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# Walmart

Conception TB et scoring.

A guide by Ahmed Chelly

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# Walmart

CATEGORY  
**LEADERS**

Walmart Inc. is an American multinational retail corporation that operates a chain of hypermarkets, discount department stores, and grocery stores from the United States, headquartered in Bentonville, Arkansas.



# Walmart Dataset

## FactCmpySales\_2017 = Sales

Sales 2017 = sales  
sales 2018 ==> sales  
sales 2019 ==> sales

40910 Row  
15 Columns

## dim\_prouduct = Products

699 Row  
6 Columns

### Costs Table

24 Row  
6 Columns

## dim\_stores = Stores

144 Row  
9 Columns

### Shiping Date

40910 Row  
2 Columns

### Date Table

## Sales\_details

PREVIEW DOWNLOADED AT 1:07 PM

12 COLUMNS, 450 ROWS Column profiling based on top 1000 rows

8 COLUMNS, 41 ROWS Column profiling based on top 1000 rows

# Cost Table After ETL

FileHomeTransformAdd ColumnViewToolsHelp

Close & ApplyClose

New SourceNew Query

Recent SourcesEnter Data

Data source settingsData Sources

Manage ParametersParameters

Refresh PreviewQuery

PropertiesAdvanced EditorManage

Choose ColumnsManage Columns

Remove ColumnsManage Columns

Keep RowsReduce Rows

Remove RowsReduce Rows

Sort

Split Column

Group By

Data Type: TextUse First Row as HeadersReplace Values

Merge QueriesAppend QueriesCombine

Text AnalyticsVisionAzure Machine Learning

AI Insights

Queries [10]

Sales

sales2018

sales2019

sales\_details

costs table

SalesLT Product

SalesLT ProductCategory

Query1

SalesLT Address

Year (2018)

fx

= Table.AddColumn("#Changed Type3", "MonthNo", each if [Months] = "April" then 4 else if [Months] = "August" then 8 else if [Months] =

|    | Months                             | Year                               | 1.2 Costs for employees            | 1.2 Costs for rent                 | 1.2 MonthNo                        |
|----|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|
|    | Valid 100%<br>Error 0%<br>Empty 0% | Valid 100%<br>Error 0%<br>Empty 0% | Valid 100%<br>Error 0%<br>Empty 0% | Valid 100%<br>Error 0%<br>Empty 0% | Valid 100%<br>Error 0%<br>Empty 0% |
| 1  | April                              | 2021                               | 200317                             | 117398.5157                        | 4                                  |
| 2  | April                              | 2022                               | 239486                             | 183101.9371                        | 4                                  |
| 3  | August                             | 2021                               | 188931                             | 46323.80319                        | 8                                  |
| 4  | August                             | 2022                               | 232672                             | 71576.65226                        | 8                                  |
| 5  | December                           | 2021                               | 210958                             | 135563.9076                        | 12                                 |
| 6  | December                           | 2022                               | 152437                             | 52743.35507                        | 12                                 |
| 7  | February                           | 2021                               | 144611                             | 95668.19211                        | 2                                  |
| 8  | February                           | 2022                               | 213682                             | 170426.8469                        | 2                                  |
| 9  | January                            | 2021                               | 113272                             | 26293.54957                        | 1                                  |
| 10 | January                            | 2022                               | 228433                             | 222139.6243                        | 1                                  |
| 11 | July                               | 2021                               | 207086                             | 50434.47319                        | 7                                  |
| 12 | July                               | 2022                               | 250205                             | 185493.1607                        | 7                                  |
| 13 | June                               | 2021                               | 199864                             | 12085.48478                        | 6                                  |
| 14 | June                               | 2022                               | 202772                             | 36836.63619                        | 6                                  |
| 15 | March                              | 2021                               | 189012                             | 173548.4992                        | 3                                  |
| 16 | March                              | 2022                               | 207938                             | 7304.058054                        | 3                                  |
| 17 | May                                | 2021                               | 184961                             | 120092.4774                        | 5                                  |
| 18 | May                                | 2022                               | 251093                             | 66002.41072                        | 5                                  |
| 19 | November                           | 2021                               | 214745                             | 128244.99                          | 11                                 |
| 20 | November                           | 2022                               | 224940                             | 184002.1745                        | 11                                 |
| 21 | October                            | 2021                               | 229630                             | 89370.59485                        | 10                                 |
| 22 | October                            | 2022                               | 156158                             | 44134.72878                        | 10                                 |
| 23 | September                          | 2021                               | 229585                             | 8219.619201                        | 9                                  |
| 24 | September                          | 2022                               | 135287                             | 27977.82764                        | 9                                  |

Query Settings

PROPERTIES

Name

costs table

All Properties

APPLIED STEPS

Source

Changed Type

Promoted Headers

Changed Type1

Renamed Columns

Unpivoted Columns

Renamed Columns1

Changed Type2

Pivoted Column

Changed Type3

Added Conditional Column

5 COLUMNS, 24 ROWS Column profiling based on top 1000 rows

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# Sales Details Table After ETL

FileHomeTransformAdd ColumnViewToolsHelp

Close & Apply

New Source

Recent Sources

Enter Data

Data source settings

Manage Parameters

Refresh Preview

Properties Advanced Editor

Manage

Choose Columns

Remove Columns

Keep Rows

Remove Rows

Sort

Split Column

Group By

Data Type: Whole Number

Use First Row as Headers

Replace Values

Merge Queries

Append Queries

Combine Files

Text Analytics

Vision

Azure Machine Learning

CloseNew QueryData SourcesParametersQueryManage ColumnsReduce RowsTransformCombineAI Insights

Queries [10]

Sales

sales2018

sales2019

sales\_details

costs table

SalesLT Product

SalesLT ProductCategory

Query1

SalesLT Address

Year (2018)

Table.RenameColumns(#"Removed Columns",{"order\_id","order id"},{"product\_id","product id"},{"store\_id","store id"})

order id

product id

store id

Valid 100%

Error 0%

Empty 0%

Valid 99%

Error 0%

Empty < 1%

Valid 99%

Error 0%

Empty < 1%

|    |    |       |       |
|----|----|-------|-------|
| 1  | 1  | P0258 | S0008 |
| 2  | 2  | P0348 | S0110 |
| 3  | 3  | P0219 | S0026 |
| 4  | 3  | P0219 | S0026 |
| 5  | 3  | P0219 | S0026 |
| 6  | 4  | P0218 | S0051 |
| 7  | 5  | P0660 | S0056 |
| 8  | 6  | P0695 | S0023 |
| 9  | 7  | P0695 | S0132 |
| 10 | 8  | P0296 | S0004 |
| 11 | 9  | P0287 | S0123 |
| 12 | 10 | P0114 | S0137 |
| 13 | 11 | P0241 | S0097 |
| 14 | 12 | P0165 | S0102 |
| 15 | 13 | P0327 | S0063 |
| 16 | 14 | P0436 | S0021 |
| 17 | 15 | P0131 | S0091 |
| 18 | 16 | P0171 | S0094 |
| 19 | 17 | P0035 | S0023 |
| 20 | 18 | P0402 | S0056 |
| 21 | 19 | P0438 | S0015 |
| 22 | 20 | P0453 | S0056 |
| 23 | 21 | P0252 | S0096 |
| 24 | 22 | P0249 | S0078 |
| 25 | 23 | P0219 | S0040 |
| 26 | 24 | P0333 | S0083 |

Query Settings

PROPERTIES

Name

sales\_details

All Properties

APPLIED STEPS

Source

Promoted Headers

Changed Type

Removed Columns

Renamed Columns

3 COLUMNS, 999+ ROWS Column profiling based on top 1000 rows

PREVIEW DOWNLOADED AT 4:57 PM



# Fact Table After ETL

FileHomeTransformAdd ColumnViewToolsHelp

Close & ApplyClose

New SourceNew Query

Recent Sources

Enter Data

Data source settingsData Sources

Manage ParametersParameters

Refresh PreviewQuery

PropertiesAdvanced EditorManage

Choose ColumnsManage Columns

Remove Columns

Keep RowsReduce Rows

Sort

Split Column

Group By

Data Type: Whole NumberUse First Row as HeadersReplace ValuesTransform

Merge QueriesAppend QueriesCombine FilesCombine

Text AnalyticsVisionAzure Machine LearningAI Insights

Queries [10]

Sales

sales2018

sales2019

sales\_details

costs table

SalesLT Product

SalesLT ProductCategory

Query1

SalesLT Address

Year (2018)

= Table.Distinct(#"Removed Columns1", {"order id"})

order id

product id

store id

order date

sales

revenue

stock

Valid 100% Valid 99% Valid 99% Valid 99% Valid 99% Valid 99%

Error 0% Error 0% Error 0% Error 0% Error 0% Error 0%

Empty 0% Empty < 1% Empty < 1% Empty < 1% Empty < 1% Empty < 1%

|    |    |       |       |          |   |       |
|----|----|-------|-------|----------|---|-------|
| 1  | 1  | P0258 | S0008 | 1/2/2017 | 0 | 0     |
| 2  | 2  | P0348 | S0110 | 1/2/2017 | 0 | 0     |
| 3  | 3  | P0219 | S0026 | 1/2/2017 | 5 | 33.56 |
| 4  | 4  | P0218 | S0051 | 1/2/2017 | 0 | 0     |
| 5  | 5  | P0660 | S0056 | 1/2/2017 | 1 | 4.58  |
| 6  | 6  | P0695 | S0023 | 1/2/2017 | 0 | 0     |
| 7  | 7  | P0695 | S0132 | 1/2/2017 | 0 | 0     |
| 8  | 8  | P0296 | S0004 | 1/2/2017 | 0 | 0     |
| 9  | 9  | P0287 | S0123 | 1/2/2017 | 0 | 0     |
| 10 | 10 | P0114 | S0137 | 1/2/2017 | 2 | 0.83  |
| 11 | 11 | P0241 | S0097 | 1/2/2017 | 0 | 0     |
| 12 | 12 | P0165 | S0102 | 1/2/2017 | 1 | 1.3   |
| 13 | 13 | P0327 | S0063 | 1/2/2017 | 0 | 0     |
| 14 | 14 | P0436 | S0021 | 1/2/2017 | 1 | 2.78  |
| 15 | 15 | P0131 | S0091 | 1/2/2017 | 0 | 0     |
| 16 | 16 | P0171 | S0094 | 1/2/2017 | 0 | 0     |
| 17 | 17 | P0035 | S0023 | 1/2/2017 | 2 | 4.54  |
| 18 | 18 | P0402 | S0056 | 1/2/2017 | 0 | 0     |
| 19 | 19 | P0438 | S0015 | 1/2/2017 | 5 | 1.16  |
| 20 | 20 | P0453 | S0056 | 1/2/2017 | 0 | 0     |
| 21 | 21 | P0252 | S0096 | 1/2/2017 | 0 | 0     |
| 22 | 22 | P0249 | S0078 | 1/2/2017 | 0 | 0     |
| 23 | 23 | P0219 | S0040 | 1/2/2017 | 0 | 0     |
| 24 | 24 | P0333 | S0083 | 1/2/2017 | 0 | 0     |
| 25 | 25 | P0055 | S0051 | 1/2/2017 | 0 | 0     |
| 26 |    |       |       |          |   |       |

Query Settings

PROPERTIES

NameSales

All Properties

APPLIED STEPS

Source

Changed Type

Removed Top Rows

Promoted Headers

Changed Type1

Removed Top Rows1

Removed Columns

Renamed Columns

Replaced Value

Replaced Value1

Changed Type2

Removed Duplicates

Filtered Rows

Replaced Value2

Filtered Rows1

Changed Type3

Appended Query

Merged Queries

Expanded 11 3 sales\_details

Reordered Columns

Removed Columns1

Removed Duplicates1

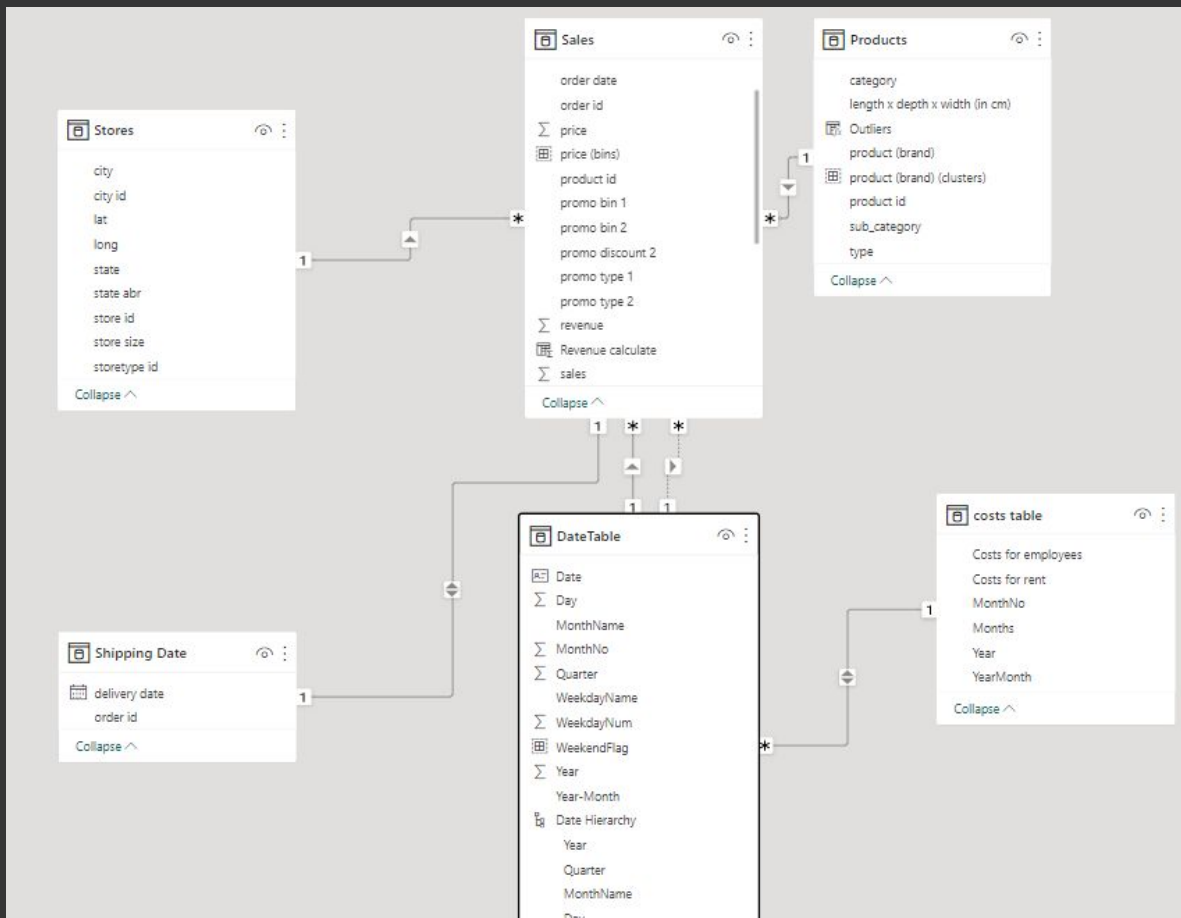
13 COLUMNS, 999+ ROWS Column profiling based on top 1000 rows

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# ETL Tasks Done

1. Connect to a data source
2. Deleting empty rows
3. Using first row as header
4. Changing table and columns names
5. Resolving inconsistencies & nulls
6. Evaluate and transform column data types
7. Used Append queries ( *Sales 2017,sales 2018, sales 2019 ==> Sales*)
8. Used Merge queries ( *Sales with sales\_details left outer join* )
9. Used Pivot & unpivot ( *Cost table*)
10. Used Conditional columns
11. Used Columns from examples
12. Used Data loading with parameters (sales 2019)

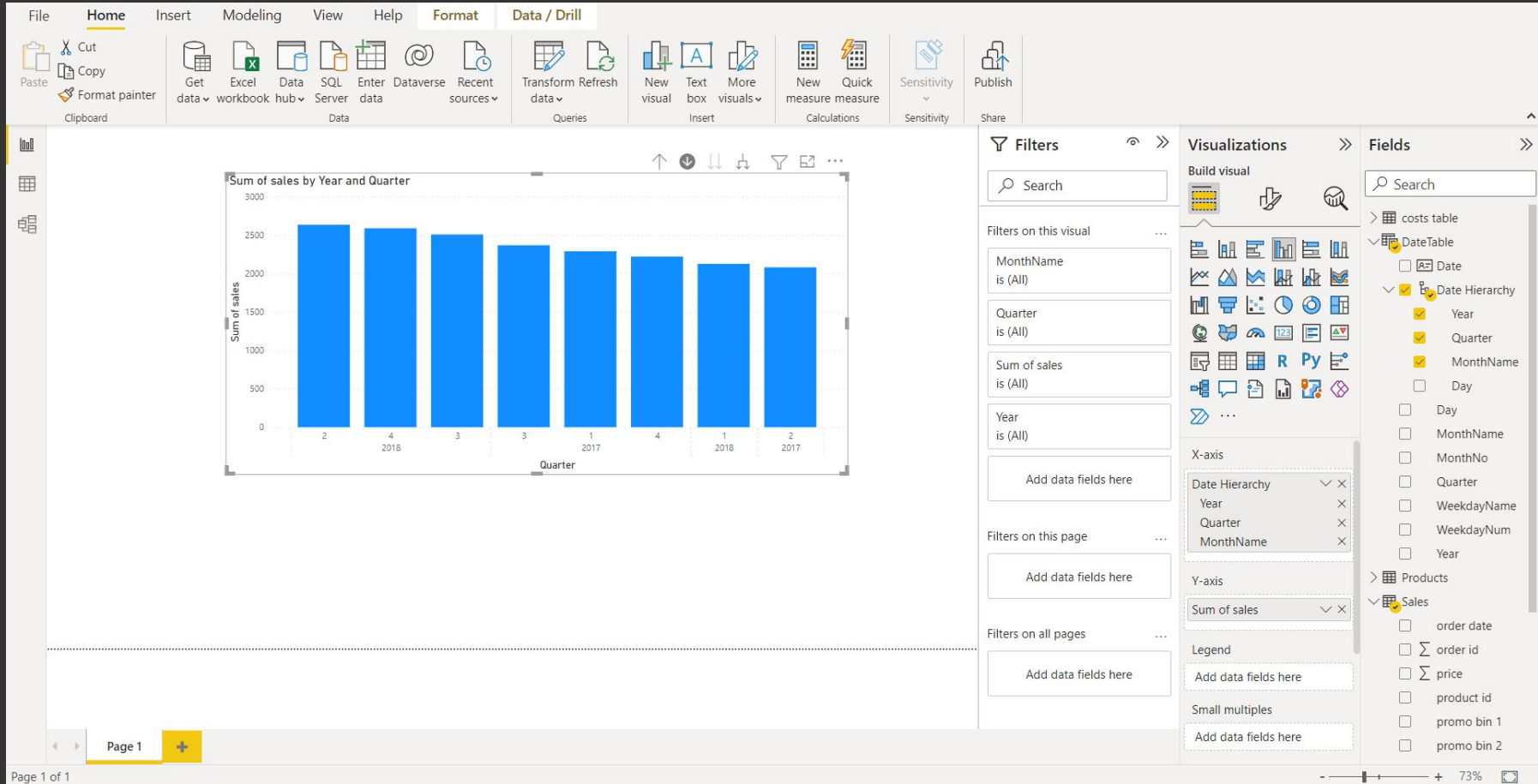
# Model Star Schema



# Date Table

| Date ▾                   | MonthNo ▾ | MonthName ▾ | Quarter ▾ | Year ▾ | Day ▾ | WeekdayNum ▾ | WeekdayName ▾ | Year-Month ▾ | WeekendFlag ▾ |
|--------------------------|-----------|-------------|-----------|--------|-------|--------------|---------------|--------------|---------------|
| Saturday, July 1, 2017   | 7         | July        | 3         | 2017   | 1     | 7            | Saturday      | 2017-7       | Weekends      |
| Sunday, July 2, 2017     | 7         | July        | 3         | 2017   | 2     | 1            | Sunday        | 2017-7       | Weekends      |
| Monday, July 3, 2017     | 7         | July        | 3         | 2017   | 3     | 2            | Monday        | 2017-7       | Week          |
| Tuesday, July 4, 2017    | 7         | July        | 3         | 2017   | 4     | 3            | Tuesday       | 2017-7       | Week          |
| Wednesday, July 5, 2017  | 7         | July        | 3         | 2017   | 5     | 4            | Wednesday     | 2017-7       | Week          |
| Thursday, July 6, 2017   | 7         | July        | 3         | 2017   | 6     | 5            | Thursday      | 2017-7       | Week          |
| Friday, July 7, 2017     | 7         | July        | 3         | 2017   | 7     | 6            | Friday        | 2017-7       | Week          |
| Saturday, July 8, 2017   | 7         | July        | 3         | 2017   | 8     | 7            | Saturday      | 2017-7       | Weekends      |
| Sunday, July 9, 2017     | 7         | July        | 3         | 2017   | 9     | 1            | Sunday        | 2017-7       | Weekends      |
| Monday, July 10, 2017    | 7         | July        | 3         | 2017   | 10    | 2            | Monday        | 2017-7       | Week          |
| Tuesday, July 11, 2017   | 7         | July        | 3         | 2017   | 11    | 3            | Tuesday       | 2017-7       | Week          |
| Wednesday, July 12, 2017 | 7         | July        | 3         | 2017   | 12    | 4            | Wednesday     | 2017-7       | Week          |
| Thursday, July 13, 2017  | 7         | July        | 3         | 2017   | 13    | 5            | Thursday      | 2017-7       | Week          |
| Friday, July 14, 2017    | 7         | July        | 3         | 2017   | 14    | 6            | Friday        | 2017-7       | Week          |
| Saturday, July 15, 2017  | 7         | July        | 3         | 2017   | 15    | 7            | Saturday      | 2017-7       | Weekends      |
| Sunday, July 16, 2017    | 7         | July        | 3         | 2017   | 16    | 1            | Sunday        | 2017-7       | Weekends      |
| Monday, July 17, 2017    | 7         | July        | 3         | 2017   | 17    | 2            | Monday        | 2017-7       | Week          |
| Tuesday, July 18, 2017   | 7         | July        | 3         | 2017   | 18    | 3            | Tuesday       | 2017-7       | Week          |
| Wednesday, July 19, 2017 | 7         | July        | 3         | 2017   | 19    | 4            | Wednesday     | 2017-7       | Week          |
| Thursday, July 20, 2017  | 7         | July        | 3         | 2017   | 20    | 5            | Thursday      | 2017-7       | Week          |
| Friday, July 21, 2017    | 7         | July        | 3         | 2017   | 21    | 6            | Friday        | 2017-7       | Week          |
| Saturday, July 22, 2017  | 7         | July        | 3         | 2017   | 22    | 7            | Saturday      | 2017-7       | Weekends      |
| Sunday, July 23, 2017    | 7         | July        | 3         | 2017   | 23    | 1            | Sunday        | 2017-7       | Weekends      |
| Monday, July 24, 2017    | 7         | July        | 3         | 2017   | 24    | 2            | Monday        | 2017-7       | Week          |
| Tuesday, July 25, 2017   | 7         | July        | 3         | 2017   | 25    | 3            | Tuesday       | 2017-7       | Week          |
| Wednesday, July 26, 2017 | 7         | July        | 3         | 2017   | 26    | 4            | Wednesday     | 2017-7       | Week          |
| Thursday, July 27, 2017  | 7         | July        | 3         | 2017   | 27    | 5            | Thursday      | 2017-7       | Week          |
| Friday, July 28, 2017    | 7         | July        | 3         | 2017   | 28    | 6            | Friday        | 2017-7       | Week          |

# Date Table Create Date Hierarchy



# Date Table Dax Code



```
DateTable =  
ADDCOLUMNS(CALENDAR(DATE(2017,1,1),DATE(2018,12,31)),  
"MonthNo", MONTH([Date]),  
"MonthName", FORMAT([Date],"MMMM"),  
"Quarter", QUARTER([Date]),  
"Year", YEAR([Date]),  
"Day", DAY([Date]),  
"WeekdayNum", WEEKDAY([Date]),  
"WeekdayName", FORMAT([Date],"DDDD"),  
"Year-Month", FORMAT([Date],"YYYY-M"))
```

# Sales measures



```
Previous revenue = CALCULATE( [Revenue measure] ,  
DATEADD(DateTable[Date], -1 , YEAR))
```

```
Products in stock = CALCULATE( SUM(Sales[stock]),  
LASTDATE(DateTable[Date]))
```

```
Revenue calculate = Sales[price]*Sales[sales]
```

```
Revenue Measure = SUMX(Sales,Sales[sales]*Sales[price])
```

```
revenue percentage = [Revenue Measure]/CALCULATE([Revenue  
Measure],ALL(DateTable))
```



# Sales measures



```
Outliers = if ([Revenue Measure]> 5* AVERAGEX(Products,  
[Revenue Measure]),"Outlier","No Outlier")
```

```
Amount of deliveries = CALCULATE(COUNT(Sales[order  
id]),USERRELATIONSHIP(DateTable[Date],Sales[delivery date]))
```

```
Average = AVERAGE(Sales[price])
```

```
//Used for KPI
```

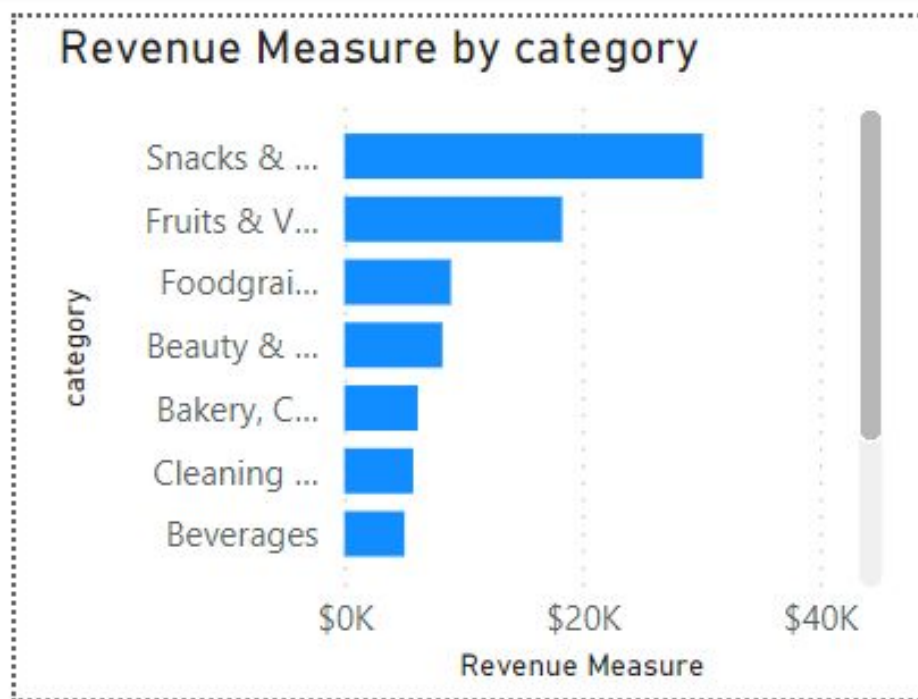
```
Max value = 19
```

```
Target value = 16
```

```
Median price = MEDIAN(Sales[price])
```

```
Min Price = MIN( Sales[price])
```

# Custom Tooltip



# Details Page Drill Through

| order id | order date                | Revenue Measure | state          | city          |
|----------|---------------------------|-----------------|----------------|---------------|
| 5        | Monday, January 02, 2017  | \$4.95          | California     | Pasadena      |
| 13       | Monday, January 02, 2017  | \$0.00          | Florida        | Miami         |
| 19       | Monday, January 02, 2017  | \$1.25          | Tennessee      | Knoxville     |
| 20       | Monday, January 02, 2017  | \$0.00          | California     | Pasadena      |
| 25       | Monday, January 02, 2017  | \$0.00          | Arizona        | Phoenix       |
| 29       | Monday, January 02, 2017  | \$0.00          | Virginia       | Roanoke       |
| 35       | Monday, January 02, 2017  | \$0.00          | Illinois       | Chicago       |
| 39       | Monday, January 02, 2017  | \$0.00          | Missouri       | Springfield   |
| 52       | Tuesday, January 03, 2017 | \$0.00          | Alabama        | Birmingham    |
| 53       | Tuesday, January 03, 2017 | \$0.00          | South Carolina | Anderson      |
| 56       | Tuesday, January 03, 2017 | \$0.00          | Oklahoma       | Oklahoma City |
| 58       | Tuesday, January 03, 2017 | \$0.00          | California     | Sacramento    |
| 59       | Tuesday, January 03, 2017 | \$0.00          | Ohio           | Cleveland     |
| 60       | Tuesday, January 03, 2017 | \$0.00          | Ohio           | Toledo        |
| 64       | Tuesday, January 03, 2017 | \$0.00          | Texas          | El Paso       |
| Total    |                           | \$30,176.03     |                |               |

\$30.18K

Revenue Measure

# Report On Power BI Server

# Rapport de projet Walmart

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Rport



**Overview**

**Week Analysis**

**ANALYSIS WITH  
R**

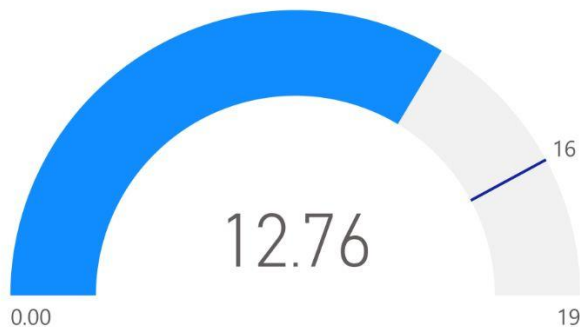




state

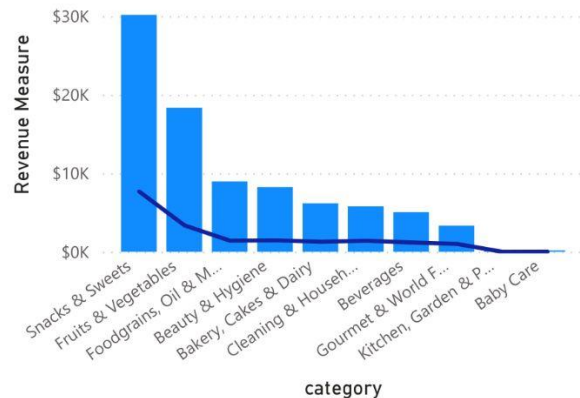
- ☐ Select all
- ☐ Alabama
- ☐ Arizona
- ☐ Arkansas
- ☐ California
- ☐ Colorado
- ☐ Connecticut
- ☐ Delaware
- ☐ District of Co...
- ☐ Florida
- ☐ Georgia
- ☐ Hawaii
- ☐ Idaho
- ☐ Illinois
- ☐ Indiana
- ☐ Iowa
- ☐ Kansas
- ☐ Kentucky
- ☐ Louisiana
- ☐ Maryland
- ☐ Massachusetts
- ☐ Minnesota

Progress to target price



Revenue Measure and Sum of sales by category

Revenue Measure Sum of sales



Revenue Measure by category and sub\_category



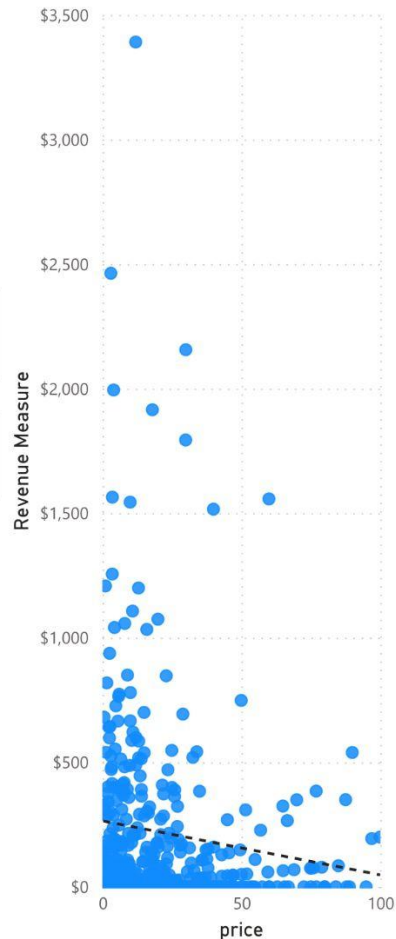
Revenue Measure by MonthNo and Year

Year 2017 2018

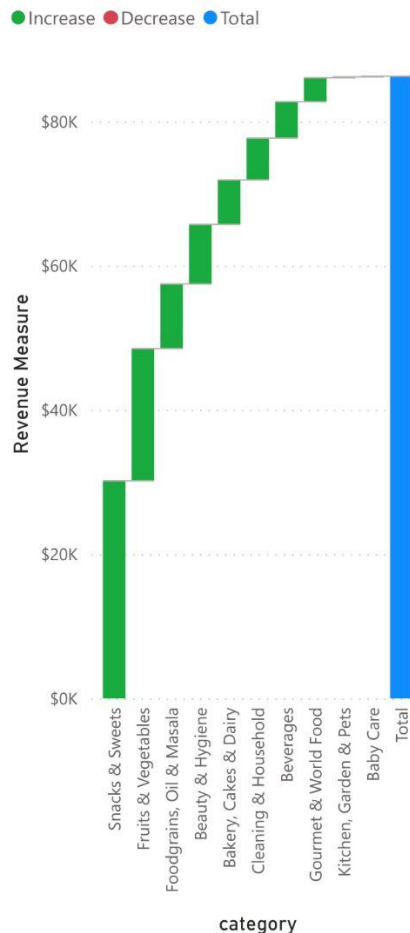




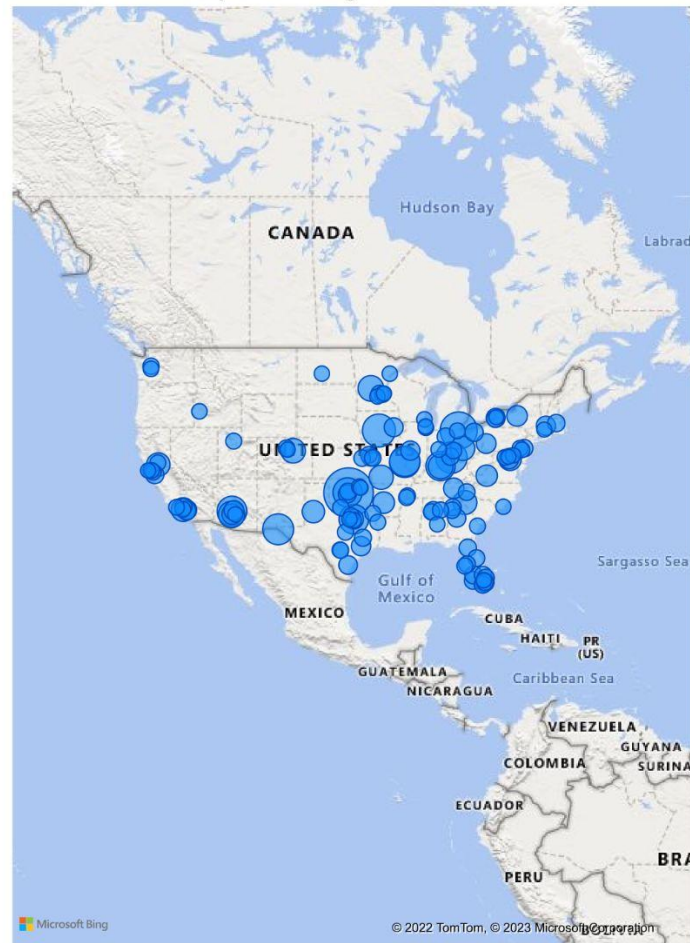
Revenue Measure by price



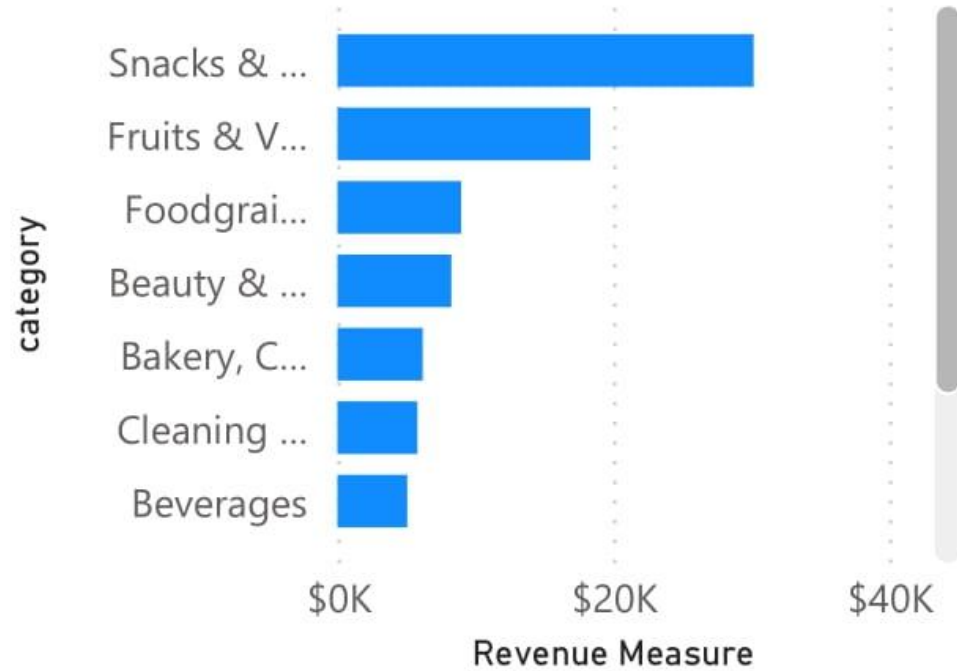
Revenue Measure by category



Revenue Measure by lat and long



## Revenue Measure by category





| order id | order date | Revenue Measure | state                | city                      |
|----------|------------|-----------------|----------------------|---------------------------|
| 3        | 1/2/2017   | \$36.25         | Ohio                 | Toledo                    |
| 10       | 1/2/2017   | \$0.90          | District of Columbia | Washington                |
| 11       | 1/2/2017   | \$0.00          | Iowa                 | Des Moines                |
| 15       | 1/2/2017   | \$0.00          | Arkansas             | Hot Springs National Park |
| 21       | 1/2/2017   | \$0.00          | California           | San Jose                  |
| 22       | 1/2/2017   | \$0.00          | Georgia              | Alpharetta                |
| 23       | 1/2/2017   | \$0.00          | Massachusetts        | Springfield               |
| 34       | 1/2/2017   | \$0.00          | Tennessee            | Knoxville                 |
| 36       | 1/2/2017   | \$0.00          | North Carolina       | Asheville                 |
| 38       | 1/2/2017   | \$1.25          | Oklahoma             | Edmond                    |
| 41       | 1/2/2017   | \$0.00          | California           | San Francisco             |
| 42       | 1/2/2017   | \$0.00          | Oklahoma             | Tulsa                     |
| 47       | 1/2/2017   | \$0.00          | Indiana              | Fort Wayne                |
| 48       | 1/2/2017   | \$0.00          | Massachusetts        | Watertown                 |
| 49       | 1/3/2017   | \$0.00          | Missouri             | Kansas City               |
| Total    |            | \$18,334.76     |                      |                           |

\$18.33K

Revenue Measure

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# Thank You

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