Tech Saksham
Case Study Report

Data Analytics with Power BI

Supply Chain Analysis of Inventories

Aundipatti

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INTRODUCTION:

POWER BI:

- Microsoft power BI is an interactive data visualization software product developed by microsoft focus on business intelligence. Microsoft Power Bi is the part of the microsoft

platform.

- Power BI is the collection of the software services, apps, and connectors that work together to turn various sources of data into static and Platform.

- Data may be input by reading directly from a database webpage, PDF or structured files such as spreadsheets, CSV, ZML, ISON, XLSL and sharepoint.

POWER BI DASHBOARD:

Power BI is Data visualization and Business intelligence tool which helps to convert data from diferent data sources ito interactive dashboards and BI reports.

POWER BI PROCESS:

Bring data together and increasing the efficiency of creating clear metrics, interactive and user-friendly.

1. Data Acquistion

2. Data Enchancement

3. Data Presentation

POWER QUERY EDITOR:

Power Query: This is a data connection

technology that enables you to discover, connect, combine, and refine data across a wide variety of sources.

SOFTWARE REQUIREMENTS:

- Power BI Destop: This is a window application that you can us to create rports and publish them to Power BI.

- Power BI Service: This is an online saas (Software as a Service) service that you use to publish reports, create new dashbords, and share insights.

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

- Power Query is a data transformation and data preparation engine.

- Power Query comes with a graphical interface for getting data from sources and a Power Query Editor for aplying transformations. Beccause the engine is available in many products and service, the destination where the data will be stored depends where Power Query ws used.
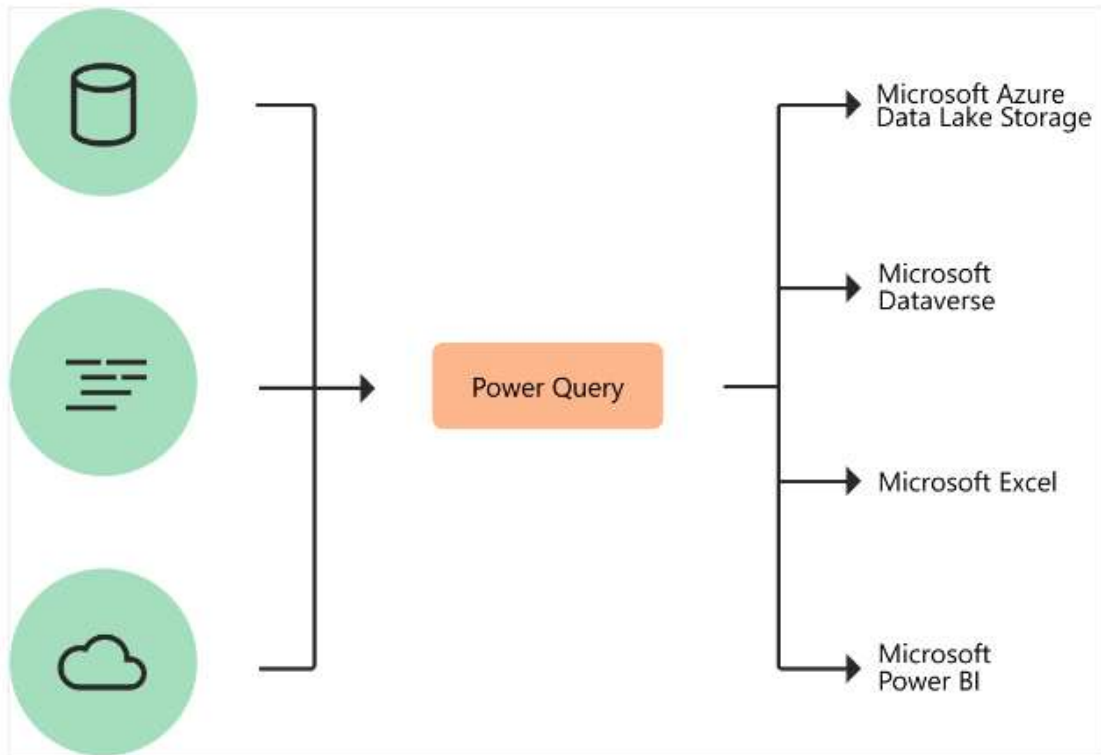
- Using Power Query, you can perform the extract, transform, and load(ETL) processing of data.

- The Power Query Editor is the Primary data preparation experiencess, where you can connect to a wide range of data source and apply hundrends of different data transformations from the UL. These data transformations capabilities are common across all data sourcse, whatever the underlying data source limitations.

- When you create a new transformation step by interacting with the components of the Power Query interfacse, Power Query automatically creates M code required to do the transformations so you don't need to write any

code.

Cureently two Power Query experiencses are available.

1. **POWER QUERY ONLINE** - Found in integrations sch as Power BI data flows, Microsoft Power Platform data flows, Azure Data Factory wrangling data flows, and many more that provides the experience throught an online web page.

2. **POWER QUERY FOR DESKTOP**- Found in intergration such as Power Query or Excel and Power BI Desktop.

NOTE:

Although two Power Query experiences of the exists, they both provides almost the same user experiences in ever scenario.

TRANSFORMATION:

The transformation engine in Power Query includes many prebuit transformation interface of the Power Query Editor. These transformations an 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 transformations are made possible

by choosing the transformations options in the menu, and then applying the options required for that transformation. The following illustrations shows a few of the transformations available in Power Query.
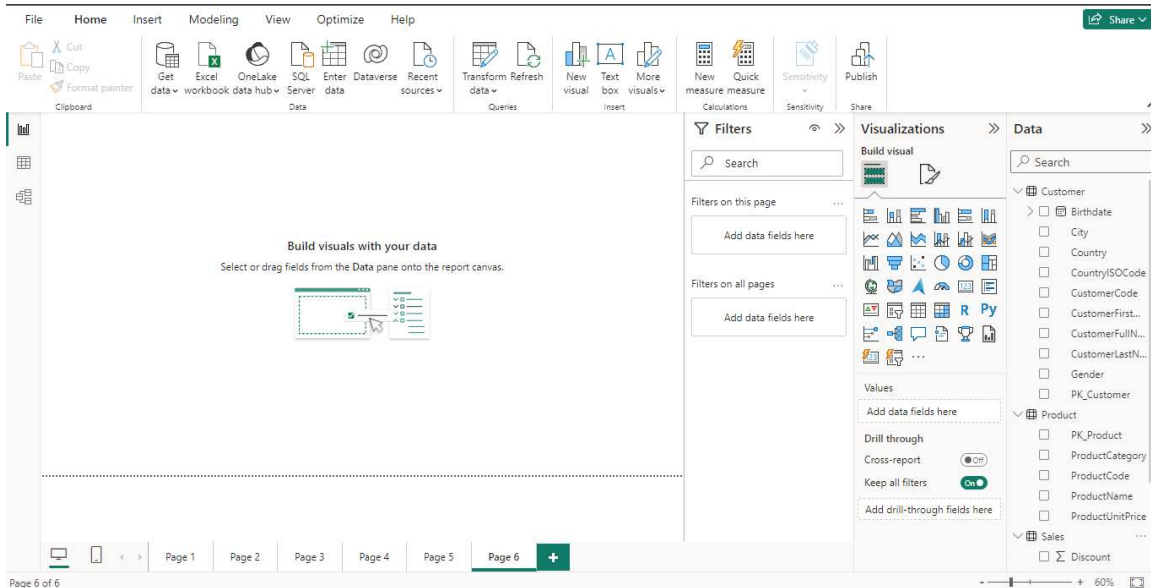
USER INTERFACE:

THE RIBBON:

At the top we havea the familiar Microsoft Ribbon, Just like the ribbons in Microsoft Excel, Words, Powerpoint, the Power BI ribbons is filled with tools split up into different tabs.
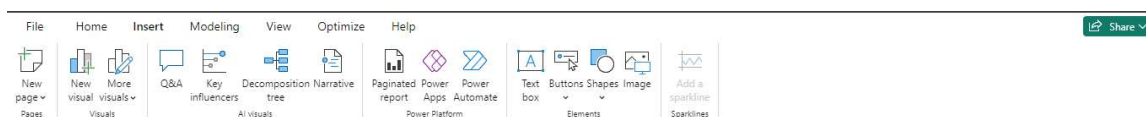
RIBBON TABS:

- The HOME tab has tools for adding data source, acessing Power Query Editor (used for cleaning and transformation data) via the

"Transform data" buttons, and adding in visuals and more.

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

- The MODELING tab lets us create DAX measures, or evaen now coloumns and tables, and also let us set up a security model if we need some users to only see some data.


- The VIEW tab lets us set 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 slowly.

- The HELP tab has links to things like Microsoft forums Power BI blog which has new about new features.
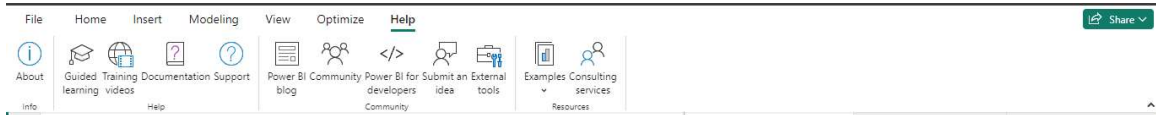
- The EXTERNAL TOOLS tab is where 3RD-Party tool live. There are only a few of these okay'd by Microsoft.

PANES:

One the righat of the Power BI interfacse are 3 Panes that appear by default.

- The FILTERS Pane is where we can create filters and control what data is making it form or data to the visual on our canvas.

- The VISUALIZATIONS Pane is where we can choose what visual we want to make, and it also has formating tools.

- The DATA Pane is where we see the tables and coloumns of data we've added.
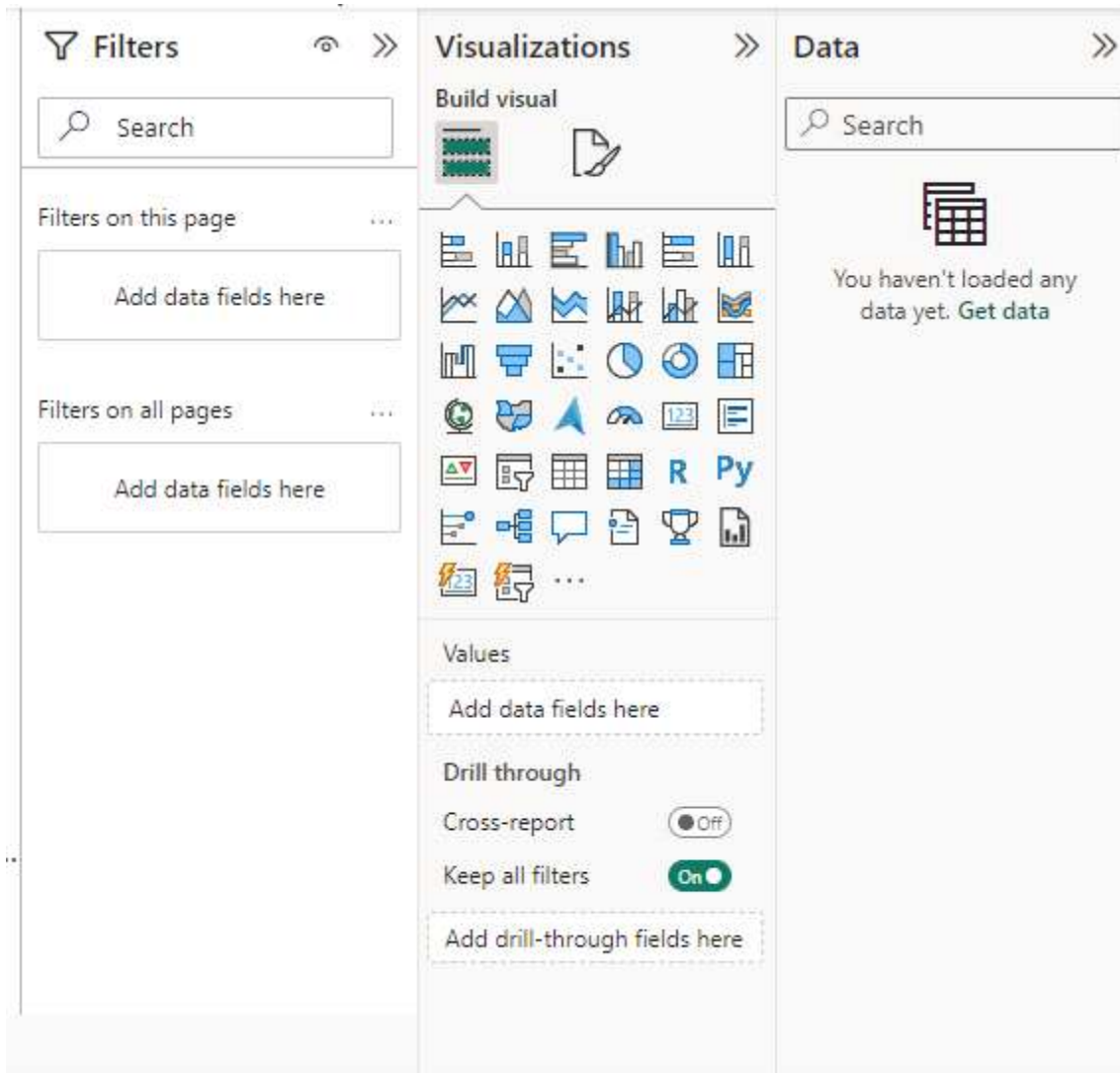
ABOUT MY PROJECT:

Supply Chain Management (SCM) is the handling of the entire production flows of goods and services that include all process for converting raw materials into final products. It involves the streamlineing of a business's supply side activities to mazimixe customer value and gain a compositive advantages in the market.

Supply Chain Management practicsse depends heavily on industrial engineering, system engineering, cooperation management, logistics, procurement information technology, marketing and strives for an integrated approach. It is the board range of control and execute a producted 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, Conversation, and Logistics managaement 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 intergrates supply and demand management with in and across compaines.

DATA SHEET:

SUPPLY CHAIN ANALYSIS OF INVENTORIES (DATA SHEETS OF SALES, PRODUCT AND CUSTOMER) IN EXCEL FORMAT

Customer:

	A	B	C	D	E	F	G	H	I	J
1	PK_Customer	CustomerCode	CustomerFirstName	CustomerLastName	Country	CountryISOCode	City	Gender	Birthdate	CustomerFullName
2	1	N79H709	Arnaud	Gastelblum	Belgium	BE	Mouscron	M	09-Apr-1982	Arnaud Gastelblum
3	2	Z92R903	Pauline	Peanut	France	FR	Villefranche sur mer	F	23-Jun-1993	Pauline Peanut
4	3	H59L252	Antoine	Legrand	Nederland	NL	Rotterdam	M	08-Jun-1984	Antoine Legrand
5	4	O30R794	Coralie	Brent	Nederland	NL	Maastricht	F	20-Apr-1962	Coralie Brent
6	5	B42W912	Julien	Pomodoro	France	FR	Roubaix	M	27-Nov-1985	Julien Pomodoro
7	6	I85S191	Sarah	Croche	France	FR	Paris	F	11-May-1959	Sarah Croche
8	7	L75A698	Mike	Jeff	Nederland	NL	Amsterdam	M	12-Dec-1976	Mike Jeff
9	8	K49A336	Amina	Loo	Belgium	BE	Brussels	F	23-Oct-1940	Amina Loo
10	9	Q44B467	Bjorn	Bio	Belgium	BE	Charleroi	M	23-Aug-1945	Bjorn Bio
11	10	Z91K849	Lisa	Dagusti	Belgium	BE	Antwerp	F	28-Nov-1957	Lisa Dagusti
12	11	K74L961	Theresa	Limande	France	FR	Strasbourg	F	12-Jun-1974	Theresa Limande
13	12	V17E452	Hilde	Vanderelst	Nederland	NL	Amsterdam	F	19-Oct-1969	Hilde Vanderelst
14										
15										
16										
17										
18										
19										
20										

Product:

	A	B	C	D	E
1	PK_Product	ProductCode	ProductName	ProductCategory	ProductUnitPrice
2	1	APP	Apple	Fruit	1.13
3	2	APR	Apricot	Fruit	2.2
4	3	BAN	Banana	Fruit	2.04
5	4	CRA	Cranberry	Fruit	11.34
6	5	KIW	Kiwifruit	Fruit	3.24
7	6	LEM	Lemon	Fruit	1.5
8	7	MAN	Mango	Fruit	4.58
9	8	ORA	Orange	Fruit	1.4
10	9	PIN	Pineapple	Fruit	2.55
11	10	STR	Strawberry	Fruit	10.52
12	11	PAP	Papaya	Fruit	1.95
13	12	MEL	Melon	Fruit	4.93
14	13	RAS	Raspberry	Fruit	7.32
15	14	TOM	Tomato	Fruit	1.8
16	15	PEA	Peach	Fruit	3.88
17	16	ASP	Asparagus	Vegetable	12.12
18	17	BRO	Broccoli	Vegetable	3.73
19	18	BRU	Brussels sprout	Vegetable	5.81
20	19	CEL	Celery	Vegetable	1.3
21	20	LET	Lettuce	Vegetable	5.95
22	21	ONI	Onion	Vegetable	0.8
23	22	RHU	Rhubarb	Vegetable	7.46
24	23	RAD	Radish	Vegetable	4.13
25	24	CAR	Carrot	Vegetable	1.79
26	25	KAL	Kale	Vegetable	2.78

Sales | Product | Customer

Sales:

	A	B	C	D	E	F
1	FK_Customer	FK_Product	Quantity	UnitPrice	Discount	TotalAmount
2	6	6	2	1.5	0.6	2.4
3	4	24	4	1.79	2.38	4.78
4	1	6	1	1.5	0	1.5
5	1	7	1	4.58	0	4.58
6	5	8	4	1.4	0	5.6
7	7	11	5	1.95	2.43	7.32
8	9	17	2	3.73	0	7.46
9	11	23	6	4.13	0	24.78
10	2	8	1	1.4	0	1.4
11	12	18	3	5.81	0	17.43
12	1	6	3	1.5	0	4.5
13	8	7	6	4.58	0	27.48
14	9	14	3	1.8	0	5.4
15	4	7	6	4.58	5.49	21.99
16	1	12	4	4.93	0	19.72
17	5	21	5	0.8	0	4
18	9	24	6	1.79	0	10.74
19	9	3	2	2.04	0	4.08
20	5	14	2	1.8	0	3.6
21	2	14	1	1.8	0	1.8
22	11	11	6	1.95	0	11.7
23	5	22	5	7.46	0	37.3
24	9	18	4	5.81	0	23.24
25	4	8	4	1.4	1.12	4.48
26	7	13	2	7.32	0	14.64

Sales | Product | Customer

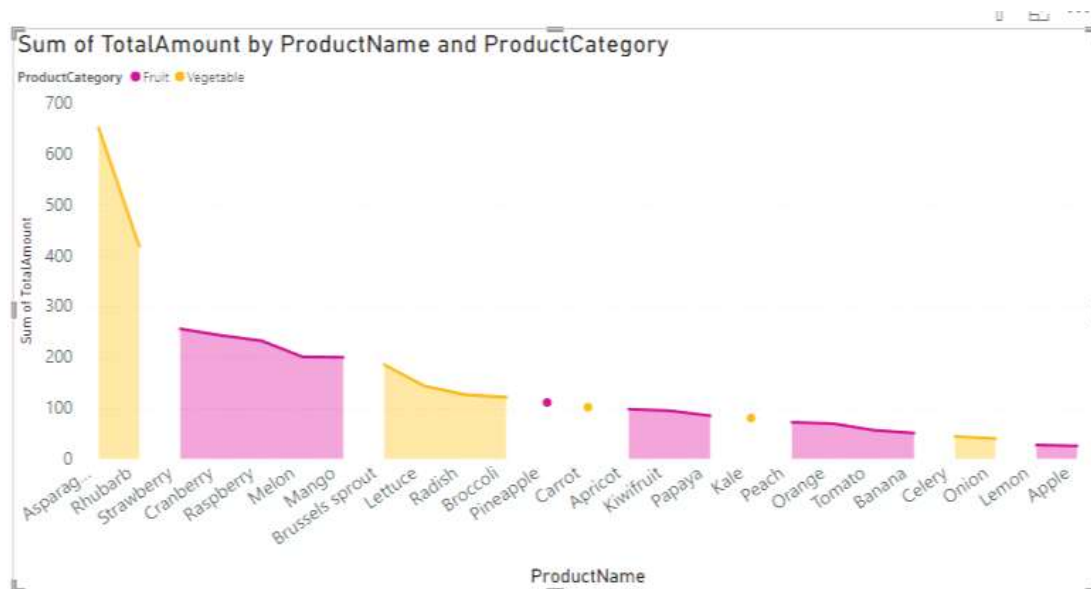## VISUALISATION:

PIE CHART AND TREE CHART: It represent the count of country by city.
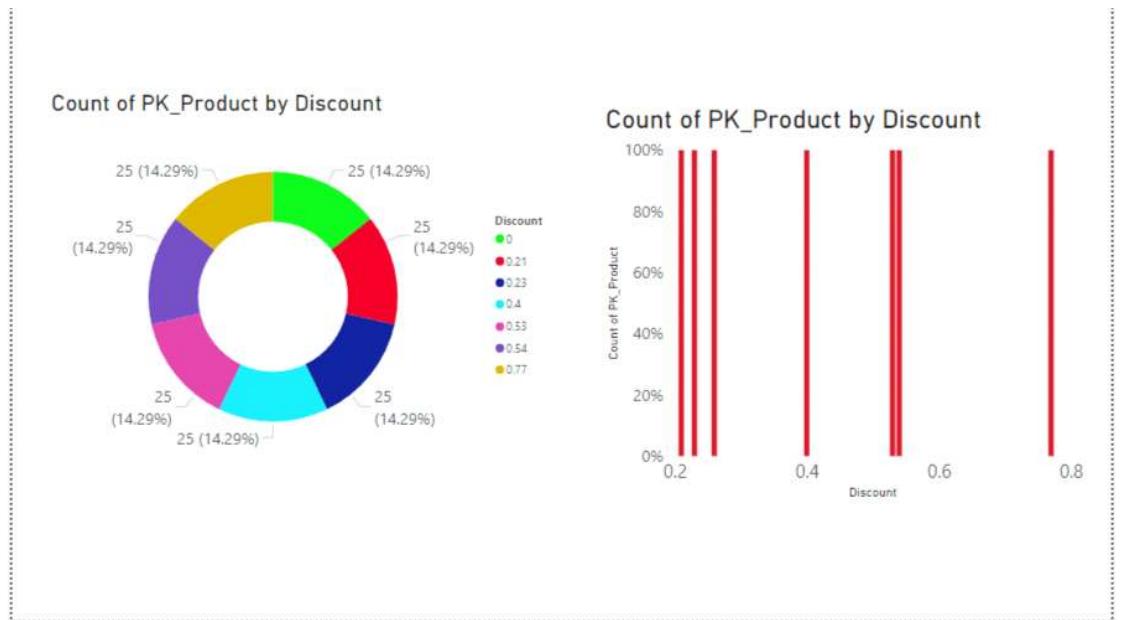
Count of Country by City

Count of Country by City
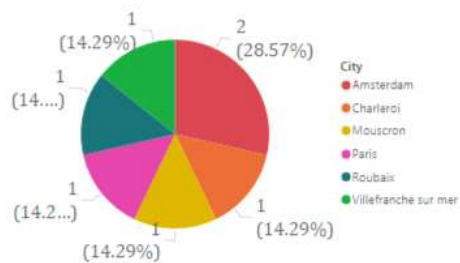
STACKED AREA CHART: It shows the Sum of Total Amount by Product Name and Product Category.

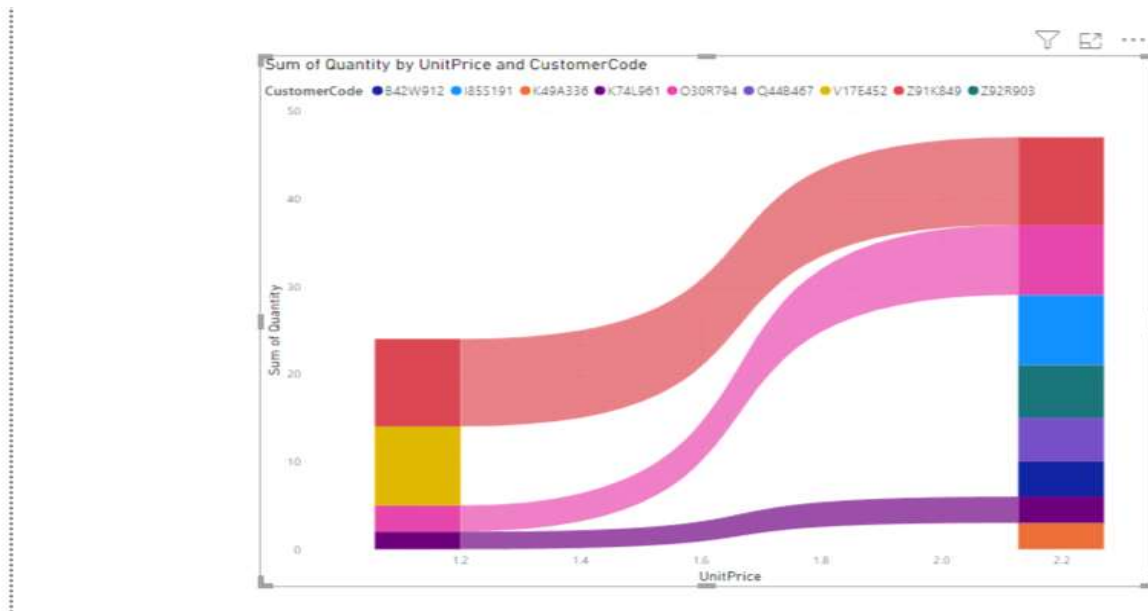Sum of TotalAmount by ProductName and ProductCategory

DONUT CHART AND STACKED COLOUMN CHART: They both represent the count of PK---
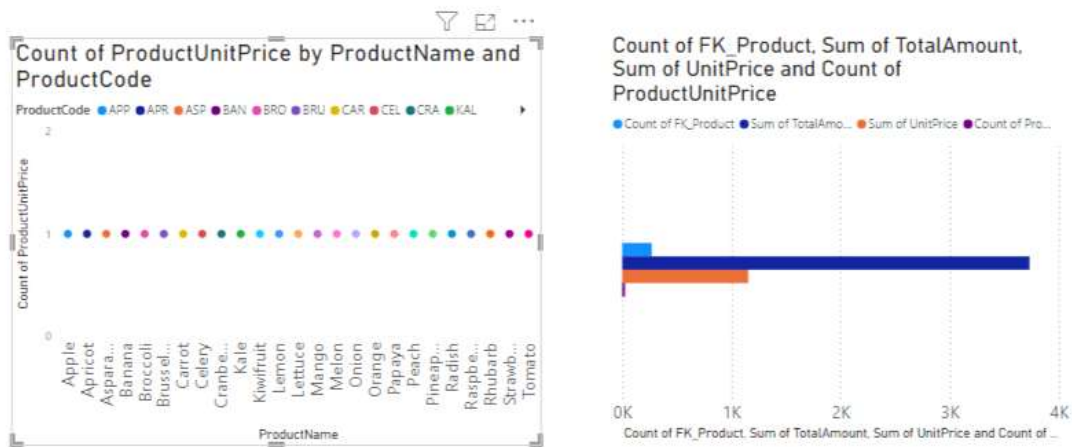
Product by Discount.

BAR CHART: This shows the count of PK-Customer by Product Name and FK-Customer
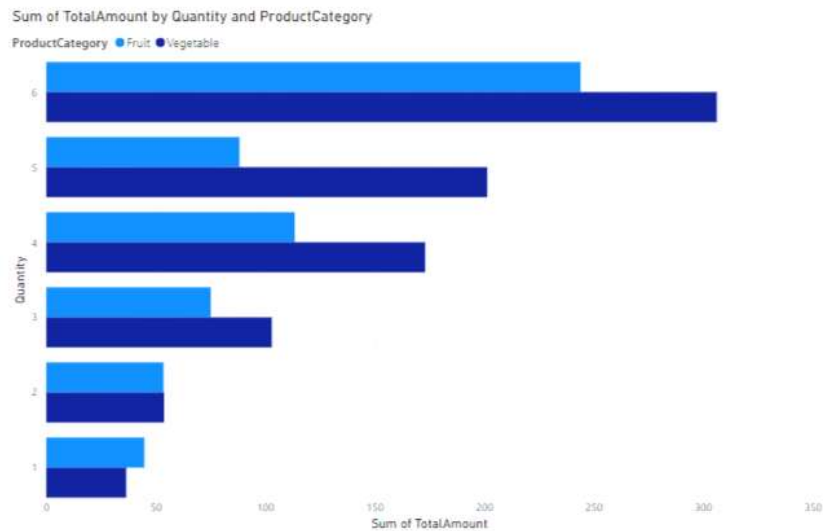

RIBBON CHART:

Ribbon chart shows the sum of quantity by unit

price and customer code.

- Clustered Bar Chart that shows the Count of FK-Products, Sum of Unit Price and sum of Total Amount and Count of Product Unit Price.

WATER FALLS CHART: Its represents the count of product code by Customer code and Product Unit Price.

Sum of TotalAmount by Quantity and ProductCategory

- Clustered Bar Chart that shows the Count of FK-Products, Sum of Unit Price and sum of Total Amount and Count of Product Unit Price.

Count of ProductUnitPrice by CustomerFirstName and ProductCode
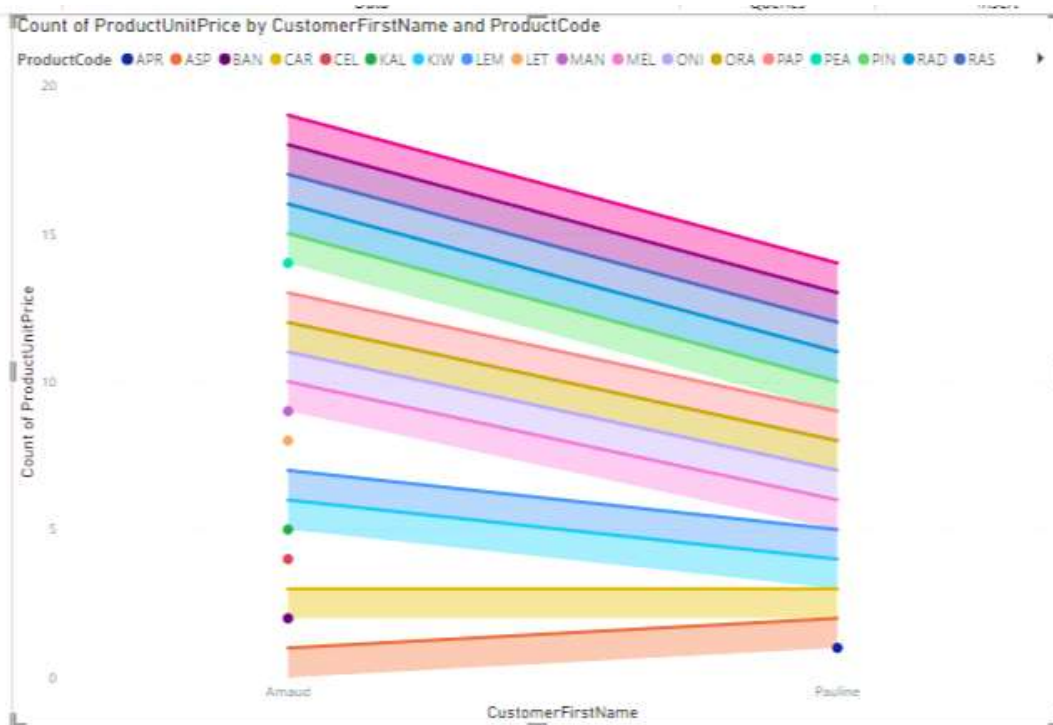
STACKED AREA CHART:
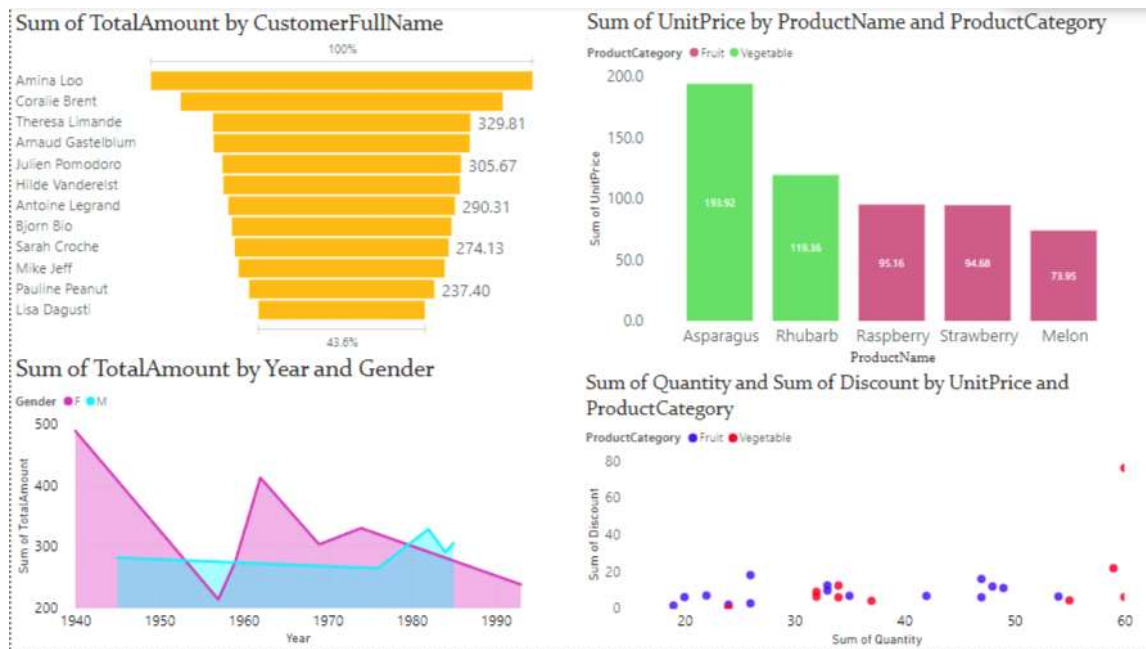
Stacked area chart shows the count of Product Unit price by customer first name and product code.

DASHBOARD AND REPORT:

ANALYSIS   SUPPLY   CHAIN

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 holistic view of the project, making it easier to identify

trends, patterns, and anormalities, Power BI's advanced visualizations enable the creation of intuitive dashboards, making it effortless to track project progress at a glance. Furthermost, Power BI's interactive features allow users to explore and drill into data, gaining deeper insight into the project's performance.

Another Benefits of using Power BI for project tracking 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 data. The eliminates the need for manual data updates and reduce the risk of using outdated information for desicion--making.

In addition, power BI offer a wide range of collabration features that enhance team collabration and communication. Project teams can easily share dashbords 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 into real of business intelligence. It's robust features, easy of use, and ability to transform raw data for organizations worldwide. As you wrap up you 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 analysis, SQL database and more.

- CUSTOM VISUALIZATION: Leverage Power BI's pre-designed visualizations to create interactive reports tailored to your specific needs. Additionally, explore third-part solutions like FluenPro's reporat packs for enchanced 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.

- LINK:

- https://github.com/abinayac1s23201/M.-Abinaya-power-BI-/upload