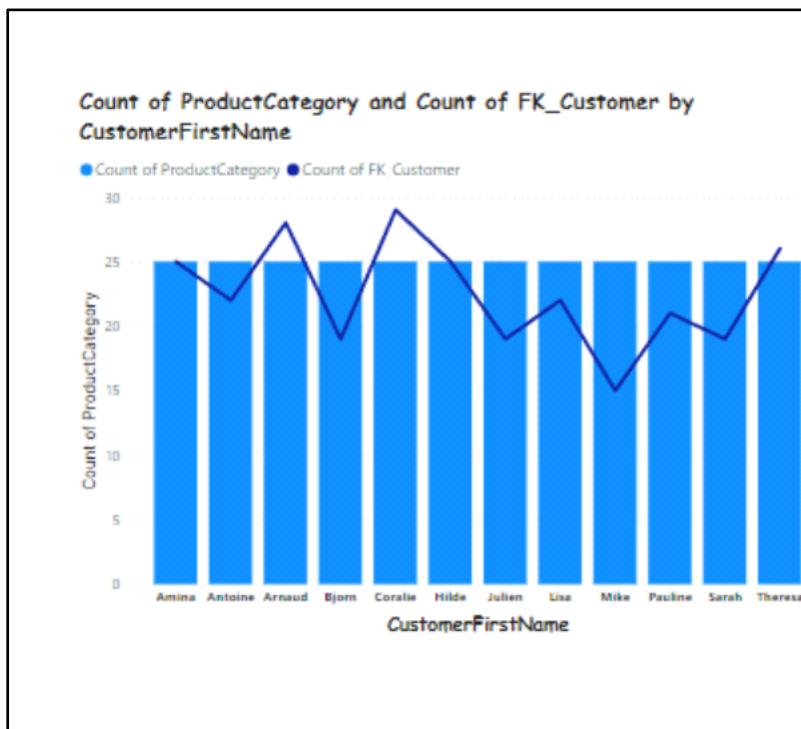
COLUMN CHART:



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- This chart shows a Count of product Code FirstName.

COLUMN CHART:



- This Chart shows a Count of Product category and count of FK_Customer by Customer First Name.

DASHBOARD AND REPORT:



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REPORTS:

Power BI is a highly sought-after business intelligence tool that enables users to design visually appealing and customizable dashboards without the need for programming skills. These can be easily shared with stakeholders.

Developed by Microsoft, Power BI is particularly suitable for those who are familiar with Excel, as it has a



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similar interface and integrates deeply with it. Additionally, Power BI offers advanced features that enable users to transform and clean data, collaborate on a large scale, and control access rights in detail.

Despite these fantastic features, the most significant value of Power BI lies in its ability to provide a quick overview of all the essential metrics that organizations and teams need to keep track of through. In this article, we will showcase real-world examples of Power BI reports covering various topics to demonstrate its power.

The Different Types of Power BI Reports:

1. Sales analysis reports:

- With Power BI's sales analysis reports, the sales teams work is made easier. In Power BI, there are a number of pre-existing examples of this report. You may save it for later use by downloading it. A variety of sales metrics may be analysed using Power BI's reporting tools, including:
 - Business trends over several iterations
 - The ratio of the company's revenue to the revenue of the whole industryribution
 - The competitor list



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- Regions where the majority of business activity occur
- Year-to-Date (YTD) variance in per cent of total sales

2. Financial analysis reports

- Power BI's financial analysis report makes it easier for a company's CFO to do financial planning. Following are some of the most important financial indicators that are highlighted in this Power BI report in an engaging and exciting way:
- Gross Profit
- Resources
- Total costs
- Profitability
- Liabilities
- Liabilities vs Assets
- Gross profit margin
- Revenue vs expense
- You may compute the following using these characteristics, which can help you avoid risks and expenditures.



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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 databases, and more.

Custom Visualization: Leverage Power BI's pre-designed visualizations to create interactive reports tailored to your specific needs. Additionally, explore third-party solutions like FluentPros 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 efficient choice for data modeling.



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