

Power BI Assignment 2 - DAX & Data Visualisation

*Description below respective screenshots attached.

E-Commerce Sales Analysis

Calculated Columns:

- 1) Add a Calculated Column in the Order Details table that combines the 'Category' and 'Sub Category' columns into a single 'Category Type'.

DAX Syntax: Category Type = 'Order Details'[Category]&" "&'Order Details'[Sub-Category].

The screenshot shows the Power BI interface with the DAX formula bar containing: `1 Category Type = 'Order Details'[Category]&" "&'Order Details'[Sub-Category]`. The 'Data' pane on the right shows the 'Category Type' column selected. The table preview below shows the following data:

Order ID	Amount	Profit	Quantity	Category	Sub-Category	Category Type
B-25601	\$1,275	-1148	7	Furniture	Bookcases	Furniture Bookcases
B-25601	\$8	-2	3	Clothing	Hankerchief	Clothing Hankerchief
B-25601	\$66	-12	5	Clothing	Stole	Clothing Stole
B-25601	\$80	-56	4	Electronics	Electronic Games	Electronics Electronic Games
B-25602	\$2,617	1151	4	Electronics	Phones	Electronics Phones
B-25602	\$119	-5	8	Clothing	Saree	Clothing Saree
B-25602	\$561	212	3	Clothing	Saree	Clothing Saree
B-25602	\$168	-111	2	Electronics	Phones	Electronics Phones
B-25602	\$424	-272	5	Electronics	Phones	Electronics Phones
B-25603	\$180	5	3	Clothing	Trousers	Clothing Trousers
B-25603	\$193	-166	3	Clothing	Saree	Clothing Saree
B-25603	\$12	1	2	Clothing	Hankerchief	Clothing Hankerchief
B-25603	\$116	16	4	Clothing	Stole	Clothing Stole
B-25603	\$107	36	6	Clothing	Stole	Clothing Stole
B-25603	\$1,355	-60	5	Clothing	Trousers	Clothing Trousers
B-25603	\$38	18	1	Clothing	Kurti	Clothing Kurti
B-25603	\$24	-30	1	Furniture	Chairs	Furniture Chairs
B-25604	\$157	5	9	Clothing	Saree	Clothing Saree
B-25604	\$65	17	2	Clothing	T-shirt	Clothing T-shirt
B-25605	\$75	0	7	Clothing	Saree	Clothing Saree
B-25606	\$87	4	2	Clothing	Shirt	Clothing Shirt

Table: Order Details (1,500 rows) Column: Category Type (17 distinct values)

- 2) Calculate Revenue per Order in Order Details Table: Create a calculated column in the Order Details table to compute the revenue per order.

DAX Syntax: Revenue = 'Order Details'[Amount]*'Order Details'[Quantity]

The screenshot shows the Power BI interface with the DAX formula bar containing: `1 Revenue = 'Order Details'[Amount]*'Order Details'[Quantity]`. The 'Data' pane on the right shows the 'Revenue' column selected. The table preview below shows the following data:

Order ID	Amount	Profit	Quantity	Category	Sub-Category	Category Type	Revenue
B-25601	\$1,275	-1148	7	Furniture	Bookcases	Furniture Bookcases	\$8,925
B-25601	\$8	-2	3	Clothing	Hankerchief	Clothing Hankerchief	\$24
B-25601	\$66	-12	5	Clothing	Stole	Clothing Stole	\$330
B-25601	\$80	-56	4	Electronics	Electronic Games	Electronics Electronic Games	\$320
B-25602	\$2,617	1151	4	Electronics	Phones	Electronics Phones	\$10,468
B-25602	\$119	-5	8	Clothing	Saree	Clothing Saree	\$952
B-25602	\$561	212	3	Clothing	Saree	Clothing Saree	\$1,683
B-25602	\$168	-111	2	Electronics	Phones	Electronics Phones	\$336
B-25602	\$424	-272	5	Electronics	Phones	Electronics Phones	\$2,120
B-25603	\$180	5	3	Clothing	Trousers	Clothing Trousers	\$540
B-25603	\$193	-166	3	Clothing	Saree	Clothing Saree	\$579
B-25603	\$12	1	2	Clothing	Hankerchief	Clothing Hankerchief	\$24
B-25603	\$116	16	4	Clothing	Stole	Clothing Stole	\$464
B-25603	\$107	36	6	Clothing	Stole	Clothing Stole	\$642
B-25603	\$1,355	-60	5	Clothing	Trousers	Clothing Trousers	\$6,775
B-25603	\$38	18	1	Clothing	Kurti	Clothing Kurti	\$38
B-25603	\$24	-30	1	Furniture	Chairs	Furniture Chairs	\$24
B-25604	\$157	5	9	Clothing	Saree	Clothing Saree	\$1,413
B-25604	\$65	17	2	Clothing	T-shirt	Clothing T-shirt	\$130
B-25605	\$75	0	7	Clothing	Saree	Clothing Saree	\$525
B-25606	\$87	4	2	Clothing	Shirt	Clothing Shirt	\$174

Table: Order Details (1,500 rows) Column: Revenue (845 distinct values)

- 3) Add a calculated column named 'Sales Category' in the Order Details table that categorises each order as 'Above Average' or 'Below Average' based on the Amount value.

DAX Syntax: Sales Category = IF('Order Details'[Amount]>1500," Above Average," Below Average").

(Remarks: Amount value spread between \$4.00 and \$5749.00; therefore, taking the average value as \$1500, since based on the consideration of sub-category items).

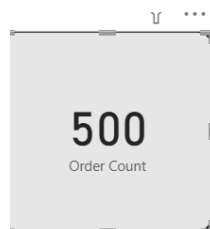
1 Sales Category = IF('Order Details'[Amount]>1500, "Above Average", "Below Average")

Order ID	Amount	Profit	Quantity	Category	Sub-Category	Category Type	Revenue	Sales Category
B-25601	\$1,275	-1148	7	Furniture	Bookcases	Furniture Bookcases	\$8,925	Below Average
B-25601	\$8	-2	3	Clothing	Hankchief	Clothing Hankchief	\$24	Below Average
B-25601	\$66	-12	5	Clothing	Stole	Clothing Stole	\$330	Below Average
B-25601	\$80	-56	4	Electronics	Electronic Games	Electronics Electronic Games	\$320	Below Average
B-25602	\$2,617	1151	4	Electronics	Phones	Electronics Phones	\$10,468	Above Average
B-25602	\$119	-5	8	Clothing	Saree	Clothing Saree	\$952	Below Average
B-25602	\$561	212	3	Clothing	Saree	Clothing Saree	\$1,683	Below Average
B-25602	\$168	-111	2	Electronics	Phones	Electronics Phones	\$336	Below Average
B-25602	\$424	-272	5	Electronics	Phones	Electronics Phones	\$2,120	Below Average
B-25603	\$180	5	3	Clothing	Trousers	Clothing Trousers	\$540	Below Average
B-25603	\$193	-166	3	Clothing	Saree	Clothing Saree	\$579	Below Average
B-25603	\$12	1	2	Clothing	Hankchief	Clothing Hankchief	\$24	Below Average
B-25603	\$116	16	4	Clothing	Stole	Clothing Stole	\$464	Below Average
B-25603	\$107	36	6	Clothing	Stole	Clothing Stole	\$642	Below Average
B-25603	\$1,355	-60	5	Clothing	Trousers	Clothing Trousers	\$6,775	Below Average
B-25603	\$38	18	1	Clothing	Kurti	Clothing Kurti	\$38	Below Average
B-25603	\$24	-30	1	Furniture	Chairs	Furniture Chairs	\$24	Below Average
B-25604	\$157	5	9	Clothing	Saree	Clothing Saree	\$1,413	Below Average
B-25604	\$65	17	2	Clothing	T-shirt	Clothing T-shirt	\$130	Below Average
B-25605	\$75	0	7	Clothing	Saree	Clothing Saree	\$525	Below Average
B-25606	\$87	4	2	Clothing	Shirt	Clothing Shirt	\$174	Below Average

Table: Order Details (1,500 rows) Column: Sales Category (2 distinct values)

- 4) Define a measure to count the total number of orders in the Order Details table.

DAX Syntax: Order Count = DISTINCTCOUNT('List of Orders'[Order ID])



1 Order Count = DISTINCTCOUNT('List of Orders'[Order ID])

Order ID	Amount	Profit	Quantity	Category	Sub-Category	Category Type	Revenue	Sales Category
B-25602	\$561	212	3	Clothing	Saree	Clothing Saree	\$1,683	Below Average
B-25602	\$119	-5	8	Clothing	Saree	Clothing Saree	\$952	Below Average
B-25603	\$193	-166	3	Clothing	Saree	Clothing Saree	\$579	Below Average
B-25604	\$157	5	9	Clothing	Saree	Clothing Saree	\$1,413	Below Average
B-25605	\$75	0	7	Clothing	Saree	Clothing Saree	\$525	Below Average
B-25609	\$25	-5	4	Clothing	Saree	Clothing Saree	\$100	Below Average
B-25610	\$43	0	3	Clothing	Saree	Clothing Saree	\$129	Below Average
B-25611	\$160	-59	2	Clothing	Saree	Clothing Saree	\$320	Below Average
B-25613	\$1,603	0	9	Clothing	Saree	Clothing Saree	\$14,427	Above Average
B-25619	\$353	90	8	Clothing	Saree	Clothing Saree	\$2,824	Below Average
B-25622	\$534	0	3	Clothing	Saree	Clothing Saree	\$1,602	Below Average
B-25623	\$149	-87	4	Clothing	Saree	Clothing Saree	\$596	Below Average
B-25625	\$635	-349	5	Clothing	Saree	Clothing Saree	\$3,175	Below Average
B-25628	\$24	-9	4	Clothing	Saree	Clothing Saree	\$96	Below Average
B-25633	\$711	-8	4	Clothing	Saree	Clothing Saree	\$2,844	Below Average
B-25635	\$382	30	3	Clothing	Saree	Clothing Saree	\$1,146	Below Average
B-25636	\$637	113	5	Clothing	Saree	Clothing Saree	\$3,185	Below Average
B-25640	\$122	-47	4	Clothing	Saree	Clothing Saree	\$488	Below Average
B-25646	\$20	-8	2	Clothing	Saree	Clothing Saree	\$40	Below Average
B-25647	\$42	-6	4	Clothing	Saree	Clothing Saree	\$168	Below Average
B-25648	\$55	-26	4	Clothing	Saree	Clothing Saree	\$220	Below Average

Table: Order Details (1,500 rows, 1,500 filtered rows) Column: Order Count (0 distinct values, 0 filtered distinct values)

- 5) Create a measure to calculate the average profit for orders placed in Delhi

Average Profit Delhi = Calculate(AVERAGE('Order Details'[Profit]),'List of Orders'[State]="Delhi")



1 Average Profit Delhi = Calculate(AVERAGE('Order Details'[Profit]),'List of Orders'[State]="Delhi")

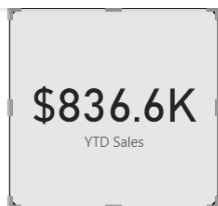
Order ID	Order Date	CustomerName	State	City
B-25627	Monday, April 23, 2018	Hitika	Madhya Pradesh	Indore
B-25637	Thursday, April 26, 2018	Ashmi	Madhya Pradesh	Indore
B-25645	Tuesday, May 1, 2018	Yaanvi	Madhya Pradesh	Indore
B-25651	Monday, May 7, 2018	Anurag	Madhya Pradesh	Indore
B-25655	Friday, May 11, 2018	Nida	Madhya Pradesh	Indore
B-25663	Saturday, May 19, 2018	Pournamasi	Madhya Pradesh	Indore
B-25680	Monday, June 4, 2018	Aayushi	Madhya Pradesh	Indore
B-25681	Monday, June 4, 2018	Bhawna	Madhya Pradesh	Indore
B-25685	Sunday, June 10, 2018	Sheetal	Madhya Pradesh	Indore
B-25688	Monday, June 11, 2018	Swetha	Madhya Pradesh	Indore
B-25690	Friday, June 15, 2018	Gunjan	Madhya Pradesh	Indore
B-25692	Sunday, June 17, 2018	Rashmi	Madhya Pradesh	Indore
B-25701	Tuesday, June 26, 2018	Maithilee	Madhya Pradesh	Indore
B-25703	Thursday, June 28, 2018	Ekta	Madhya Pradesh	Indore
B-25705	Saturday, June 30, 2018	Shweta	Madhya Pradesh	Indore
B-25708	Sunday, July 1, 2018	Kishwar	Madhya Pradesh	Indore
B-25709	Sunday, July 1, 2018	Aakanksha	Madhya Pradesh	Indore
B-25719	Thursday, July 12, 2018	Rashmi	Madhya Pradesh	Indore
B-25724	Thursday, July 19, 2018	Sheetal	Madhya Pradesh	Indore
B-25727	Sunday, July 22, 2018	Turumella	Madhya Pradesh	Indore
B-25734	Sunday, July 29, 2018	Pranav	Madhya Pradesh	Indore

Table: List of Orders (500 rows) Column: Average Profit Delhi (0 distinct values)

Update available (click to download)

- 6) Create Year-to-Date (YTD) Sales: Define a measure to calculate the total sales amount accumulated from the earliest order date up to each order date.

YTD Sales = TOTALYTD(sum('Order Details'[Revenue]),'List of Orders'[Order Date])

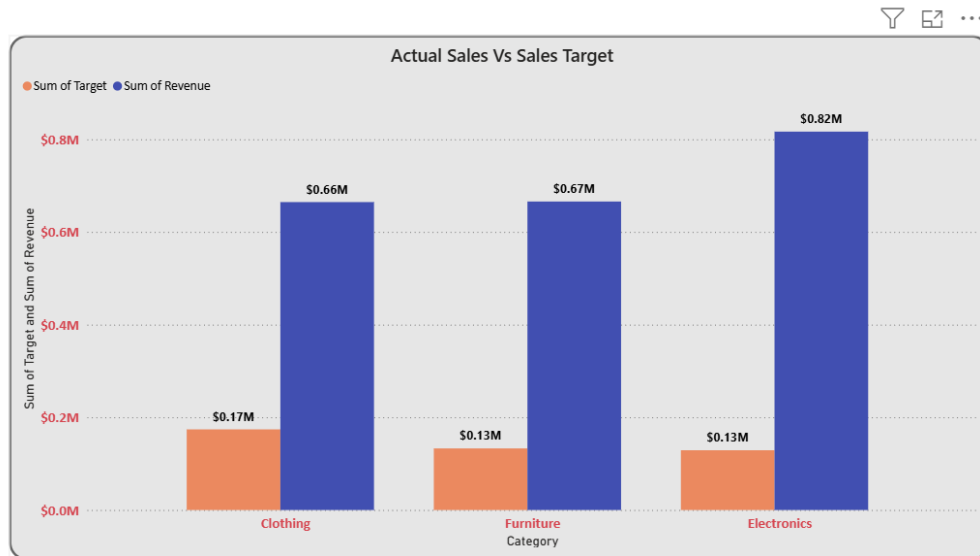


1 YTD Sales = TOTALYTD(sum('Order Details'[Revenue]),'List of Orders'[Order Date])

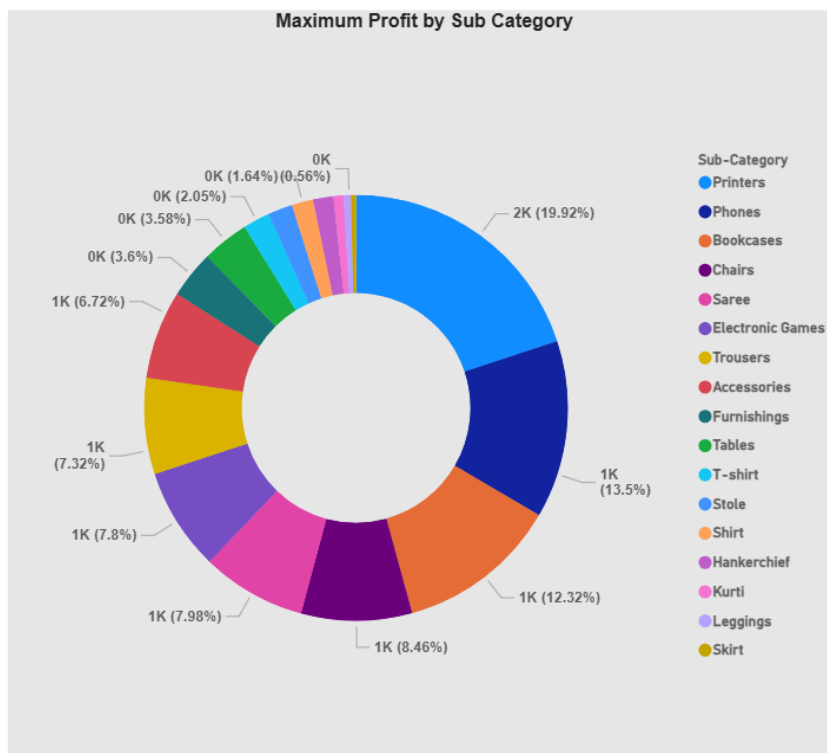
Order ID	Amount	Profit	Quantity	Category	Sub-Category	Category Type	Revenue	Sales Category
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B-25648	\$55	-26	4	Clothing	Saree	Clothing Saree	\$220	Below Average

Data Visualisation:

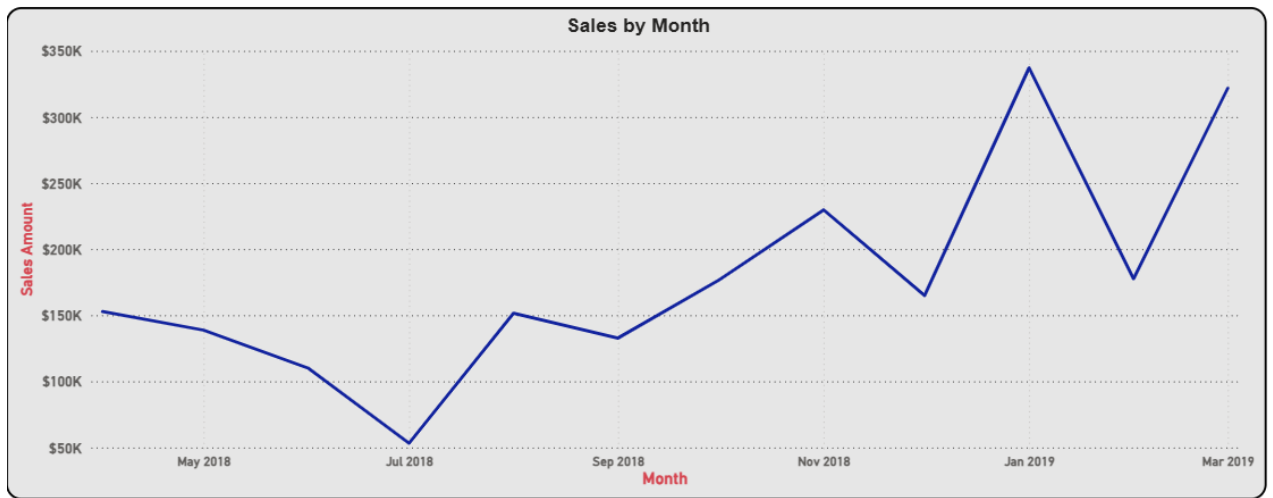
7) **Sales Target Achievement by Category:** Compare actual sales with sales targets by category using a *clustered column chart*.



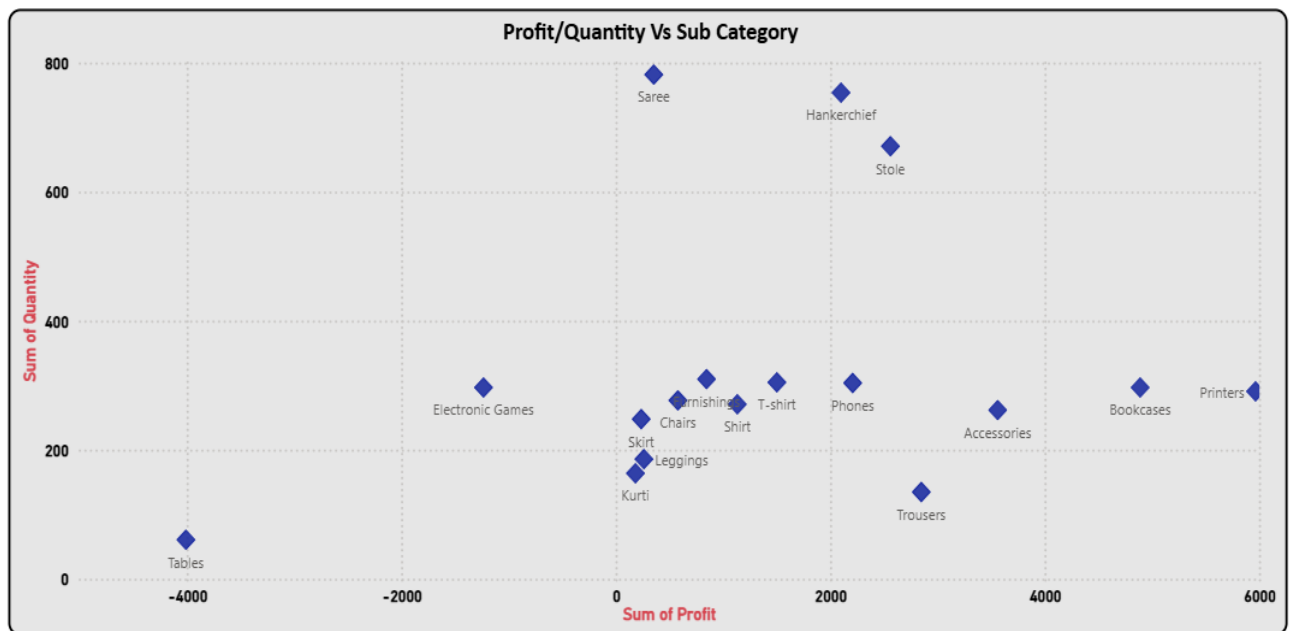
8) **Max Profit Margin by Sub-Category:** Analyse the maximum profit margin for each sub-category of products using a *donut chart*.



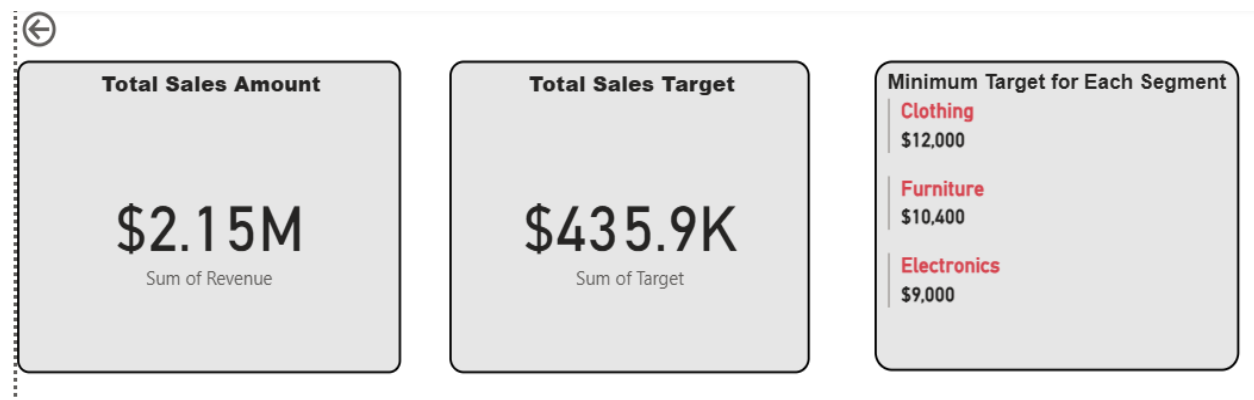
9) **Monthly Sales Trend:** Show the trend of monthly sales over time using a *line chart*.



10) Comparison of Profit and Quantity by Sub-Category: Compare the relationship between profit and quantity sold for different sub-categories using a *scatter chart*.



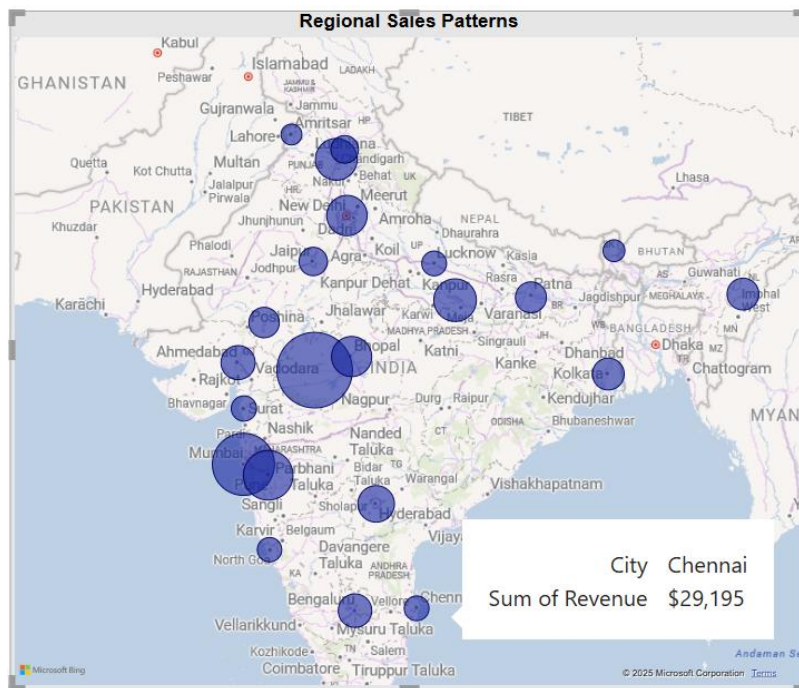
11) Comparison of Total Sales Amount and Target: Create *cards* to succinctly display the total sales amount alongside the sales target for quick comparison and analysis. Also, create a *multi-row card* to display the minimum target for each segment.



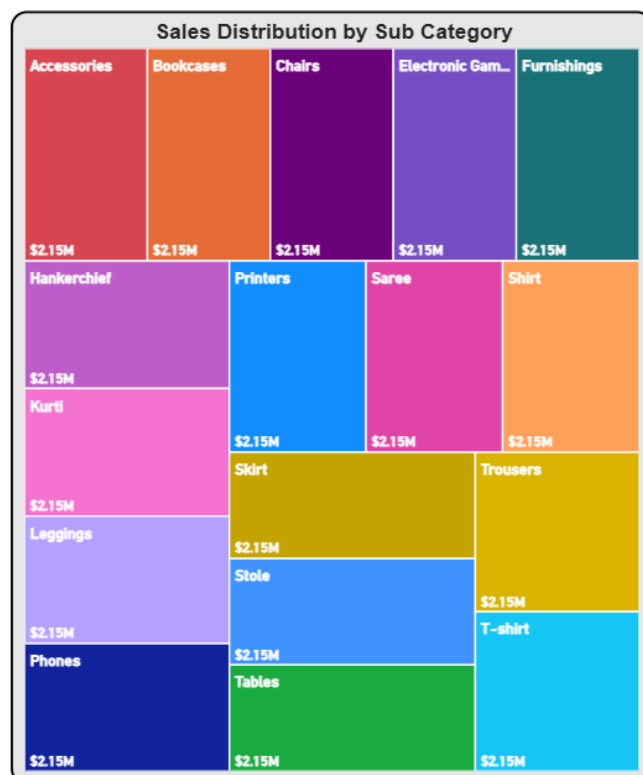
12) Sales Performance Matrix: Build a *matrix view* to analyse how actual sales compare to sales targets across different categories and months.

Actual Sales Vs Target by Categories						
Category Year	Clothing Sum of Revenue	Sum of Target	Electronics Sum of Revenue	Sum of Target	Furniture Sum of Revenue	Sum of Target
2018	\$455,537	\$174,000	\$507,122	\$129,000	\$347,612	\$132,900
April	\$67,649	\$174,000	\$43,637	\$129,000	\$41,541	\$132,900
May	\$44,338	\$174,000	\$61,765	\$129,000	\$32,664	\$132,900
June	\$40,292	\$174,000	\$43,234	\$129,000	\$26,489	\$132,900
July	\$13,060	\$174,000	\$22,939	\$129,000	\$17,145	\$132,900
August	\$59,474	\$174,000	\$47,050	\$129,000	\$44,990	\$132,900
September	\$58,752	\$174,000	\$33,543	\$129,000	\$40,422	\$132,900
October	\$55,979	\$174,000	\$69,151	\$129,000	\$51,533	\$132,900
November	\$72,687	\$174,000	\$92,824	\$129,000	\$64,274	\$132,900
December	\$43,306	\$174,000	\$92,979	\$129,000	\$28,554	\$132,900
2019	\$208,985	\$174,000	\$309,461	\$129,000	\$318,153	\$132,900
January	\$66,935	\$174,000	\$161,965	\$129,000	\$108,329	\$132,900
February	\$49,332	\$174,000	\$48,507	\$129,000	\$79,781	\$132,900
March	\$92,718	\$174,000	\$98,989	\$129,000	\$130,043	\$132,900
Total	\$664,522	\$174,000	\$816,583	\$129,000	\$665,765	\$132,900

13) Geographic Sales Analysis: Visualise total sales on a *map* by city to identify regional sales patterns.



14) Sales Distribution by Sub-Category: Represent the sales distribution across different sub-categories using a *treemap*.



15) Order Count Analysis by State: Create a *funnel chart* to visualise the distribution of order counts across different states.

