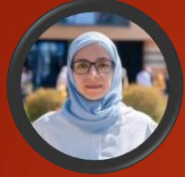


# PHARMA DATA ANALYSIS



DATA ANALYST:FATMA ELKASHEF



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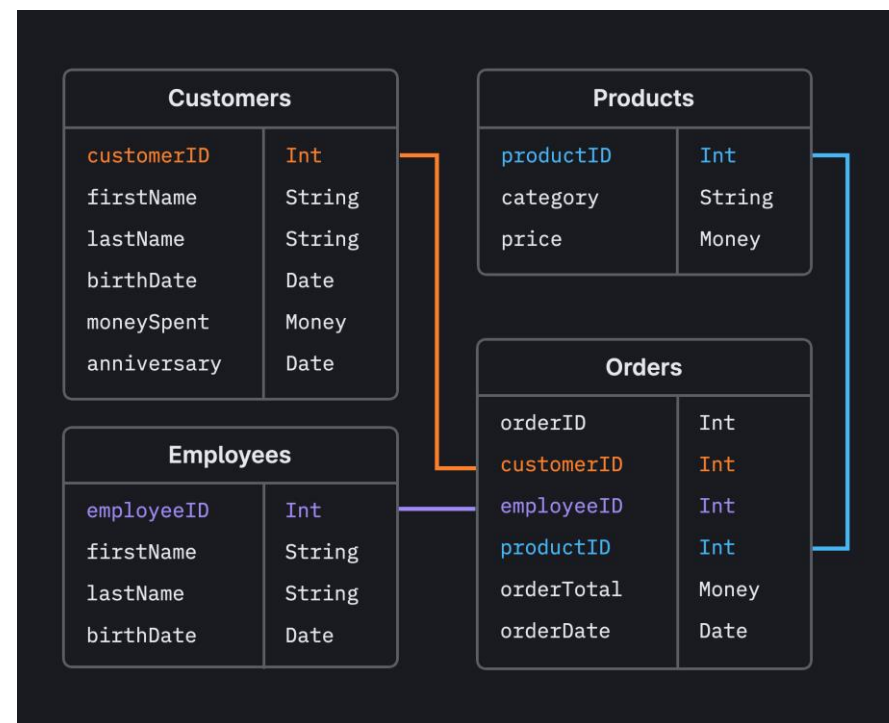
**S15: Calculates the year-over-year (YoY) growth**

**S16: Total of sales over time**

**S17: Sales Dash Board**

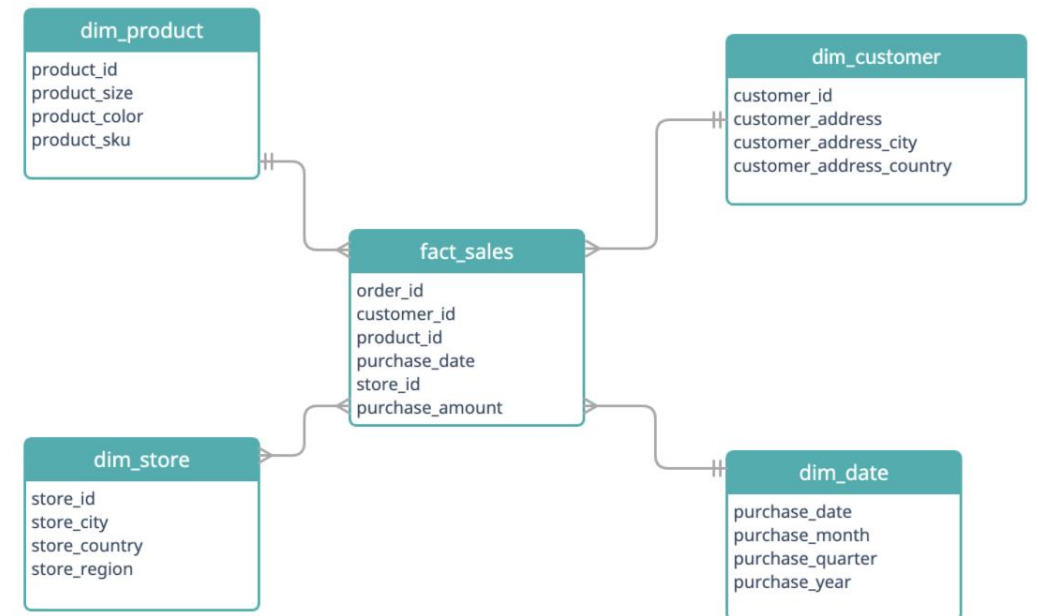
**Schema Design:** Given the provided dataset, create a Power BI data model with appropriate tables and relationships, considering the Distributor, Customer Name, City, and other relevant columns.

- The schema is the structure that we define for our data. The schema defines the tables, relationships between tables, fields, and indexes.
- The schema will also have a significant impact on the performance of our database. By dedicating time to the schema design, we will save ourselves a headache in the future. One tool that will help us design our schema is an ERD, entity-relationship diagram.



**Relationships:** Establish the necessary relationships between the tables in your data model. For instance, connect the "Sales" table to the "Customers" table.

- In the diagram, we see a central fact table and four dimension tables - a separate table describing the customer, date (of purchase), store where the purchase happened, and product purchased.
- The fact table is linked via a foreign key relationship to the primary key of each dimension. This type of data modeling allows us to query data faster and with simpler queries than the normalized database design.

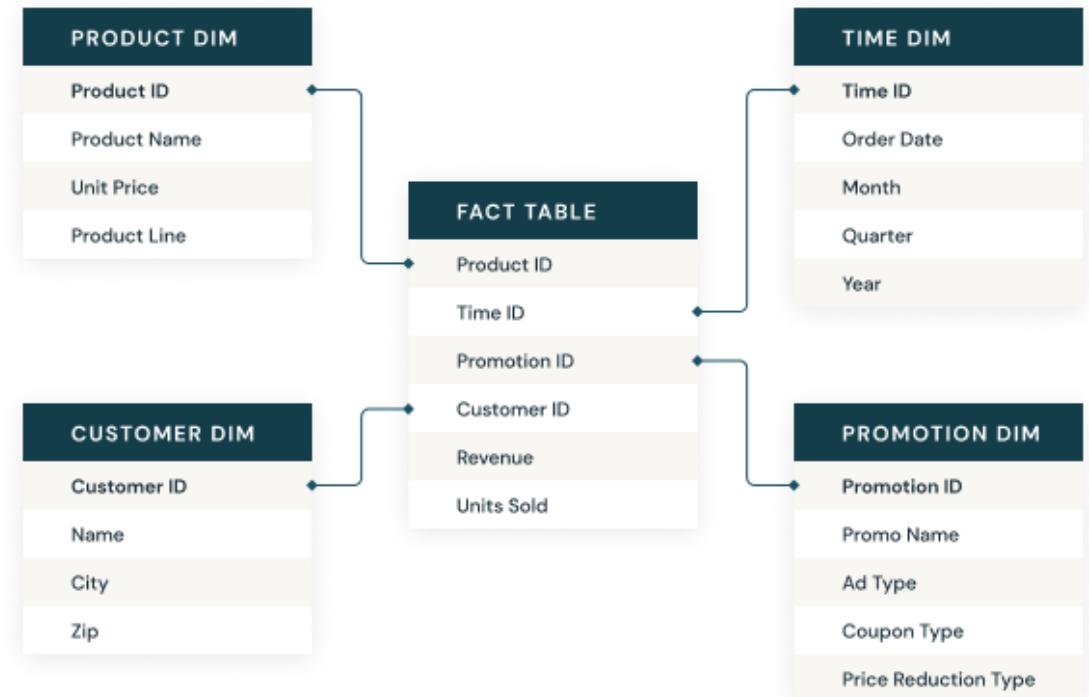


**Schemas: Build a star schema based on the data and explain how your schema design helps optimize report performance.**

### optimize report performance

- ▶ Reduced Redundancy
- ▶ Improved Query Performance
- ▶ Simplified Joins

### Star schema



**Calculated Columns vs. Measures:** Calculate the total sales for each product both as a calculated column and a measure. Compare the results and explain the differences.

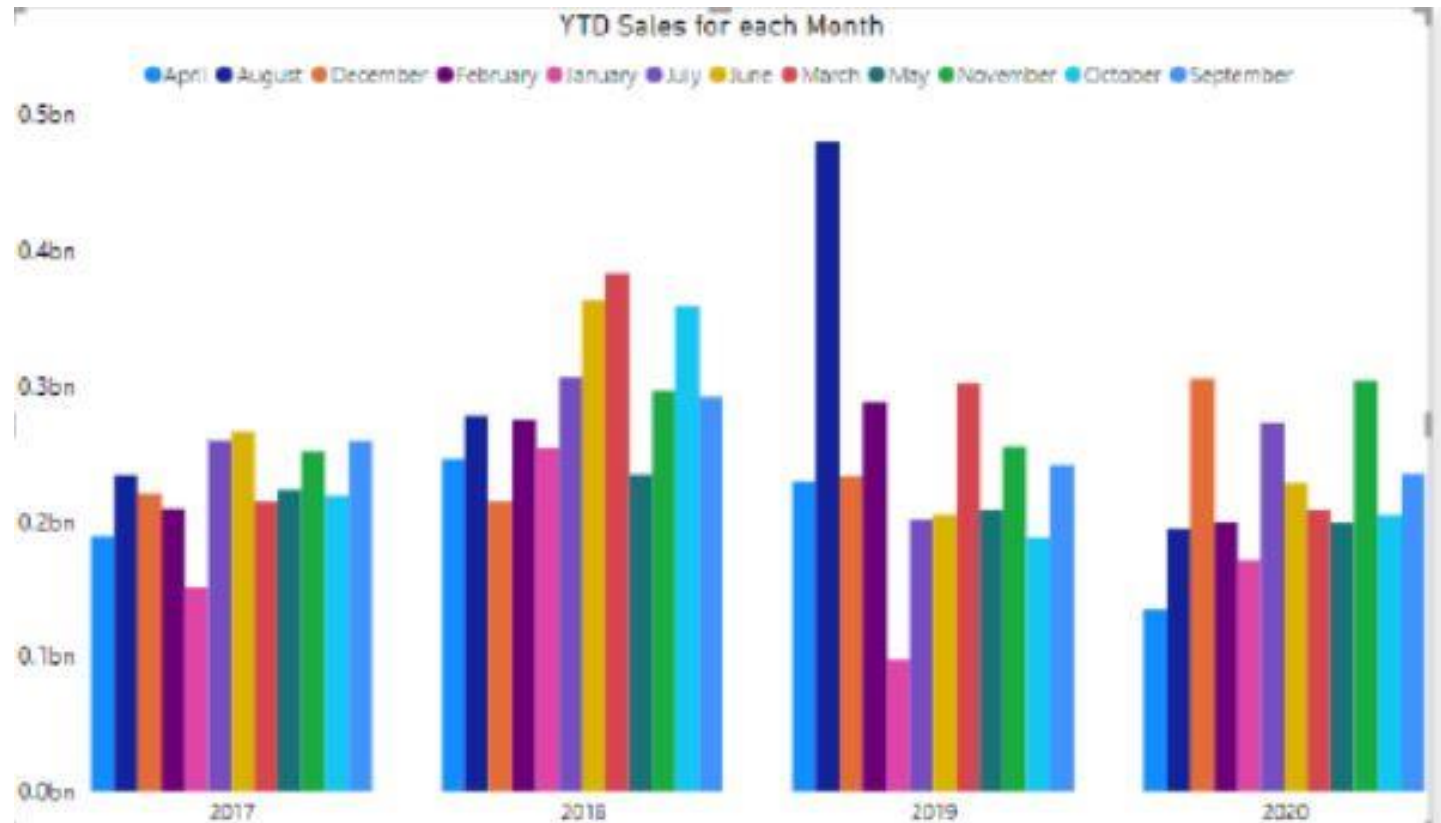
- ❑ Measure: Total Cost = SUMX(Sales, Sales[Price]\*Sales[Quantity])
- ❑ Column: Total Cost = Sales[Price] \* Sales[Quantity]

Difference: Calculated column calculates a value for each row based on a formula and it takes storage while a measure computes a value based on an aggregation over a set of rows

Product Name	Sum of Sales	Total Sales
Abatatriptan	74995424	74995424
Abilovir Aprotasol	34146430	34146430
Abobozolid	7426350	7426350
Abranatal Lysoprosate	84577476	84577476
Abtasol	85226882	85226882
Acantaine	7181328	7181328
Acelimus	86676994	86676994
Aciprex	50144889	50144889
Aclonuma	48161244	48161244
Acubulin	59892210	59892210
Acycnafine Microvate	94580262	94580262
Acycpex	44220570	44220570
Adalatamine	66397456	66397456
Adideine	67888140	67888140
Adreacetam Barazoxane	2834784	2834784
Adriacaine	33092148	33092148
Adriafinil Ehtymara	66482310	66482310

**Time Intelligence: Using DAX, create a measure that calculates the year-to-date (YTD) sales for each month.**

YTD Sale = TOTALYTD(SUM('Pharma\_data'[Sales]),  
'Pharma\_data'[Month])





**Filter Context vs. Row Context: Write a DAX calculation that shows the total quantity sold by each sales rep. Explain how filter and row contexts apply.**

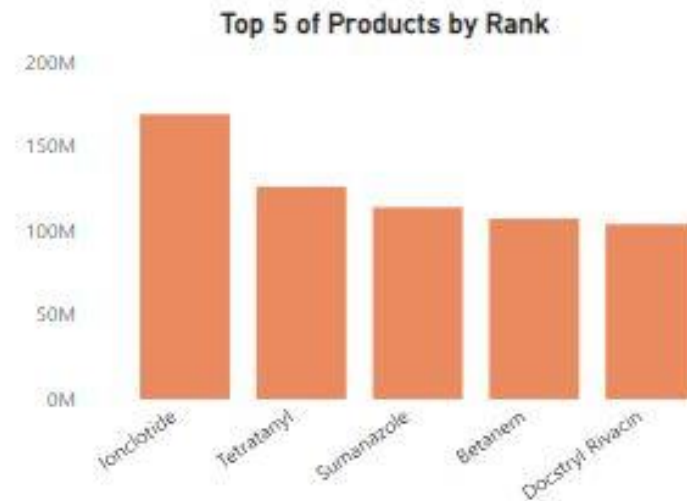
- TotalquantitybySRep =  
CALCULATE(SUM(Sales[Quantity]),ALLEXCEPT  
( Sales,Sales [Name of Salesrep]))
- The filter context is defined by the outer functions, and the row context is created by iterating through each row within that filter context

Name of Sales Rep	Total Quantity
Sheila Stones	2384530
Daniel Gates	2310477
Abigail Thompson	2301506
Jimmy Grey	2293164
Morris Garcia	2255844
Steve Pepple	2237292
Anne Wu	2230110
Jessica Smith	2143427
Erica Jones	2137486
Mary Gerrard	2111213
Stella Given	2109223
Thompson Crawford	2098419
Alan Ray	2066091

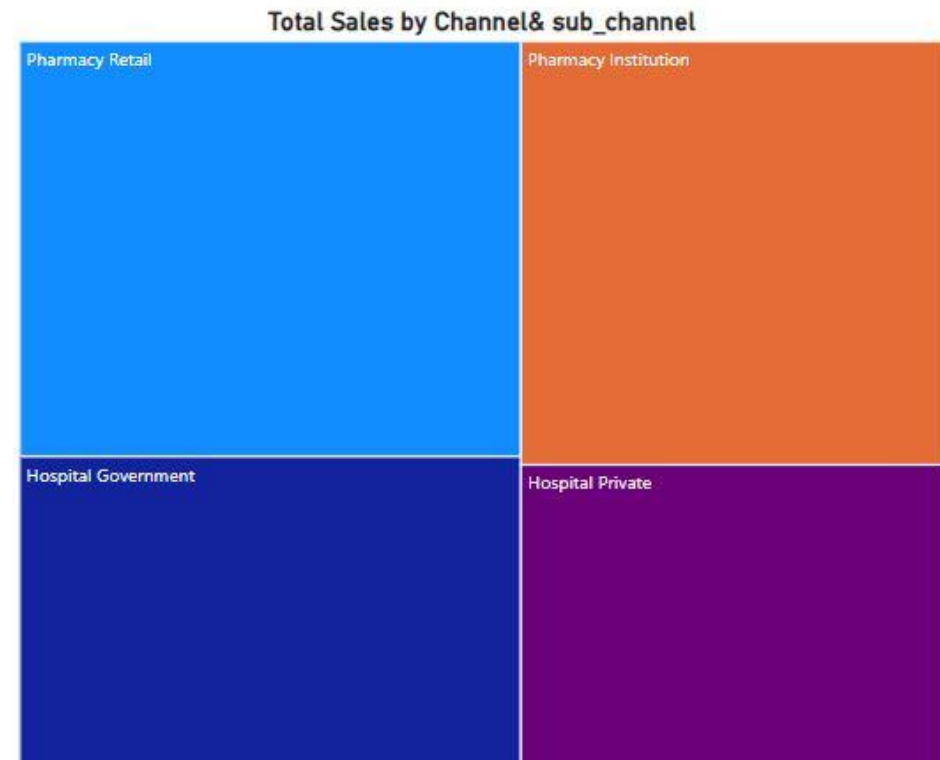


**Ranking: Create a DAX measure that ranks products by sales. Display the top 5 products by rank in a visual.**

```
Product Sales Rank = RANKX(  
    ALL('Pharma_data'[Product Name]), CALCULATE(  
        SUM('Pharma_data'[Sales]),  
        ALLEXCEPT('Pharma_data', 'Pharma_data'[Product  
            Name])) )  
    , DESC, Dense )
```



**Parent-Child Hierarchies:** If there's a hierarchy in your data, such as categories and subcategories, create a DAX measure to summarize sales at the subcategory level.

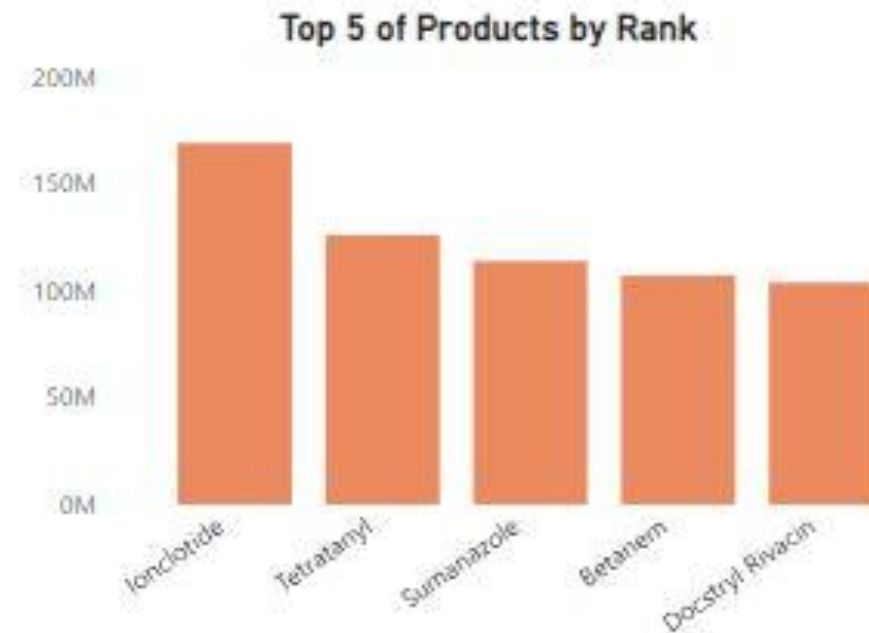


**Drill-Through:** Build a report where users can drill through from a summary to detailed data. For example, starting from a map, drill through to a table of individual sales for a specific city.

- ❑ Starting from a map, drill through to a table of individual sales for a specific city.



**Custom Visuals:** Use a custom visual in your report to visualize sales data in a unique way. Explain why you chose this custom visual.



# Bookmarks and Buttons: Create a report with bookmarks and buttons that allow users to navigate between different pages or states within the report.

Sales Rep

Sales Team

Distributor

Sales Rep

Sales Team

Distributor

Sales Rep

Sales Team

Distributor

Total Sales By Sales Rep

Name of Sales Rep	Total Sales
Thompson Crawford	86964886
Steve Pepple	875449933
Stella Given	338340903
Shelia Stokes	368089988
Monte Garcia	931195423
Mary Gormand	875270763
Jimmy Grey	100010174
Jessica Smith	881693366
Erica Jones	871372192
Daniel Gates	910558631
Anne Wu	920168302
Alan Ray	842837243
Abigail Thompson	161056877

Total Sales by Distributor



Total Sales by Sales team



**Conditional Formatting: Apply conditional formatting to a measure so that it changes color when sales exceed a certain target value.**

Product Name	Total Sales
Abatatriptan	74995424
Abilovir Aprotasol	34146430
Abobozolid	7426350
Abranatal Lysoprosate	84577476
Abtasol	85226882
Acantaine	7181328
Acelimus	86676994
Aciprex	50144889
Aclonuma	48161244
Acubulin	59892210
Acycnafine Microvate	94580262
Acycpex	44220570
Adalatamine	66397456
Adideine	67888140
Adrecetam Barazoxane	2834784
Adriacaine	33092148
Adriafinil Ehtymara	66482310
Adtiza Gammaluble	52121024
Afaxacin	8866320
Afinitasol	34394360



**Calculated Columns: Add a calculated column to your data model that calculates the total cost of each product (Quantity x Price).**

### Custom Column

Add a column that is computed from the other columns.

New column name

CusTotal Cost

Custom column formula ⓘ

= [Quantity]\*[Price]

Available columns

Channel  
Sub-channel  
Product Name  
Quantity  
Price  
Sales  
Month

<< Insert

[Learn about Power Query formulas](#)

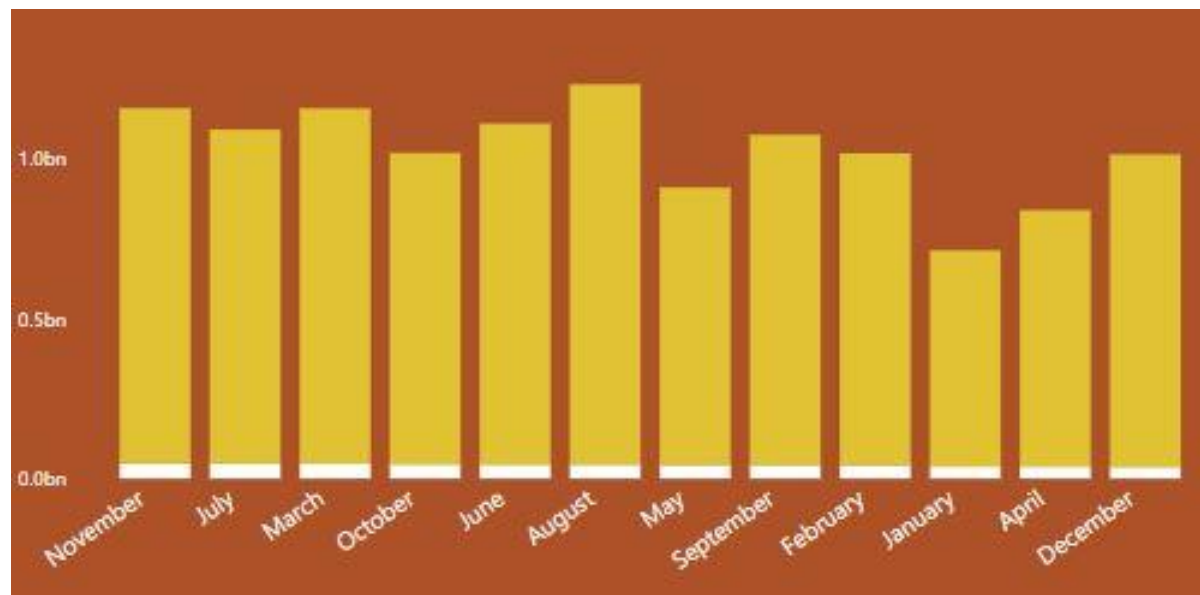
✓ No syntax errors have been detected.

OK

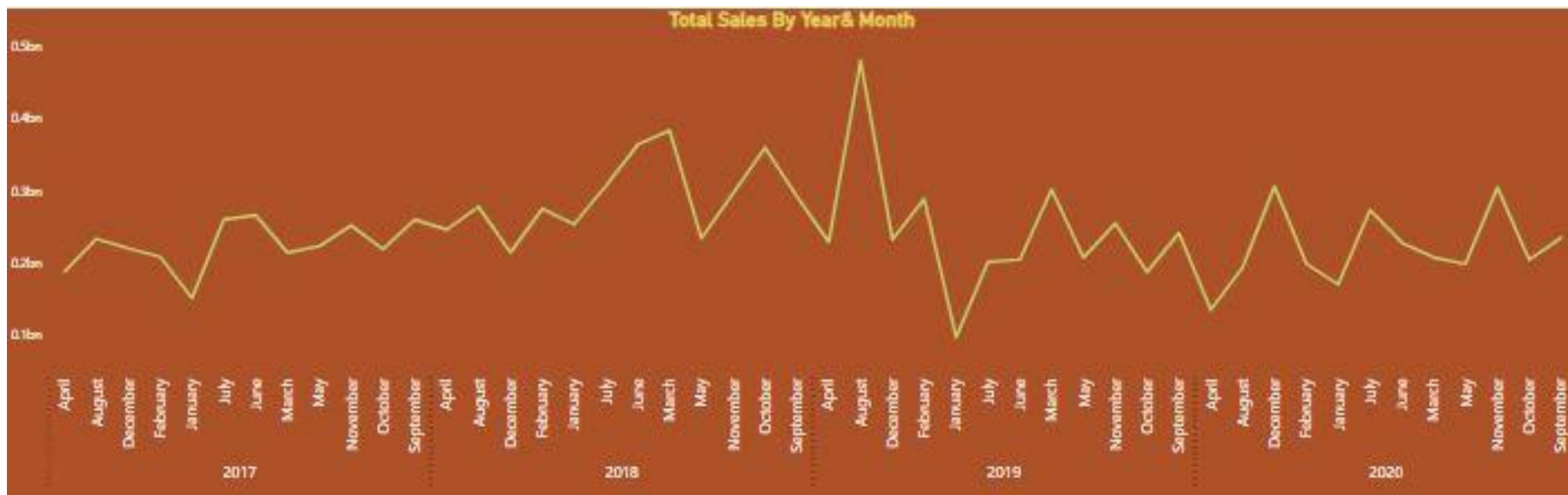
Cancel

Total Cost
6530
1230
1400
5510
2160
1720
6820
5670
3680
5510
990
7080
3610
1300
1060
1150
1400
1150
5200
5420
4810
6040

**Time-Based Calculations:** Create a measure that calculates the year-over-year (YoY) growth in sales for each month.



**Cumulative Total:** Develop a measure to show the cumulative total of sales over time and visualize it in a line chart.





# Dash Board Pharma Sales



Created By  
Fatma Elkashef

12bn

Total Sales

29M

Total Quantity

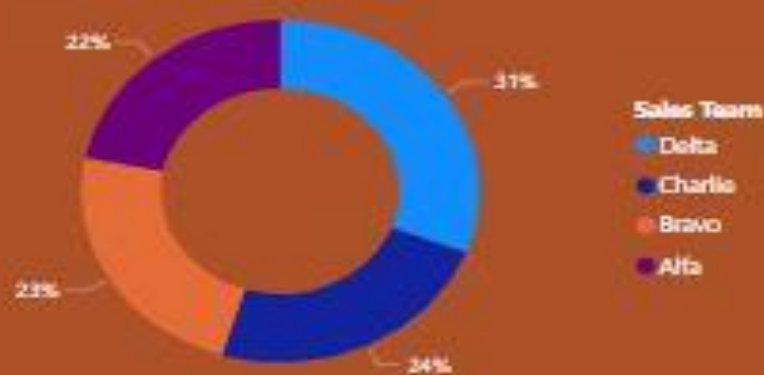
2017

2019

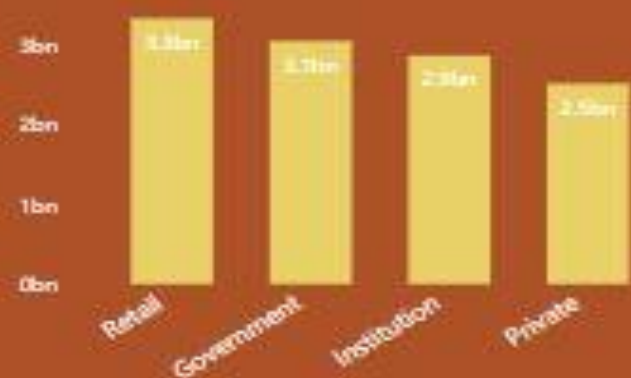
2018

2020

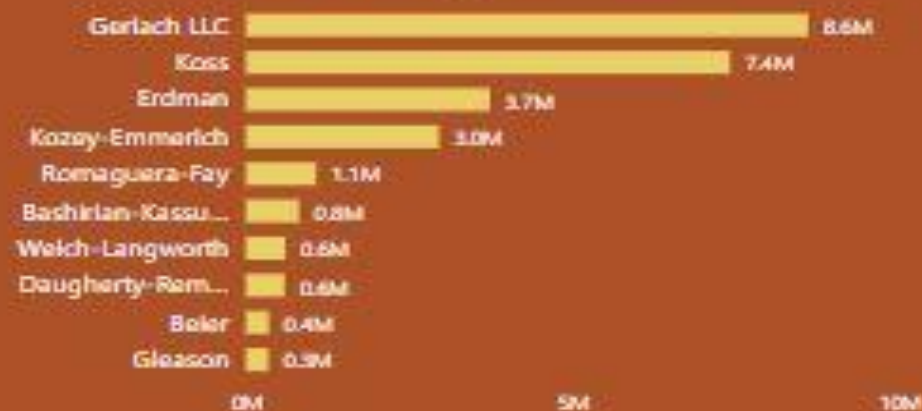
Total Sales by Sales Team



Total Sales by Sub-channel



Total Quantity by Distributor



Total Sales By Year & Month





Thank You For All

