# Tech Saksham

Case Study Report

## Data Analytics with Power BI

# "Supply Chain of Analysis of Inventories"

### “Goverment Arts and science college, Aundippatti"

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INTRODUCTION:

POWER BI:

- Microsoft power BI is an interactive data visualization soft product developed by microsoft with a primary focus on business intelligence.

- Microsofxt power BI is the part of the Microsoft Power Platform.

- Power BI is the collection of the of the software services, app, andconnectors that work together to turn various source of data into static and interacting data visulizations.

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

POWER BI DASHBORD:

POWER BI is Data visualizations and Business intelligence tool which help to convert data from different data sources into interactive dashboards and BI reports.

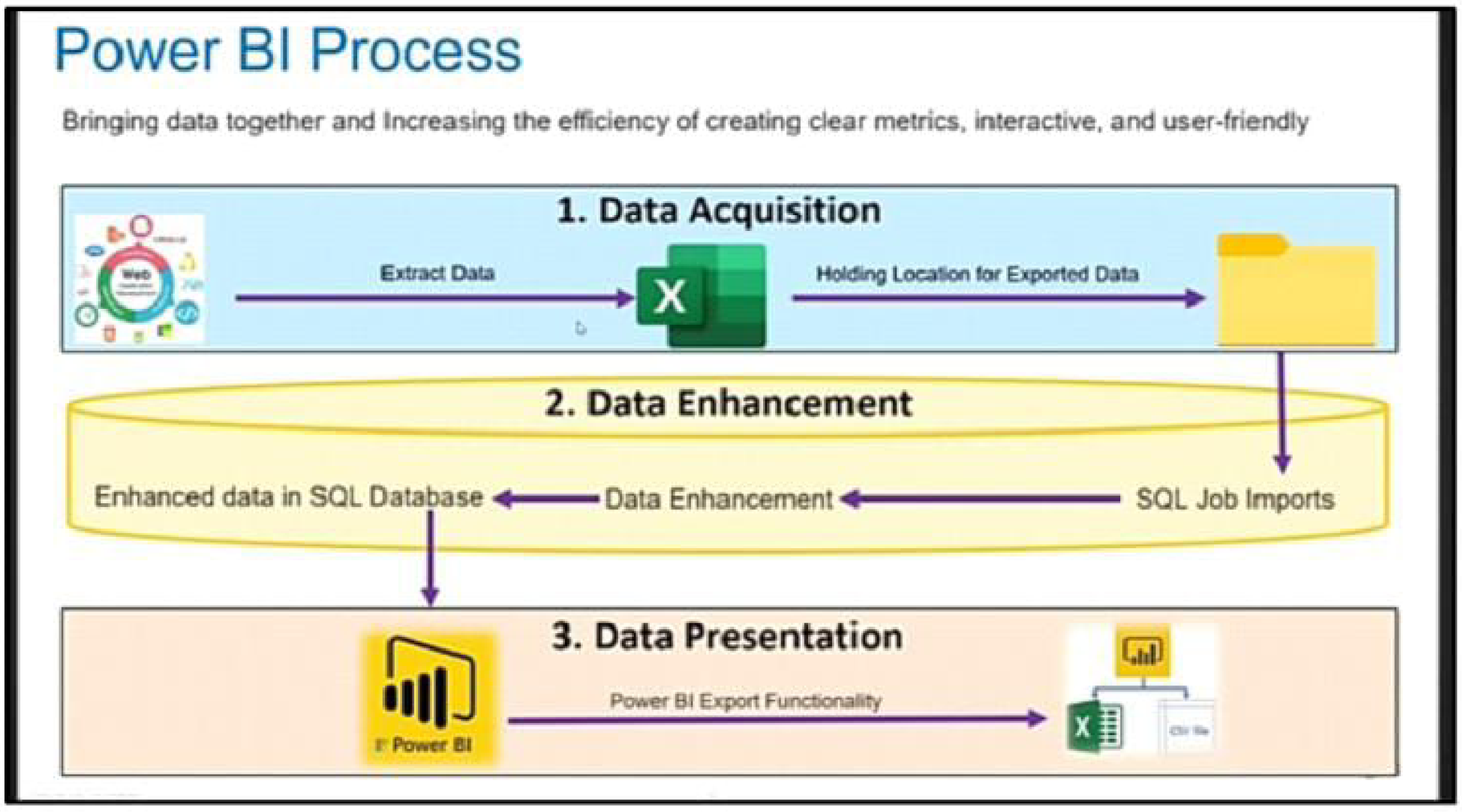
POWER BI PROCESS:

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

1.Data Acquistion

2.Data Enchancement

3.Data presentation



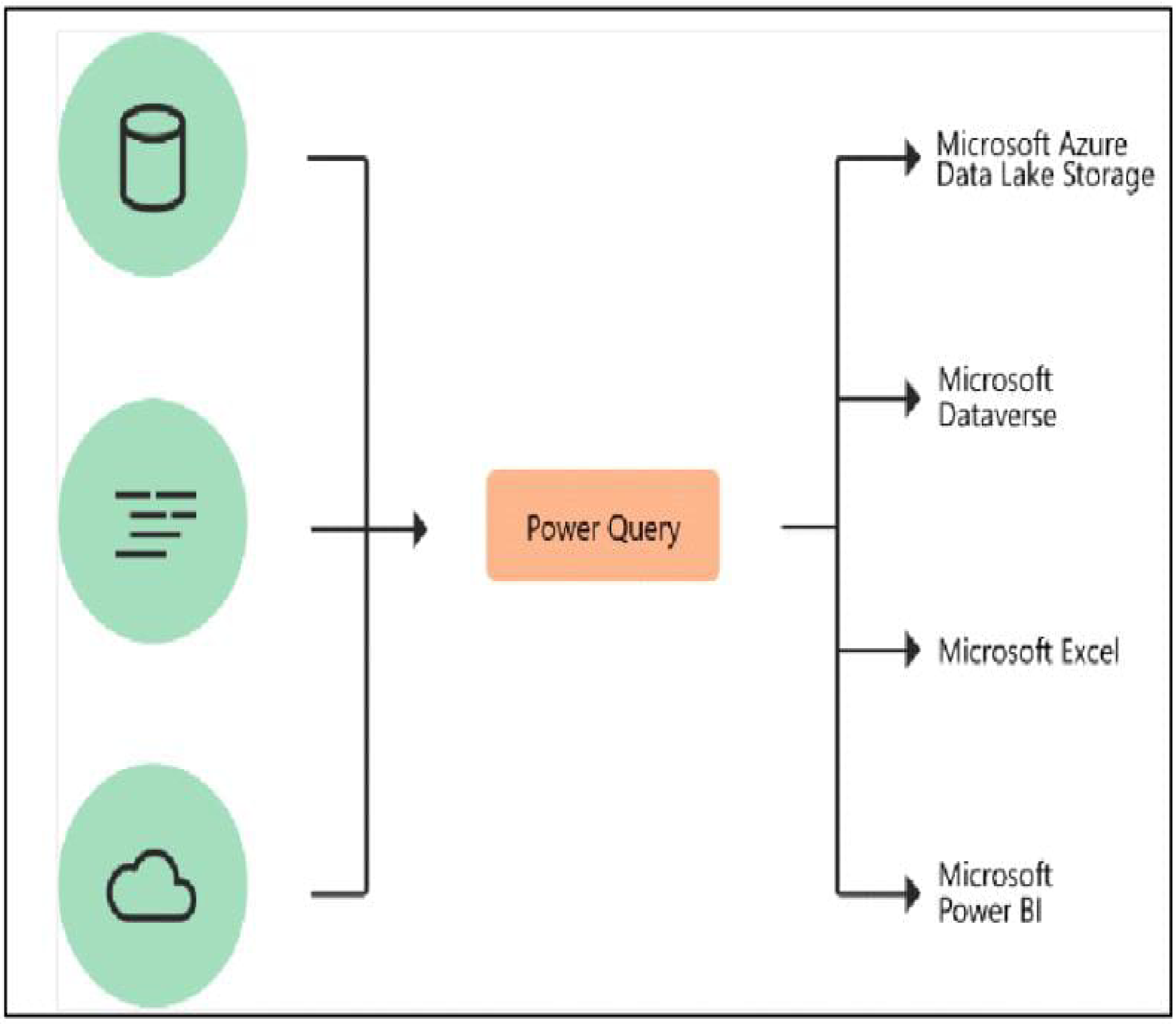

POWER QUERY EDITOR:

POWER QUERY: This is a data connection technology that enables you to discover, connect, combine, and refine data across a wide vasriety of sources.

SOFT REQUIREMENTS:

- POWER BI DESKTOP: this is a window application that you can use to create reports 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 dashboards, and share insights.
- POWER BI MOBILES: This is a mobile application that you can use to access your reports and dashboards on the go.

- Power query comes with a graphical interface for getting data from sources and a power query editor for applying transformations.  Because the engine is available in many products and engine is available in many products and servicesd, the destination where the data willl be stored depends n where power query was used.




- Using Power Query, you can perform the extract, transfor, and load (ETL) processing of data.

- The power Query Editor is the primary dta perparation experiness, where you can connect to a wide range of data sources and apply hundrends of different data transformations capabilities are common across all data sources whatever the underlying data source limitation.

- When you create a new transformation step by interacting with the components of the power query interface power query

automatically creares M code required to do the transformation so you don’ t need to wsrite any code.

Currently two power query experiences are available:

1. POWER QUERY ONLINE – Found in integrations such as power BI data flows, Microsoft Power platformdata flows, Azure data factory wrangling data flows, and many more that provides the experince through an online wed bage.

2. POWER QUERY FOR DESKTOP- Found in intergrations such as power query for excel and power BI desktop.

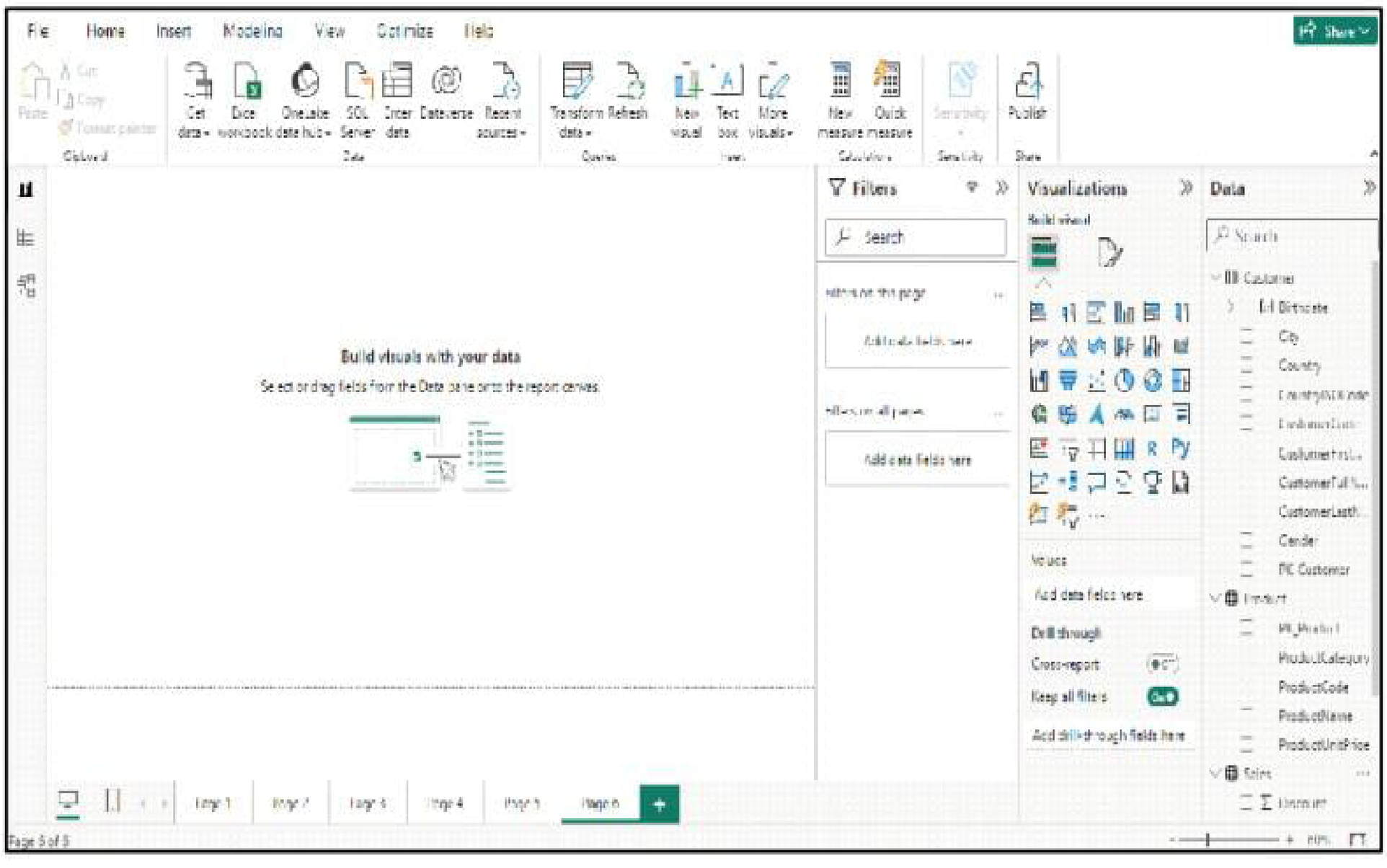
NOTE:

Although two power query experines of the exists, they both provides almost the same user expernices in every scenario.

TRANSFORMATION:

The transformations engine in power querdy includes many prebuilt transformaion funtions that can be used throug the graphical interface of the power query editor. These transformations an be simple as removing a coulumn or filtering rows, or as common as using he first row as a table header. There are also unpivot.

All these transformations are made porssible by choposing the transformations options in the menu and the applying the options required for the transformaion. The following illustrations show a few of the transformations available in power query.




USER INTERFACE:

THE RIBBON:

At the top we have the familiar Microsoft Ribbon. Just like the ribbons in Microsoft execl, word, powerdpoint the power BI ribbons is filled with tools split up into differen transformation data) via the “transform data” buttons and adding in visuals and more.

RIBBON TABS:

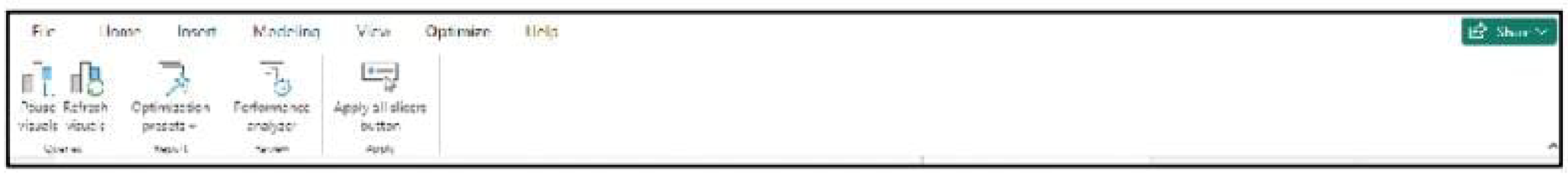
- The HOME tab has tools for adding data sources acessing power query editor used for cleaing and transformation data via the “transform data” buttons, and adding in visuals and more.


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


❖ The MODELING tab lets us create DAX measures, or even now coloumns and tables, and also let us set up a security model if we need some user to only 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 OPITNIZE tab has tools to check the efficiency of our reports, as in if they are laoding really slow, we can analyz what parts of the eport are loading reall slowly.

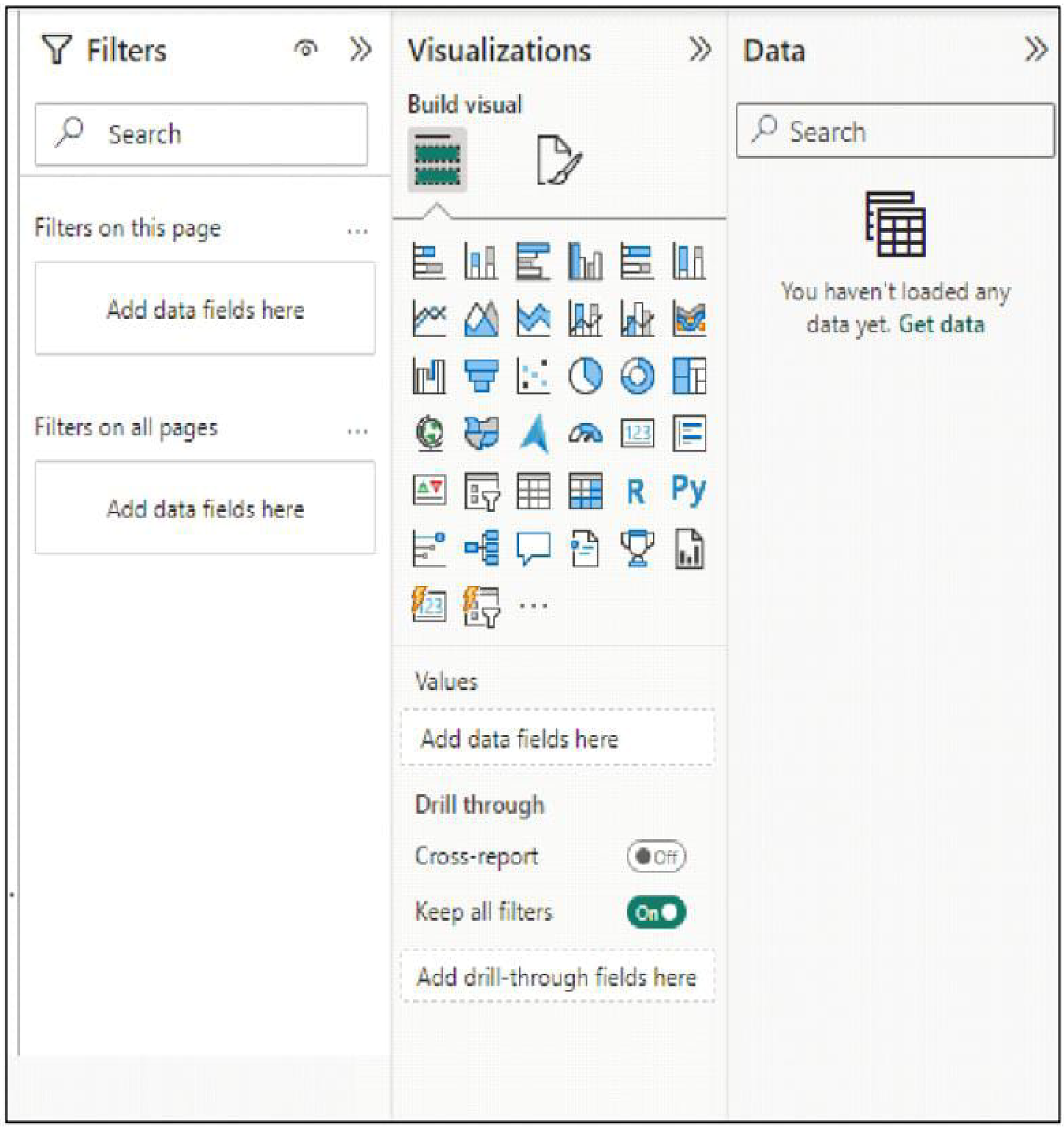



❖ The EXTERNAL TOOLS tab is where 3rd- pary tool live. There are only a few of these okey’d Microsoft.


PANES:

One the right of the power BI interface are 3 lpanes that apperar by default.

- The FILTERS pane is where we can create filters and control what data is making it form our data to the visual on our convas.
- The VISUALZATIONS pane is where we can chhose what visual we want to make, and it also has fpmating tools.
- Te DATA pane is where we see the tables and cloumns of daa we've added



ABOUT MY PROJECT:

Supply chain management (SCM) is the handling of the entire production flows of goods and services that include alll orocess for converting raw materials into final products. It involves the streamlinering of a business’s supply side activities to maximize customer value and gain a compositive advantages in the market.

Supply chain management practice depends havily n industrial engineering. It is the board range of control and excute a producted flow for materails to production to distribtion in the mrst esconomical prostble.

Supply chain managemen encompasses the planning and management of the activiies involved in ccoucing. Procurement. Converstion. And logistices management activites. Imoportantl, it also includes coordination and collaboraion with chammel partners. Whinch suppy and deman management with in and across compaines.

DATA SHEET:

SUPPLY CHAIN ANALYSIS OF INVERTORUES (DATA SHEETS OF SALES, PRODUC AND CUSTOMER)O IN EXCEL FORMAT.

CUSTOMER:

| | A | B | C | D | E | F | G | H | I | |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | PK_Customer | CustomerCode | CustomerFirstName | CustomerLastName | Country | CountryISOCode | City | Gender | Birthdate | CustomerFullName |
| 2 | 1 | N7211709 | Arnaud | Gastelclum | Belgium | BE | Mouscron | M | 03-Apr-1982 | Arnaud Gastelclum |
| 3 | 2 | J52H903 | Pauline | Picarut | France | FR | Villefranche sur mer | F | 23 Jun 1993 | Pauline Picarut |
| 4 | 3 | H59L252 | Antoine | Legrand | Nederland | NL | Rotterdam | M | 08-Jun-1984 | Antoine Legrand |
| 5 | 4 | C30R754 | Coralie | Brent | Nederland | NL | Maastricht | F | 20-Apr-1972 | Coralie Brent |
| 6 | 5 | D42W912 | Julien | Pomodoro | France | FR | Roubaix | M | 27-Nov-1985 | Julien Pomodoro |
| 7 | 6 | I855191 | Sarah | Croche | France | FR | Paris | F | 11 May 1959 | Sarah Croche |
| 8 | 7 | L75N698 | Mike | Jeff | Nederland | NL | Amsterdam | M | 12-Dec-1976 | Mike Jeff |
| 9 | 8 | K494336 | Amina | Luo | Belgium | BE | Brussels | F | 23-Oct-1940 | Amina Luo |
| 10 | 9 | Q44B407 | Bjorn | Bio | Belgium | BE | Charleroi | M | 23-Aug-1945 | Bjorn Bio |
| 11 | 10 | Z91K849 | Lisa | Dogusti | Belgium | BE | Antwerp | F | 28 Nov 1957 | Lisa Dogusti |
| 12 | 11 | K7ML561 | Theresa | Limande | France | FR | Strasbourg | F | 12-Jun-1971 | Theresa Limande |
| 13 | 12 | V17E452 | Hilde | Vandenelst | Nederland | NL | Amsterdam | F | 13-Oct-1969 | Hilde Vandenelst |
| 14 | | | | | | | | | | |
| 15 | | | | | | | | | | |
| 16 | | | | | | | | | | |
| 17 | | | | | | | | | | |
| 18 | | | | | | | | | | |
| 19 | | | | | | | | | | |

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

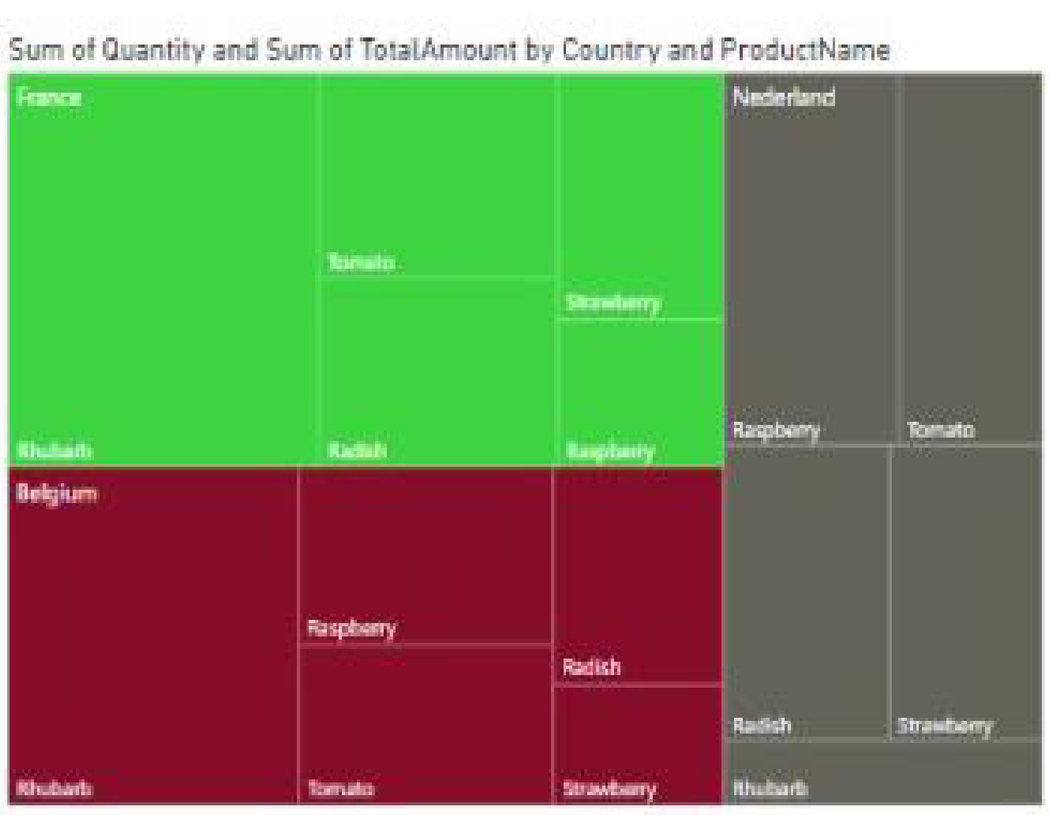
SALES:

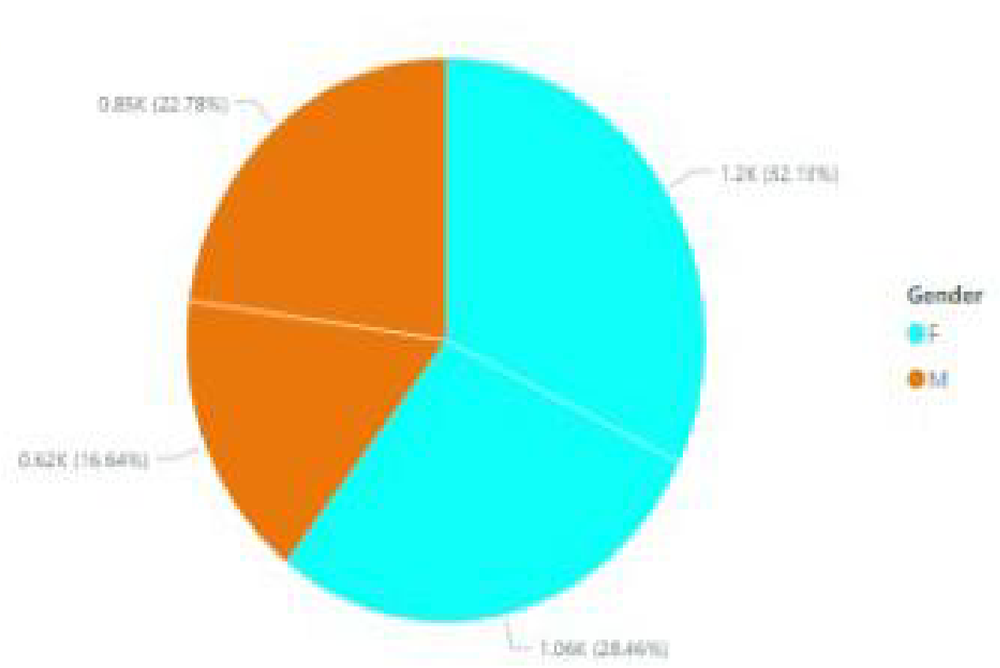
| | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| 1 | FK_Customer | FK_Product | Quantity | UnitPrice | Discount | TotalAmount |
| 2 | 6 | 6 | 2 | 1.5 | 0.6 | 2.4 |
| 3 | 4 | 24 | 4 | 1.79 | 2.38 | 4.78 |
| 4 | 1 | 6 | 1 | 1.5 | 0 | 1.5 |
| 5 | 1 | 7 | 1 | 4.58 | 0 | 4.58 |
| 6 | 5 | 8 | 4 | 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

VISUALISATON:

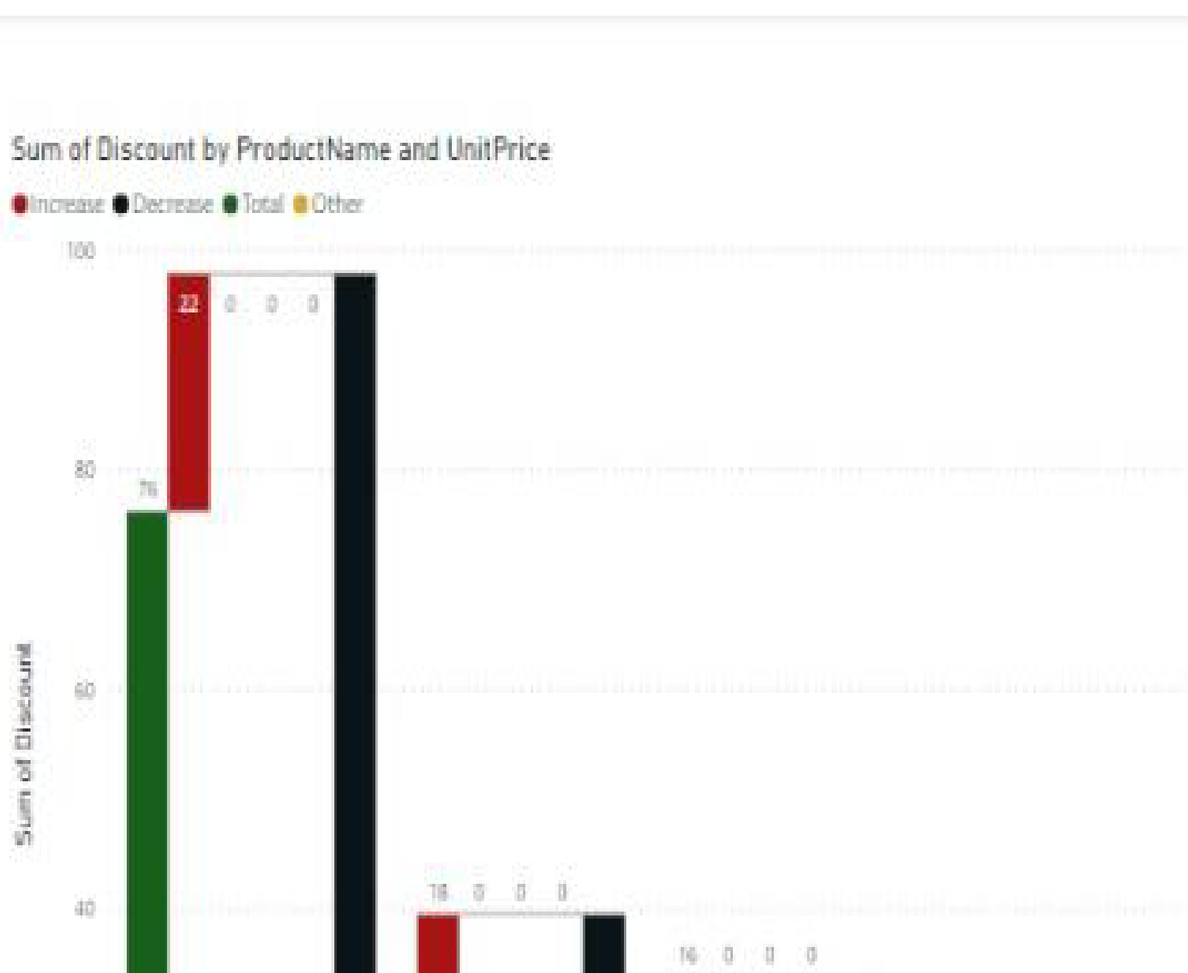
PIE CHART AND TREE CHART:  It represent the count of country by city.



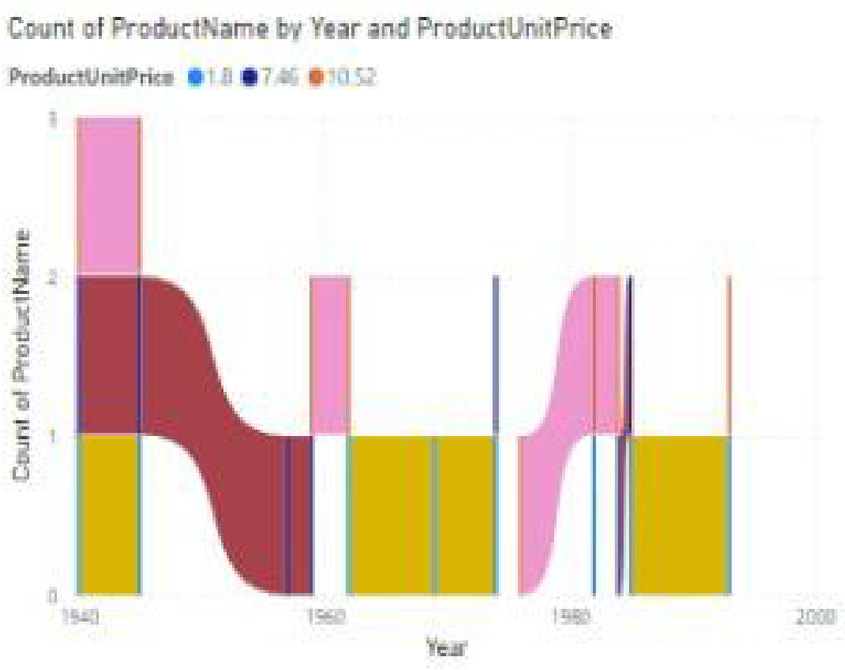

TOTAL AMOUNT OF PRODUCT NAME:

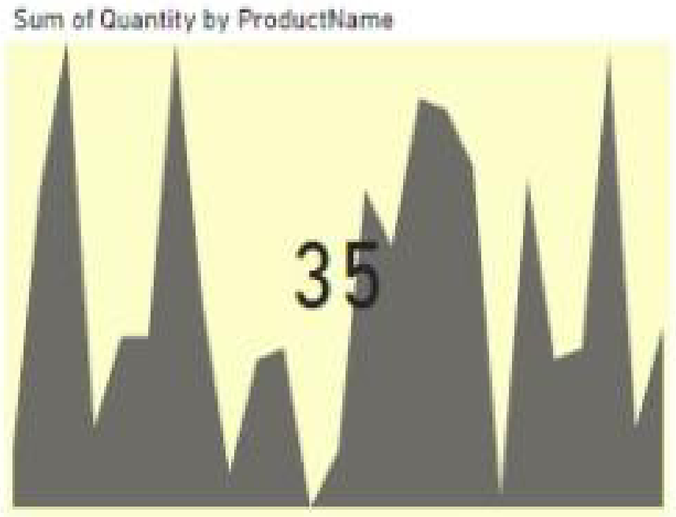
Sum of quality of sume of total amount by country and product name.




WATER FALL CHART AND GAUGE  CHART:

- Water fall chart that shows the count of gener by year.
- Gauge chart that shows the count of year and count of day.



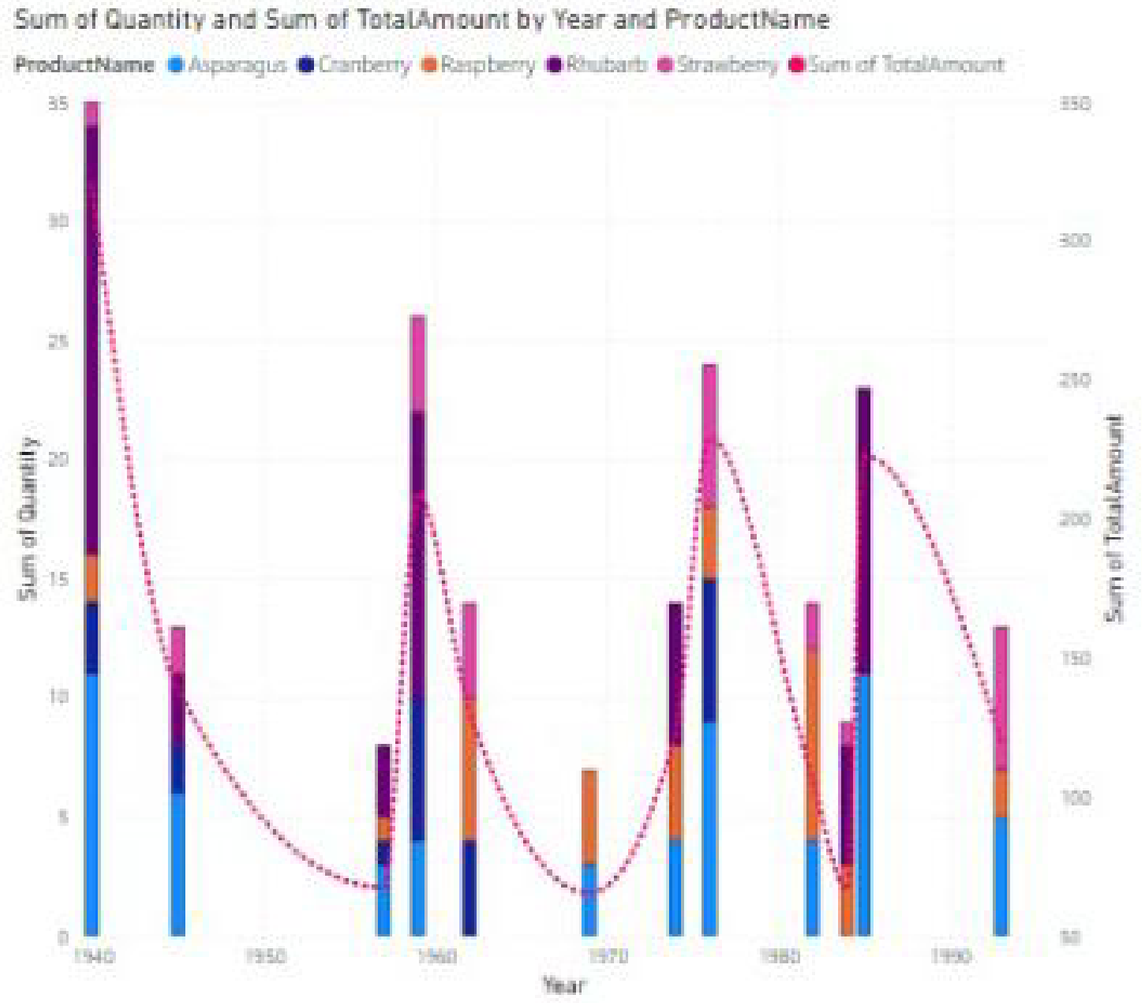

COUNT OF PRODUCT YEAR :

Sum of the quality to product name to count of product of yer to name .

Count of product name

The Product Purchased by Customer

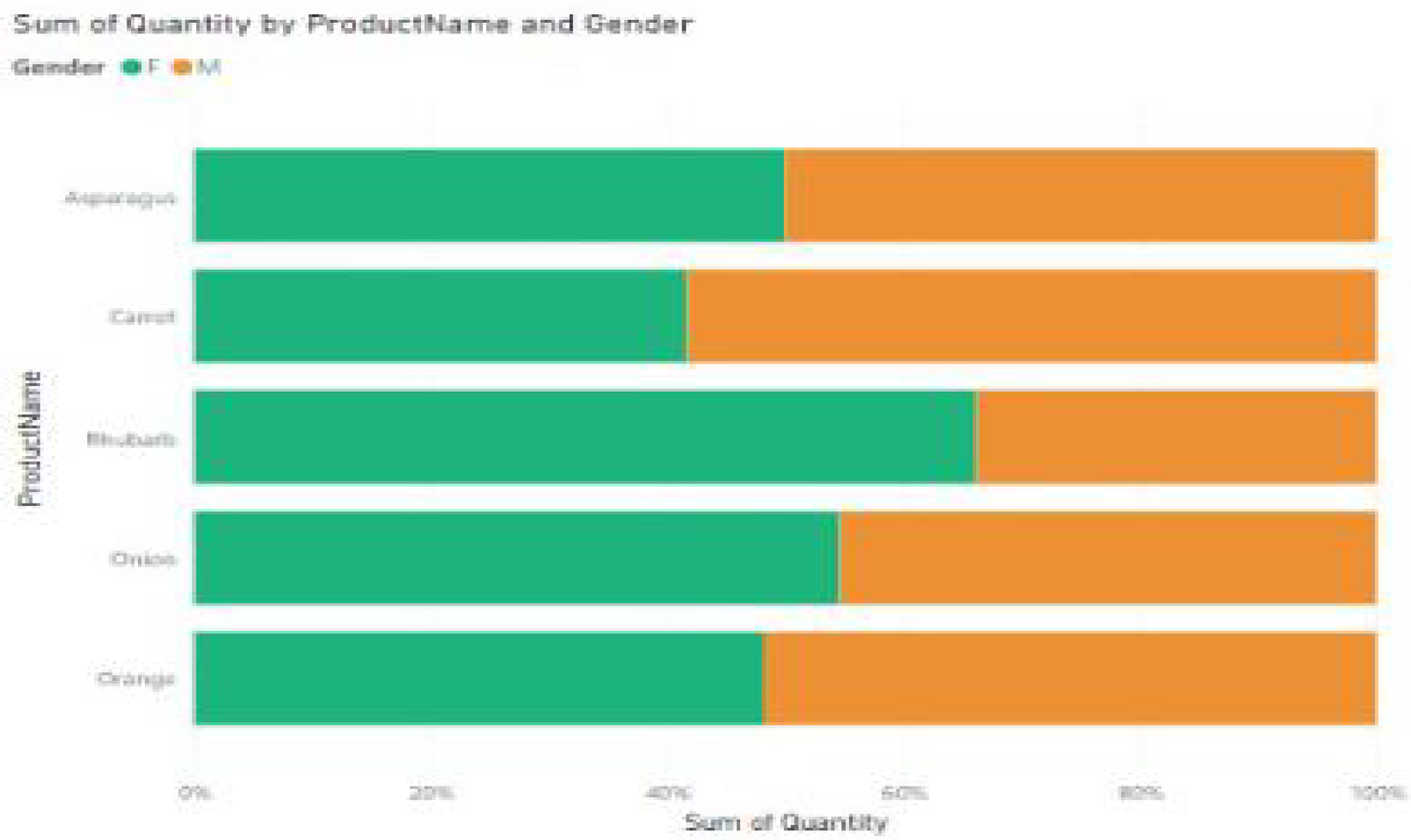
| CustomerFullName | Asparagus | Raspberry | Rhubarb | Total |
|---|---|---|---|---|
| Amina Loo | 24.24 | 7.32 | 29.84 | 61.40 |
| Antoine Legrand | | 7.32 | 14.92 | 22.24 |
| Arnaud Gastelblum | 12.12 | 14.64 | | 26.76 |
| Bjorn Bio | 12.12 | | 7.46 | 19.58 |
| Coralie Brent | | 21.96 | | 21.96 |
| Hilde Vanderelst | 12.12 | 7.32 | | 19.44 |
| Julien Pomadere | 24.24 | | 22.38 | 46.62 |
| Lisa Dagusti | 12.12 | 7.32 | 14.92 | 34.36 |
| Mike Jeff | 36.36 | 14.64 | | 51.00 |
| Pauline Peanut | 24.24 | 7.32 | | 31.56 |
| Sarah Croche | 12.12 | | 22.38 | 34.50 |
| Theresa Limande | 24.24 | 7.32 | 7.46 | 39.02 |
| Total | 193.92 | 95.16 | 119.36 | 408.44 |




PURCHASE OF CUSTOMER:

The product of purchase by customer to the table

Product nameof total amount.




PRODUCT NAME OF GENDER:

Sum of quantity by product name and gener to quantity.

DASHBOARD AND REPORT:

SUPPLY CHAIN ANALYSIS


REPORT:

Power BI numberous benefits for projecct tracting.

One of the manin advantages its advility to consolidate data from multiple sources, such as project management tools, financial

systems, and spreadsheets.  This allows project manager ton spreadsheets.  This allows project, making it easier to identify trends, paterns and anormalities power BI advanced isualizations enable the creation of intuitive dashbords, making it effortless to track project progress at a glance futhermost power bi interactive features allow users to explore and drill into data, gaining deeper insight into the project performance.

Another benefit of using power BI for project tracking is its ability to automat dat refrehes.  With power bi project managers can up scheduled  refreshes to ensure that the data is always up to data.  The eliminates the need for manul data updates and reduce the risk of using oudated information for decision-making.

In addition power BI offer a wide rnge of collabration featres that enhance team collabration and communication project team can easily share dashboards and reports with stakeholders,  enabling real time annotations the specific data pata points, facilitating discussion and tracking process.

CONCLUSION:

Microsoft  power bI is an indispensable  tool in threlam of business intelligence . its robust feature ,ease of use and ability to transform raw data into actionable insignt make it a tob choice for organization worldwide .As you wrab up you Power BI Project , consider the following key points.

DATA CONNECTIVITY:

POWER BI extensive connector library allows seamless interactive with various data source ,including analysis  SQL  data base and more

CUSTOM VISALISATION:

Leverage power BI designed visualization to create interactive reports tailored to your spcific needs.  Additionally, explore third packs for intelligence and analytics.

PERFORMANCE OPTIMIZTION:

In columnar database engine within power bI significantly imporves performance by compressing  large datasets, making it an effect choice for data modeling.

LINK:

https://github.com/Jeya776/JEYA-Power-BI