

MS Access Project – Managing Superstore Sales Data:

Project Background: I downloaded an excel file of retail sales from Kaggle to analyze its records on various categories such as order date, ship date, customer name, category product name and location. Queries were useful in this project for performing calculations and run summary reports on specific goals. Once summarized these can be copied and pasted in MS Excel for further analysis.

Objective: In this project I have created 6 queries specifically in order to get the following results:

- The average sales amount made by customer segmentation.
- First class orders made in 2018.
- The number of times a customer has ordered products in 2016.
- The number of times an office supply product has been sold.
- The total sum of sales made by region.
- The total sum of sales made by state.

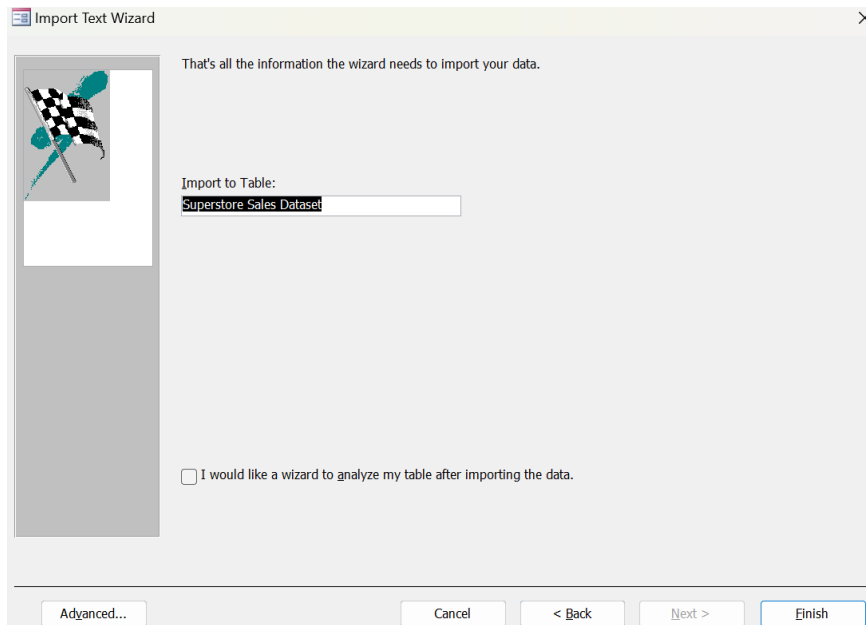
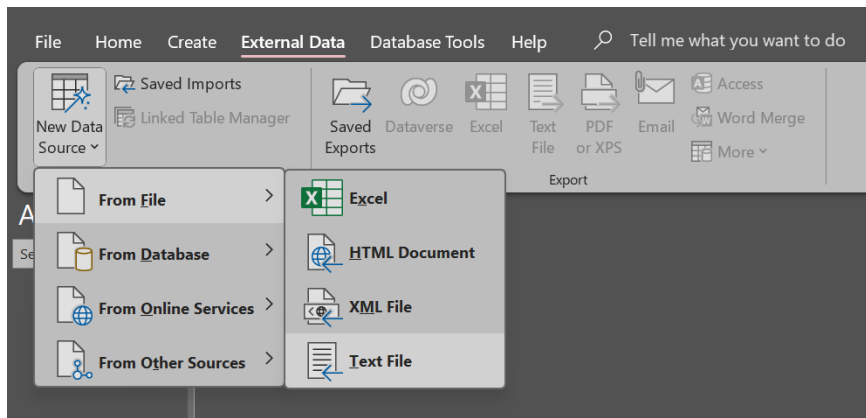
A	B	C	D	E	F	G	H	I	J	K	L	M
Row ID	Order ID	Order Date	Ship Date	Ship Mode	Customer ID	Customer Name	Segment	Country	City	State	Postal Code	Region
1	CA-2017-152156	11/8/2017	11/11/2017	Second Class	CG-12520	Claire Gute	Consumer	United States	Henderson	Kentucky	42420	South
2	CA-2017-152156	11/8/2017	11/11/2017	Second Class	CG-12520	Claire Gute	Consumer	United States	Henderson	Kentucky	42420	South
3	CA-2017-138688	6/12/2017	6/16/2017	Second Class	DV-13045	Darrin Van Huff	Corporate	United States	Los Angeles	California	90036	West
4	US-2016-108966	10/11/2016	10/18/2016	Standard Class	SO-20335	Sean O'Donnell	Consumer	United States	Fort Lauderdale	Florida	33311	South
5	US-2016-108966	10/11/2016	10/18/2016	Standard Class	SO-20335	Sean O'Donnell	Consumer	United States	Fort Lauderdale	Florida	33311	South
6	CA-2015-115812	6/9/2015	6/14/2015	Standard Class	BH-11710	Brosina Hoffman	Consumer	United States	Los Angeles	California	90032	West
7	CA-2015-115812	6/9/2015	6/14/2015	Standard Class	BH-11710	Brosina Hoffman	Consumer	United States	Los Angeles	California	90032	West
8	CA-2015-115812	6/9/2015	6/14/2015	Standard Class	BH-11710	Brosina Hoffman	Consumer	United States	Los Angeles	California	90032	West
9	CA-2015-115812	6/9/2015	6/14/2015	Standard Class	BH-11710	Brosina Hoffman	Consumer	United States	Los Angeles	California	90032	West
10	CA-2015-115812	6/9/2015	6/14/2015	Standard Class	BH-11710	Brosina Hoffman	Consumer	United States	Los Angeles	California	90032	West
11	CA-2015-115812	6/9/2015	6/14/2015	Standard Class	BH-11710	Brosina Hoffman	Consumer	United States	Los Angeles	California	90032	West
12	CA-2015-115812	6/9/2015	6/14/2015	Standard Class	BH-11710	Brosina Hoffman	Consumer	United States	Los Angeles	California	90032	West
13	CA-2018-114412	4/15/2018	4/20/2018	Standard Class	AA-10480	Andrew Allen	Consumer	United States	Concord	North Carolina	28027	South
14	CA-2017-161389	12/5/2017	12/10/2017	Standard Class	IM-15070	Irene Maddox	Consumer	United States	Seattle	Washington	98103	West
15	US-2016-118983	11/22/2016	11/26/2016	Standard Class	HP-14815	Harold Pawlan	Home Office	United States	Fort Worth	Texas	76106	Central
16	US-2016-118983	11/22/2016	11/26/2016	Standard Class	HP-14815	Harold Pawlan	Home Office	United States	Fort Worth	Texas	76106	Central

Superstore Sales Dataset X												
Row ID	Order ID	Order Date	Ship Date	Ship Mode	Customer ID	Customer Name	Segment	Country	City	State	Postal Code	Region
1	CA-2017-15215	11/8/2017	11/11/2017	Second Class	CG-12520	Claire Gute	Consumer	United States	Henderson	Kentucky	42420	South
2	CA-2017-15215	11/8/2017	11/11/2017	Second Class	CG-12520	Claire Gute	Consumer	United States	Henderson	Kentucky	42420	South
3	CA-2017-13868	6/12/2017	6/16/2017	Second Class	DV-13045	Darrin Van Huff	Corporate	United States	Los Angeles	California	90036	West
4	US-2016-10896	10/11/2016	10/18/2016	Standard Class	SO-20335	Sean O'Donnell	Consumer	United States	Fort Lauderdale	Florida	33311	South
5	US-2016-10896	10/11/2016	10/18/2016	Standard Class	SO-20335	Sean O'Donnell	Consumer	United States	Fort Lauderdale	Florida	33311	South
6	CA-2015-11581	6/9/2015	6/14/2015	Standard Class	BH-11710	Brosina Hoffman	Consumer	United States	Los Angeles	California	90032	West
7	CA-2015-11581	6/9/2015	6/14/2015	Standard Class	BH-11710	Brosina Hoffman	Consumer	United States	Los Angeles	California	90032	West
8	CA-2015-11581	6/9/2015	6/14/2015	Standard Class	BH-11710	Brosina Hoffman	Consumer	United States	Los Angeles	California	90032	West
9	CA-2015-11581	6/9/2015	6/14/2015	Standard Class	BH-11710	Brosina Hoffman	Consumer	United States	Los Angeles	California	90032	West
10	CA-2015-11581	6/9/2015	6/14/2015	Standard Class	BH-11710	Brosina Hoffman	Consumer	United States	Los Angeles	California	90032	West
11	CA-2015-11581	6/9/2015	6/14/2015	Standard Class	BH-11710	Brosina Hoffman	Consumer	United States	Los Angeles	California	90032	West
12	CA-2015-11581	6/9/2015	6/14/2015	Standard Class	BH-11710	Brosina Hoffman	Consumer	United States	Los Angeles	California	90032	West
13	CA-2018-11441	4/15/2018	4/20/2018	Standard Class	AA-10480	Andrew Allen	Consumer	United States	Concord	North Carolina	28027	South
14	CA-2017-16138	12/5/2017	12/10/2017	Standard Class	IM-15070	Irene Maddox	Consumer	United States	Seattle	Washington	98103	West
15	US-2016-11898	11/22/2016	11/26/2016	Standard Class	HP-14815	Harold Pawlan	Home Office	United States	Fort Worth	Texas	76106	Central
16	US-2016-11898	11/22/2016	11/26/2016	Standard Class	HP-14815	Harold Pawlan	Home Office	United States	Fort Worth	Texas	76106	Central
17	CA-2015-10589	11/11/2015	11/18/2015	Standard Class	PK-19075	Pete Kriz	Consumer	United States	Madison	Wisconsin	53706	Central
18	CA-2015-16716	5/13/2015	5/15/2015	Second Class	AG-10270	Alejandro Grov	Consumer	United States	West Jordan	Utah	84064	West
19	CA-2015-14333	8/27/2015	9/1/2015	Second Class	ZD-21925	Zuschuss Dona	Consumer	United States	San Francisco	California	94103	West
20	CA-2015-14333	8/27/2015	9/1/2015	Second Class	ZD-21925	Zuschuss Dona	Consumer	United States	San Francisco	California	94103	West
21	CA-2015-14333	8/27/2015	9/1/2015	Second Class	ZD-21925	Zuschuss Dona	Consumer	United States	San Francisco	California	94103	West

Record: 14 of 9800

Steps taken:

1. The first step in this project was import data into MS Access:



The screenshot shows the Microsoft Access database interface with the 'Superstore Sales Dataset' table open. The table contains 21 records with the following columns: Row ID, Order ID, Order Date, Ship Date, Ship Mode, Customer ID, Customer Name, and Segment.

Row ID	Order ID	Order Date	Ship Date	Ship Mode	Customer ID	Customer Name	Segment
1	CA-2017-15215	11/8/2017	11/11/2017	Second Class	CG-12520	Claire Gute	Consumer
2	CA-2017-15215	11/8/2017	11/11/2017	Second Class	CG-12520	Claire Gute	Consumer
3	CA-2017-13868	6/12/2017	6/16/2017	Second Class	DV-13045	Darrin Van Huf	Corporate
4	US-2016-10896	10/11/2016	10/18/2016	Standard Class	SO-20335	Sean O'Donnell	Consumer
5	US-2016-10896	10/11/2016	10/18/2016	Standard Class	SO-20335	Sean O'Donnell	Consumer
6	CA-2015-11581	6/9/2015	6/14/2015	Standard Class	BH-11710	Brosina Hoffma	Consumer
7	CA-2015-11581	6/9/2015	6/14/2015	Standard Class	BH-11710	Brosina Hoffma	Consumer
8	CA-2015-11581	6/9/2015	6/14/2015	Standard Class	BH-11710	Brosina Hoffma	Consumer
9	CA-2015-11581	6/9/2015	6/14/2015	Standard Class	BH-11710	Brosina Hoffma	Consumer
10	CA-2015-11581	6/9/2015	6/14/2015	Standard Class	BH-11710	Brosina Hoffma	Consumer
11	CA-2015-11581	6/9/2015	6/14/2015	Standard Class	BH-11710	Brosina Hoffma	Consumer
12	CA-2015-11581	6/9/2015	6/14/2015	Standard Class	BH-11710	Brosina Hoffma	Consumer
13	CA-2018-11441	4/15/2018	4/20/2018	Standard Class	AA-10480	Andrew Allen	Consumer
14	CA-2017-16138	12/5/2017	12/10/2017	Standard Class	IM-15070	Irene Maddox	Consumer
15	US-2016-11898	11/22/2016	11/26/2016	Standard Class	HP-14815	Harold Pawlan	Home Office
16	US-2016-11898	11/22/2016	11/26/2016	Standard Class	HP-14815	Harold Pawlan	Home Office
17	CA-2015-10589	11/11/2015	11/18/2015	Standard Class	PK-19075	Pete Kriz	Consumer
18	CA-2015-16716	5/13/2015	5/15/2015	Second Class	AG-10270	Alejandro Grov	Consumer
19	CA-2015-14333	8/27/2015	9/1/2015	Second Class	ZD-21925	Zuschuss Dona	Consumer
20	CA-2015-14333	8/27/2015	9/1/2015	Second Class	ZD-21925	Zuschuss Dona	Consumer
21	CA-2015-14333	8/27/2015	9/1/2015	Second Class	ZD-21925	Zuschuss Dona	Consumer

- Next I started creating queries and used SQL to summarize the imported dataset. The SELECT statement, clauses such as WHERE, GROUP BY, HAVING, and ORDER BY, as well as operators and attributes helped me summarize the following results:

The screenshot displays the Microsoft Access interface. The top ribbon shows the 'Create' tab, with options for 'Table', 'Table Design', 'SharePoint Lists', 'Query Wizard', and 'Query Design'. The 'Query Design' view is active, showing a query named 'Query1' based on the 'Superstore Sales Dataset'. The SQL view of the query is shown below the design view:

```
1 SELECT Segment, Category, Avg(Sales) AS [Average payment made by customer segmentation]
2 FROM [Superstore Sales Dataset]
3 GROUP BY Segment, Category;
```

The results of the query are displayed in a table below the SQL view. The table has three columns: 'Segment', 'Category', and 'Average payment made by customer segmentation'. The data is as follows:

Segment	Category	Average payment made by customer segmentation
Consumer	Furniture	354.708378774017
Consumer	Office Supplies	116.976760416667
Consumer	Technology	428.431266025641
Corporate	Furniture	350.830735350319
Corporate	Office Supplies	125.704170499159
Corporate	Technology	450.261691881919
Home Office	Furniture	337.928896078431
Home Office	Office Supplies	115.691831119544
Home Office	Technology	544.484689552239

First Class Orders Made in 2018					
1	SELECT [Order ID], [Order Date], [Ship Date], [Ship Mode], [Customer Name], [Product Name], Sales				
2	FROM [Superstore Sales Dataset]				
3	WHERE [Ship Mode] = "First Class" AND [Order Date] LIKE "*2018*"				
4	ORDER BY [Order Date];				
5					

Order ID	Order Date	Ship Date	Ship Mode	Customer Name	Product Name	Sales
CA-2018-15446	1/1/2018	1/2/2018	First Class	Dennis Pardue	Wilson Jones Easy Flow II Sheet Lifters	3.6
US-2018-10613	1/14/2018	1/16/2018	First Class	Tracy Poddar	Imation 8GB Mini TravelDrive USB 2.0 Flash Drive	169.064
US-2018-10613	1/14/2018	1/16/2018	First Class	Tracy Poddar	Mobile Personal File Cube	168.624
CA-2018-13877	1/14/2018	1/15/2018	First Class	Rob Beeghly	Sannysis Cute Owl Design Soft Skin Case Cover for Samsung Galaxy S4	7.92
CA-2018-13877	1/14/2018	1/15/2018	First Class	Rob Beeghly	Tyvek Top-Opening Peel & Seal Envelopes, Plain White	21.744
CA-2018-16775	1/15/2018	1/18/2018	First Class	Robert Waldorf	Honeywell Enviracaire Portable HEPA Air Cleaner for 17' x 22' Room	1924.16
US-2018-10466	1/15/2018	1/18/2018	First Class	Tim Brockman	Logitech 910-002974 M325 Wireless Mouse for Web Scrolling	47.984
US-2018-10466	1/15/2018	1/18/2018	First Class	Tim Brockman	Maxell 74 Minute CDR, 10/Pack	62.592
US-2018-10466	1/15/2018	1/18/2018	First Class	Tim Brockman	Acco D-Ring Binder w/DubLock	4.276
CA-2018-16775	1/15/2018	1/18/2018	First Class	Robert Waldorf	Belkin F9M820V08 8 Outlet Surge	34.384
US-2018-10466	1/15/2018	1/18/2018	First Class	Tim Brockman	Wilson Jones Ledger-Size, Piano-Hinge Binder, 2", Blue	32.784
CA-2018-11348	1/2/2018	1/4/2018	First Class	Aaron Smayling	Cisco CP-7937G Unified IP Conference Station Phone	695.7
CA-2018-11348	1/2/2018	1/4/2018	First Class	Aaron Smayling	Avery 3 1/2" Diskette Storage Pages, 10/Pack	15.66
CA-2018-11348	1/2/2018	1/4/2018	First Class	Aaron Smayling	Avery Recycled Flexi-View Covers for Binding Systems	28.854
CA-2018-15207	1/20/2018	1/21/2018	First Class	Maris LaWare	Avery File Folder Labels	11.52
CA-2018-14514	1/23/2018	1/25/2018	First Class	Matt Connell	Balt Solid Wood Rectangular Table	210.98
CA-2018-16409	1/26/2018	1/27/2018	First Class	Claire Gute	SimpliFile Personal File, Black Granite, 15w x 6-15/16d x 11-1/4h	18.16
CA-2018-14533	1/29/2018	2/1/2018	First Class	Bryan Davis	Premium Writing Pencils, Soft, #2 by Central Association for the Blind	4.768
CA-2018-15727	1/30/2018	2/2/2018	First Class	Sam Zeldin	Mitel 5320 IP Phone VoIP phone	604.768
CA-2018-15936	1/7/2018	1/10/2018	First Class	Bart Watters	Lexmark MX611dhe Monochrome Laser Printer	3059.982
CA-2018-11515	1/8/2018	1/11/2018	First Class	Ricardo Sperren	Balt Solid Wood Round Tables	892.98

Number of times a customer has ordered products in 2016					
1	SELECT [Order Date], [Ship Date], [Customer Name], COUNT([Customer Name]) AS [Number of Times Customer has Ordered a product]				
2	FROM [Superstore Sales Dataset]				
3	GROUP BY [Order Date], [Ship Date], [Customer Name]				
4	HAVING [Order Date] LIKE "*2016*"				
5	ORDER BY [Order Date];				
6					

Order Date	Ship Date	Customer Name	Number of Times Customer has Ordered a product
1/10/2016	1/15/2016	Michael Moore	1
1/12/2016	1/17/2016	Cindy Schnelling	4
1/12/2016	1/18/2016	Yana Sorensen	1
1/13/2016	1/15/2016	Karen Seio	1
1/13/2016	1/17/2016	Philip Brown	3
1/17/2016	1/22/2016	Scott Cohen	1
1/17/2016	1/23/2016	Amy Hunt	1
1/17/2016	1/24/2016	Joni Sundaresam	1
1/19/2016	1/23/2016	Paul MacIntyre	2
1/2/2016	1/4/2016	Claudia Bergmann	3
1/2/2016	1/9/2016	Victoria Wilson	5
1/23/2016	1/27/2016	Carl Weiss	2
1/24/2016	1/28/2016	Cyra Reiten	1
1/26/2016	2/1/2016	Elizabeth Moffitt	1
1/27/2016	1/29/2016	Sean Christensen	1
1/27/2016	1/29/2016	Seth Vernon	3
1/28/2016	1/31/2016	Joseph Holt	1
1/3/2016	1/8/2016	Amy Hunt	3
1/3/2016	1/8/2016	Sylvia Foulston	1
1/30/2016	2/4/2016	Jeremy Pistek	1
1/30/2016	2/6/2016	Charles Crestani	2

Number of times an office supply product has been sold

```

1 SELECT Category, [Sub-Category], [Product Name], Count([Product Name]) AS [Number of Times Sold]
2 FROM [Superstore Sales Dataset]
3 GROUP BY Category, [Sub-Category], [Product Name]
4 HAVING Category LIKE "Supply";

```

Number of times an office supply product has been sold

Category	Sub-Category	Product Name	Number of Times Sold
Office Supplies	Appliances	1.7 Cubic Foot Compact "Cube" Office Refrigerators	6
Office Supplies	Appliances	3.6 Cubic Foot Counter Height Office Refrigerator	5
Office Supplies	Appliances	3M Office Air Cleaner	2
Office Supplies	Appliances	3M Replacement Filter for Office Air Cleaner for 20' x 33' Room	4
Office Supplies	Appliances	Acco 6 Outlet Guardian Basic Surge Suppressor	2
Office Supplies	Appliances	Acco 6 Outlet Guardian Premium Plus Surge Suppressor	6
Office Supplies	Appliances	Acco 6 Outlet Guardian Premium Surge Suppressor	8
Office Supplies	Appliances	Acco 6 Outlet Guardian Standard Surge Suppressor	5
Office Supplies	Appliances	Acco 7-Outlet Masterpiece Power Center, Wihtout Fax/Phone Line Protection	6
Office Supplies	Appliances	Acco Six-Outlet Power Strip, 4' Cord Length	8
Office Supplies	Appliances	Acco Smartsocket Color-Coded Six-Outlet AC Adapter Model Surge Protectors	4
Office Supplies	Appliances	Acco Smartsocket Table Surge Protector, 6 Color-Coded Adapter Outlets	3
Office Supplies	Appliances	APC 7 Outlet Network SurgeArrest Surge Protector	8
Office Supplies	Appliances	Avanti 1.7 Cu. Ft. Refrigerator	4
Office Supplies	Appliances	Avanti 4.4 Cu. Ft. Refrigerator	7
Office Supplies	Appliances	Belkin 325VA UPS Surge Protector, 6'	4
Office Supplies	Appliances	Belkin 5 Outlet SurgeMaster Power Centers	10
Office Supplies	Appliances	Belkin 6 Outlet Metallic Surge Strip	9
Office Supplies	Appliances	Belkin 7 Outlet SurgeMaster II	3
Office Supplies	Appliances	Belkin 7 Outlet SurgeMaster Surge Protector with Phone Protection	1
Office Supplies	Appliances	Belkin 7-Outlet SurgeMaster Home Series	4

Record: 1 of 1057
No Filter
Search

Total Sales by Region	
1	SELECT Region, Sum(Sales) AS [Total Sales by Region]
2	FROM [Superstore Sales Dataset]
3	GROUP BY Region;
4	
Region	Total Sales by Region
Central	492646.9132
East	669518.725999998
South	389151.459
West	710219.6845

Total Sales by State

✕

1

SELECT State, Region, Sum(Sales) AS [Total Sales by State]

2

FROM [Superstore Sales Dataset]

3

GROUP BY State, Region

4

ORDER BY Region, State;

5

Total Sales by State

✕

	State	Region	Total Sales by State
	Illinois	Central	79236.5169999999
	Indiana	Central	48718.4
	Iowa	Central	4443.56
	Kansas	Central	2914.31
	Michigan	Central	76136.074
	Minnesota	Central	29863.15
	Missouri	Central	22205.15
	Nebraska	Central	7464.93
	North Dakota	Central	919.91
	Oklahoma	Central	19683.39
	South Dakota	Central	1315.56
	Texas	Central	168572.5322
	Wisconsin	Central	31173.43
	Connecticut	East	13384.357
	Delaware	East	27322.999
	District of Colur	East	2865.02
	Maine	East	1270.53
	Maryland	East	23705.523
	Massachusetts	East	28634.434
	New Hampshire	East	7292.524
	New Jersey	East	34610.972

Record: 1 of 49

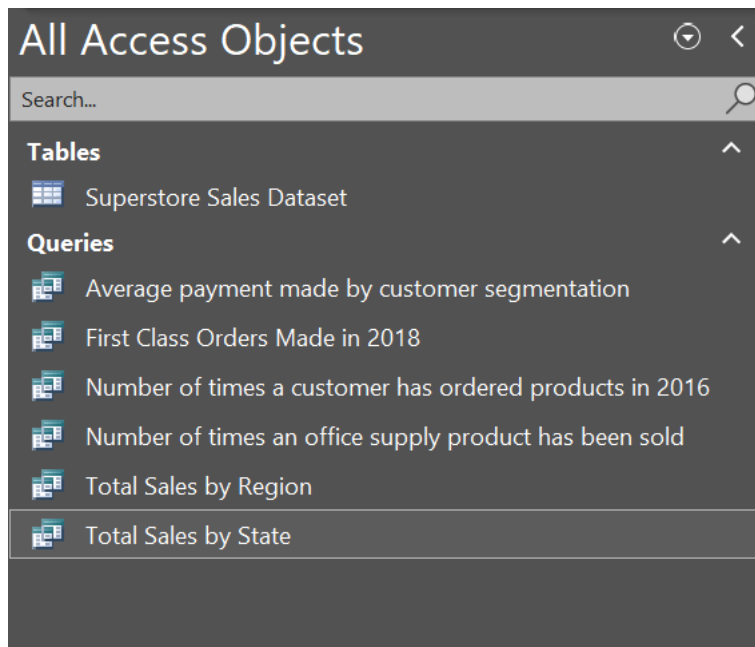
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Search

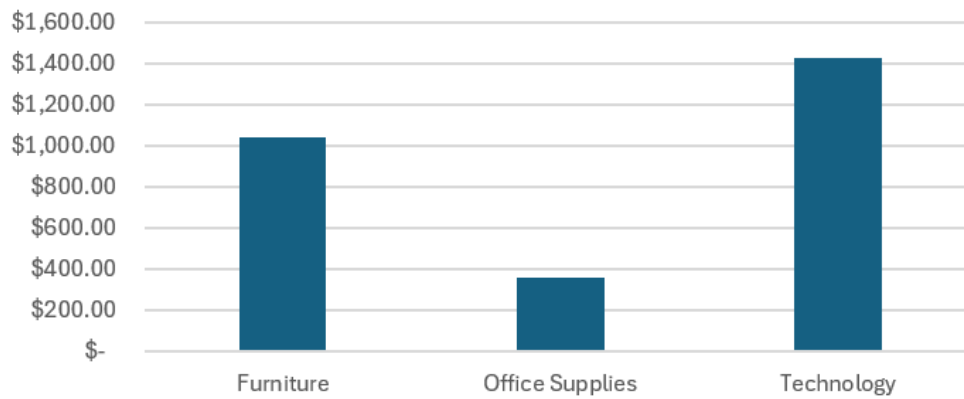


3. As a final step I copied these sheets and pasted them in MS Excel to create charts. Doing this allowed me to visualize this project even further:

-  Average sales amount made by customer segmentation.xlsx
-  First class orders made in 2018.xlsx
-  Number of times a customer has ordered products in 2016.xlsx
-  Number of times an office supply product has been sold.xlsx
-  Total Sales by Region.xlsx
-  Total Sales by State.xlsx

Sum of average sales amount made by customer segmentation

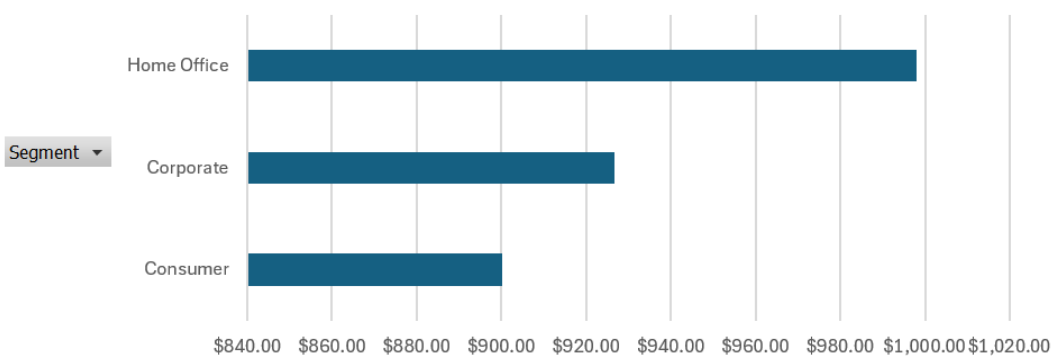
Average sales amount made by Category



Category ▾

Sum of Average sales amount made by customer segmentation

Average sales amount made by customer segmentation



Segment ▾

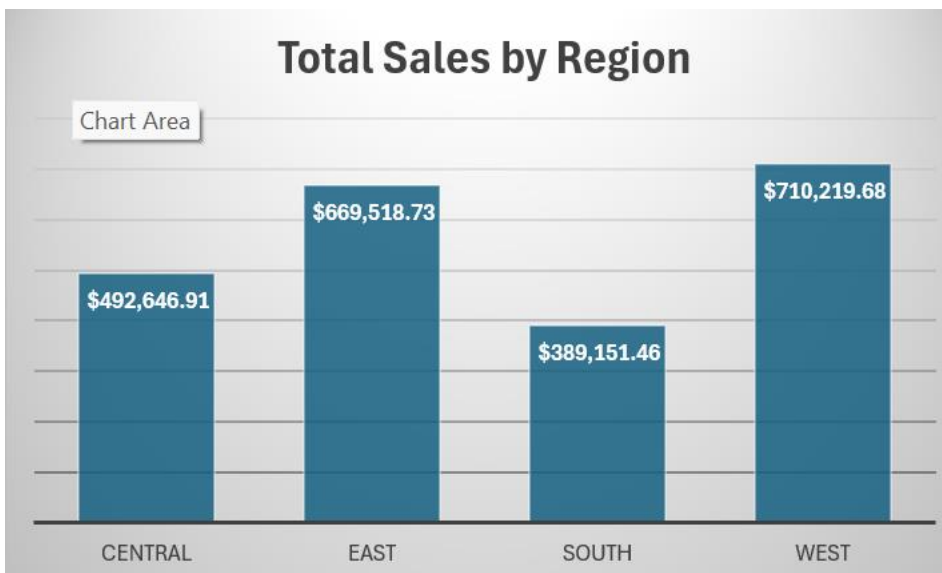
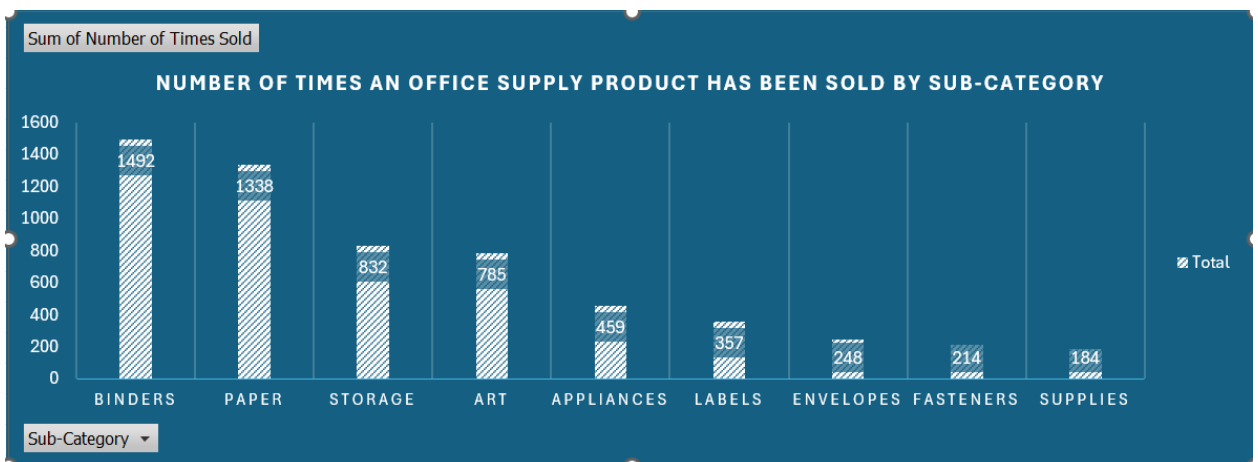
Count of Sales

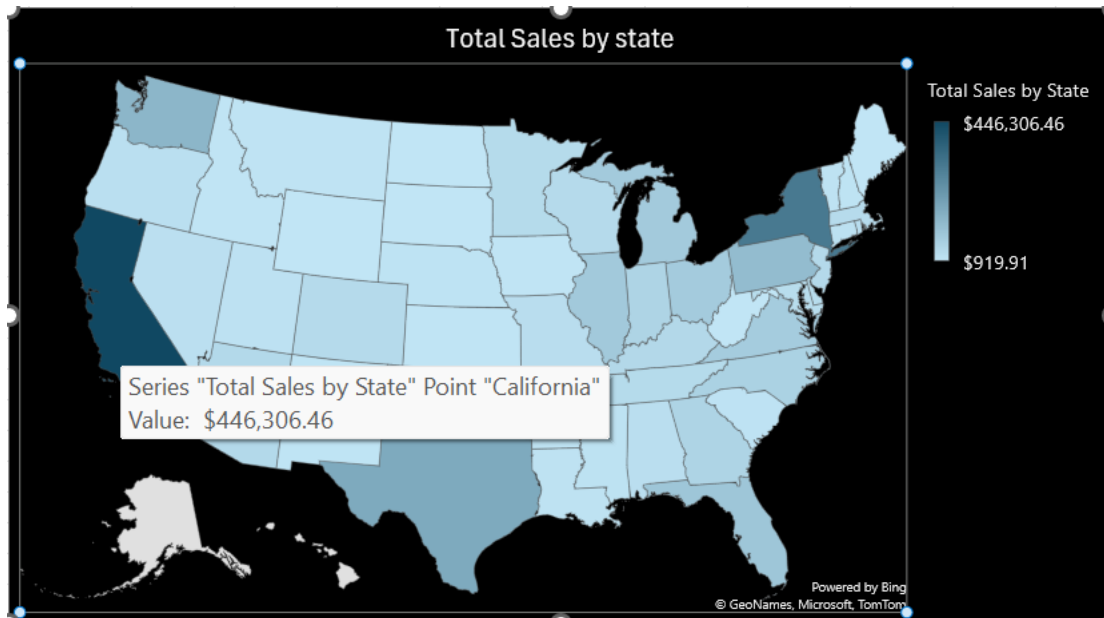
Count of first class orders made in 2018



Months (Order Date) ▾ Days (Order Date) ▾ Order Date ▾

+ -





4. By analyzing these charts I was able to determine:

- The average sales amount in the technology sector was the highest, compared to furniture and office supplies,
- The average sales amount in the consumer segment was the lowest, compared to home office and corporate,
- September was the month with the highest count of first-class orders in 2018,
- The 3 top customers that have made orders most often in 2016 were Peter Fuller, Sung Pak and Matt Abelman,
- The office supply products that have been sold the most were in the binders sub-category,
- The total sales amount in the West region was highest, while South was the lowest,
- The state with highest sales amount was California (with \$446,306.46).

References:

- <https://www.kaggle.com/datasets/rohitsahoo/sales-forecasting>