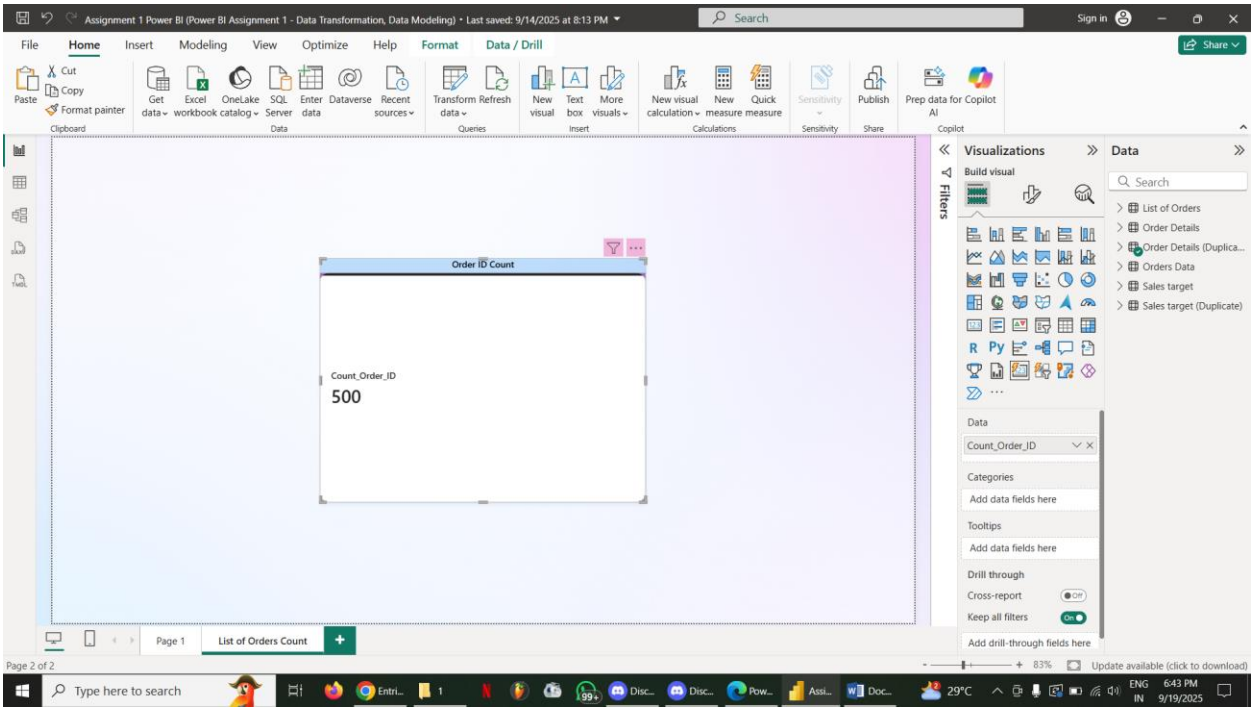
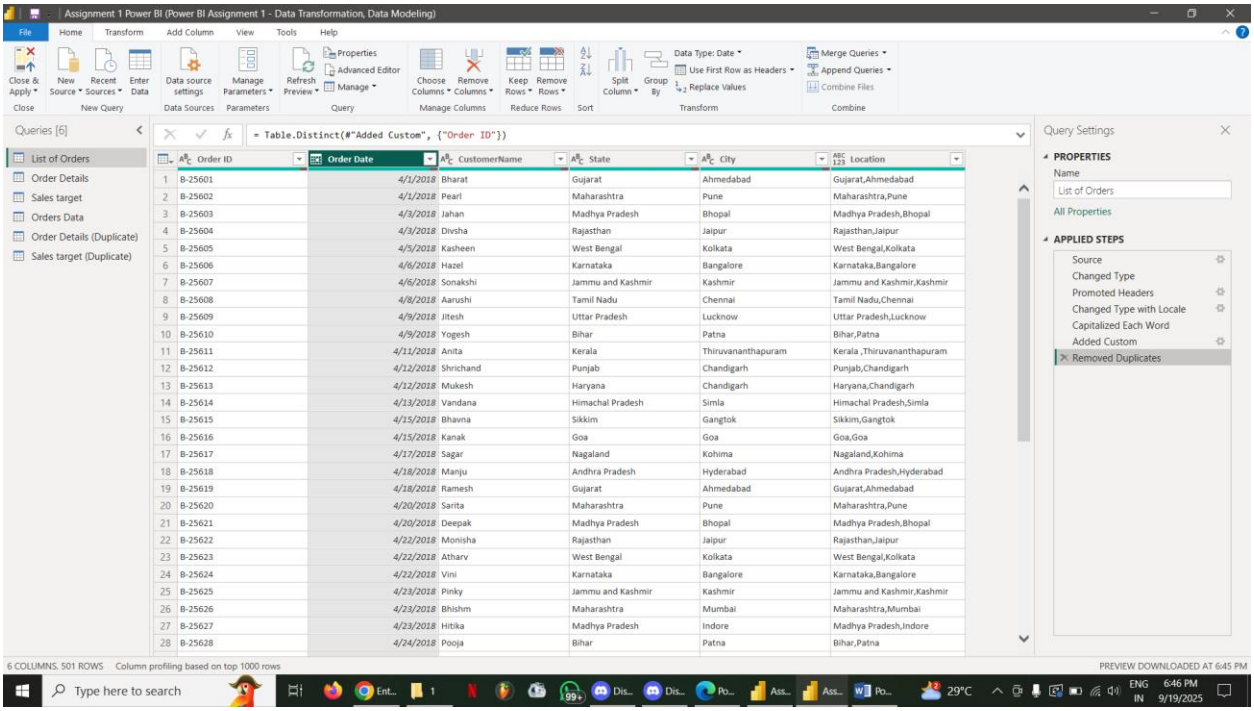
Power BI Assignment 1 - Data Transformation, Data Modeling

Data Transformation:

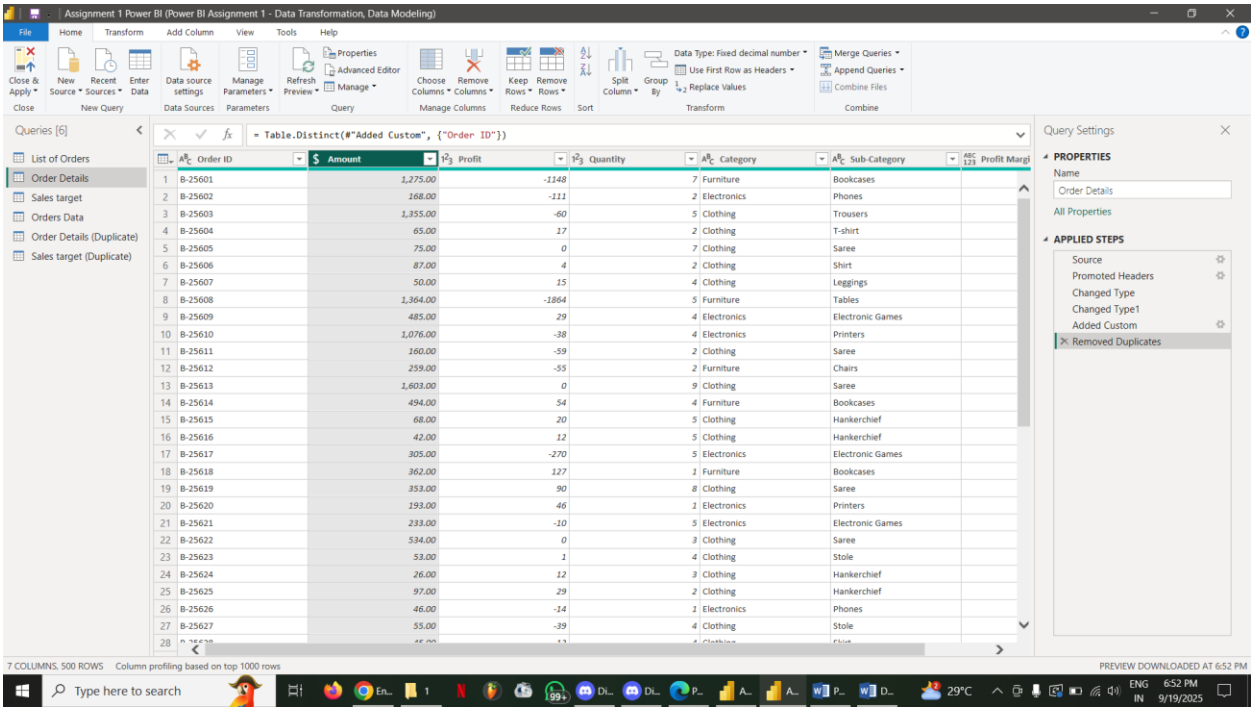
Restrict the "List of Orders" table to only the first 500 rows.

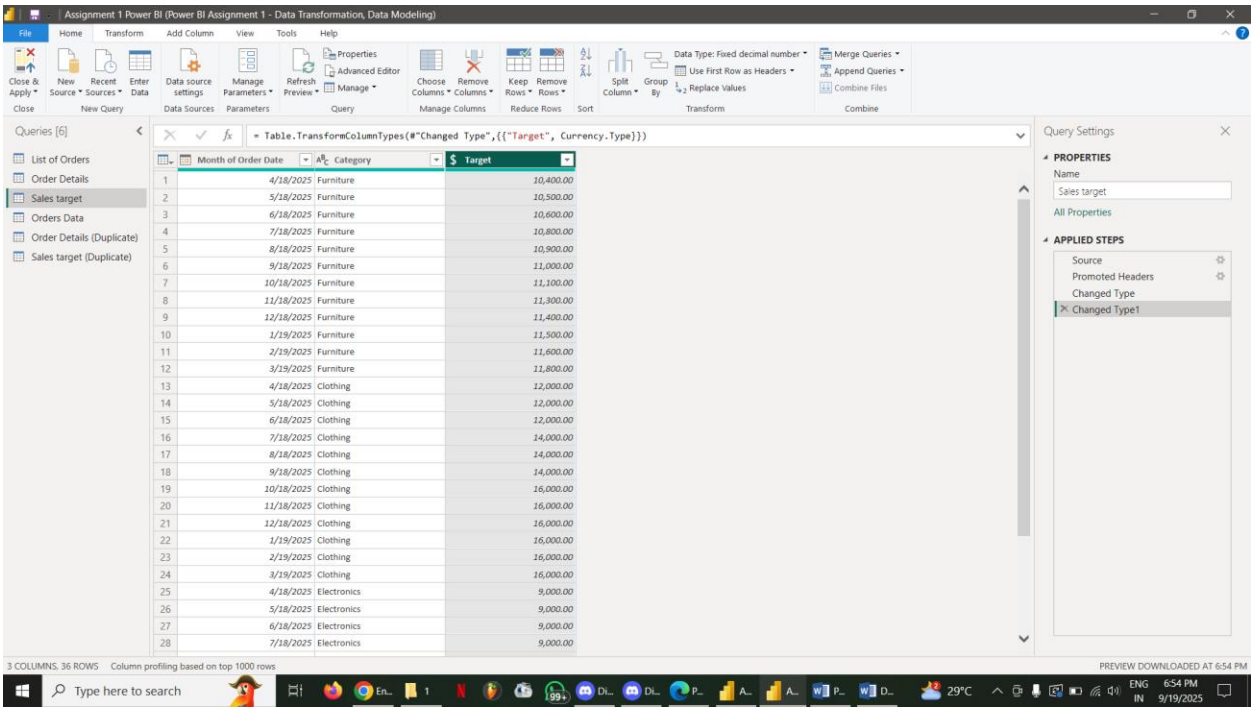


Ensure the “Order Date” column in the “List of Orders” table is set to data type 'Date'.

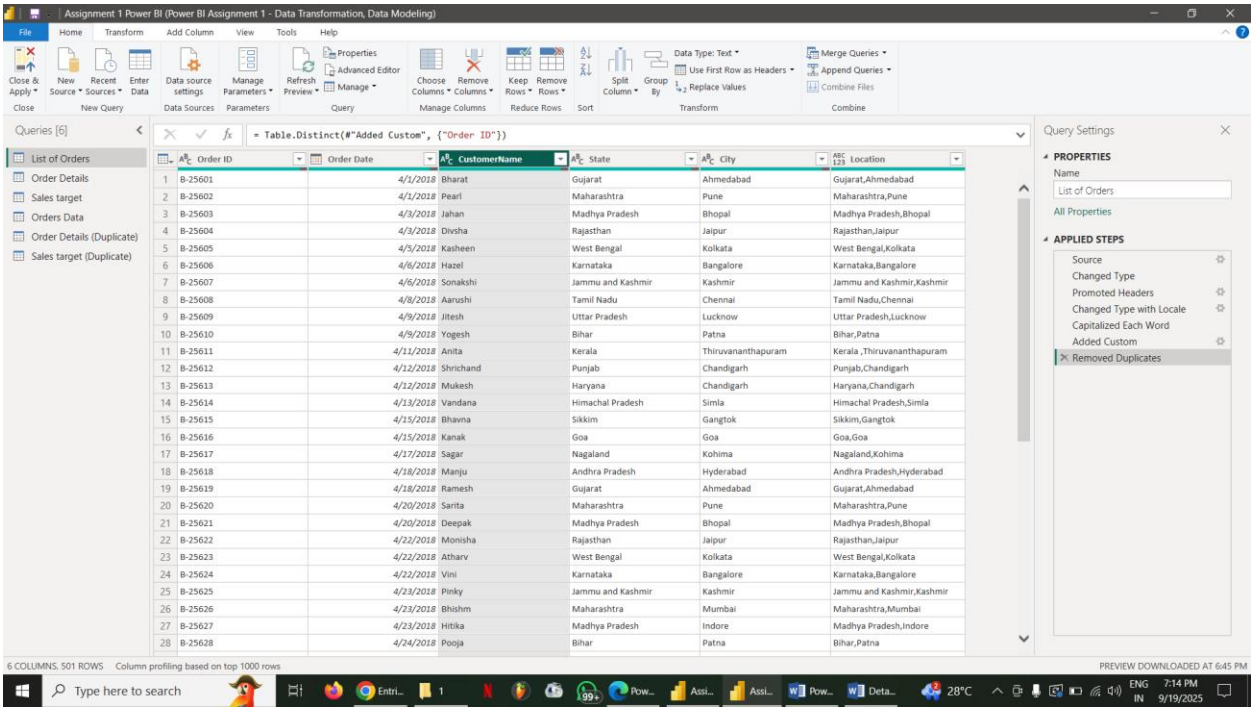


Change the data type of “Amount” and “Target” columns to ‘Fixed Decimal Number’

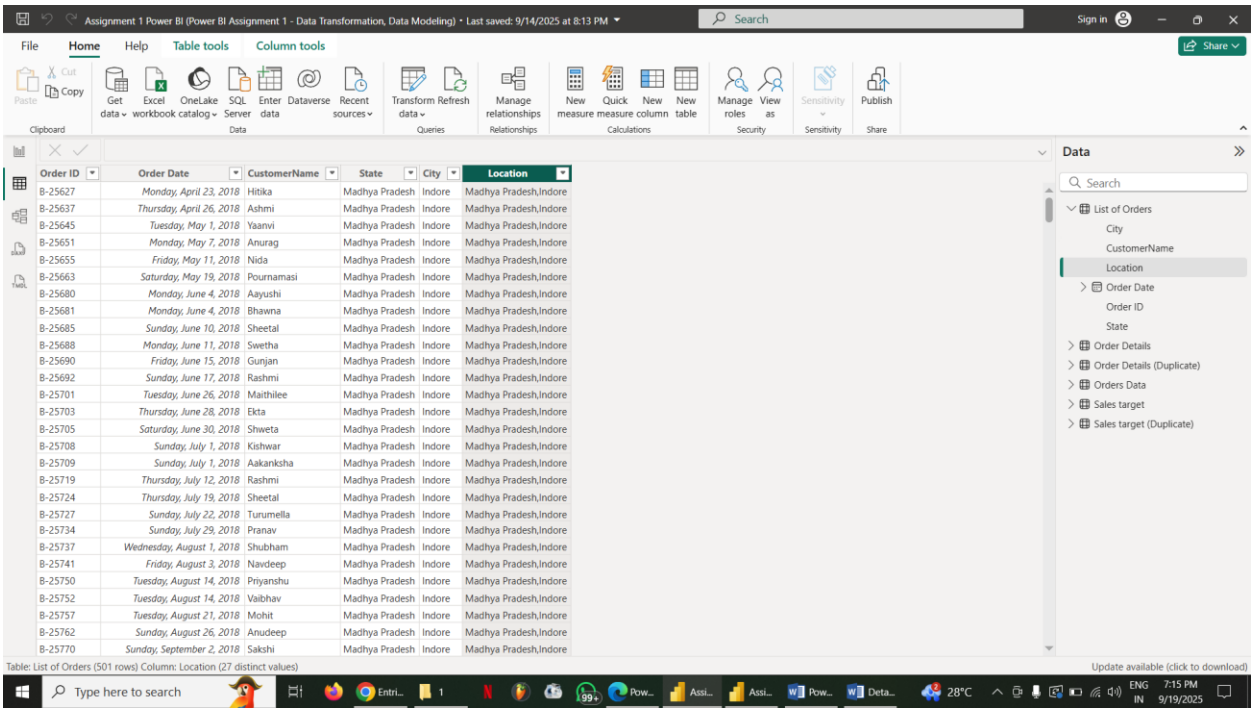




Format the "Customer Name" column into proper case, ensuring consistent capitalization for each word.

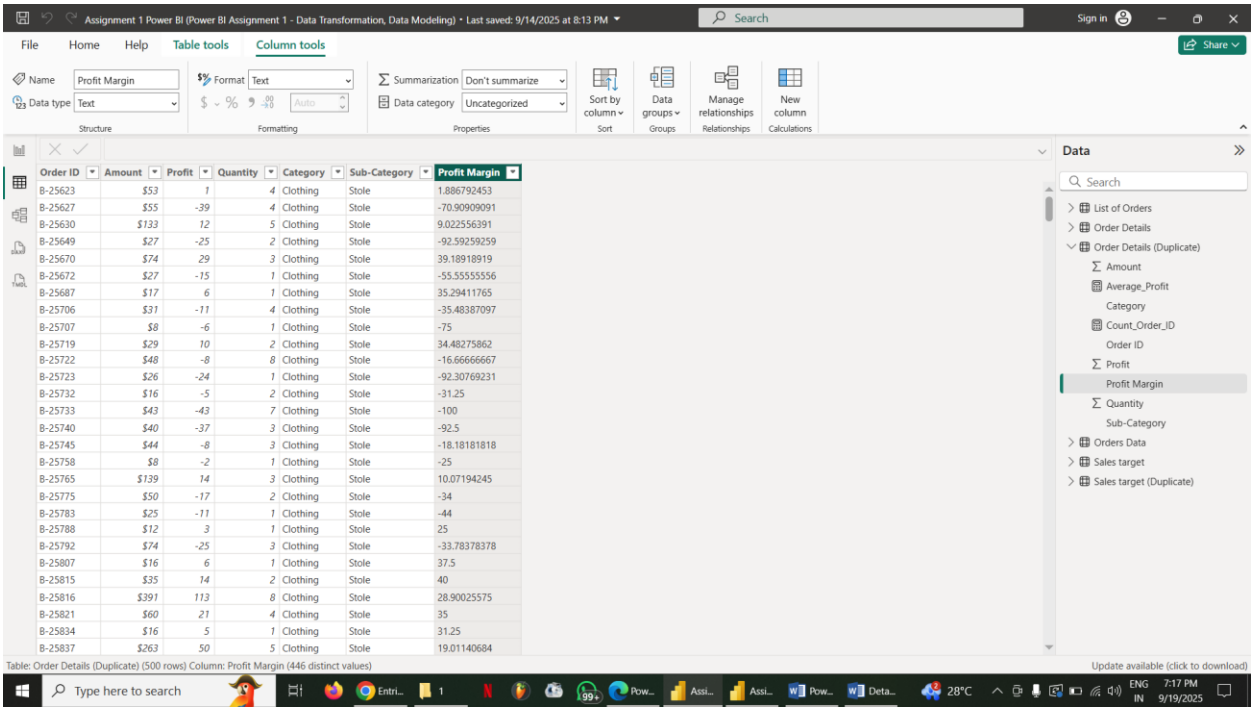


Merge the "State" and "City" columns to create a new column named "Location" in the format ‘City, State’.



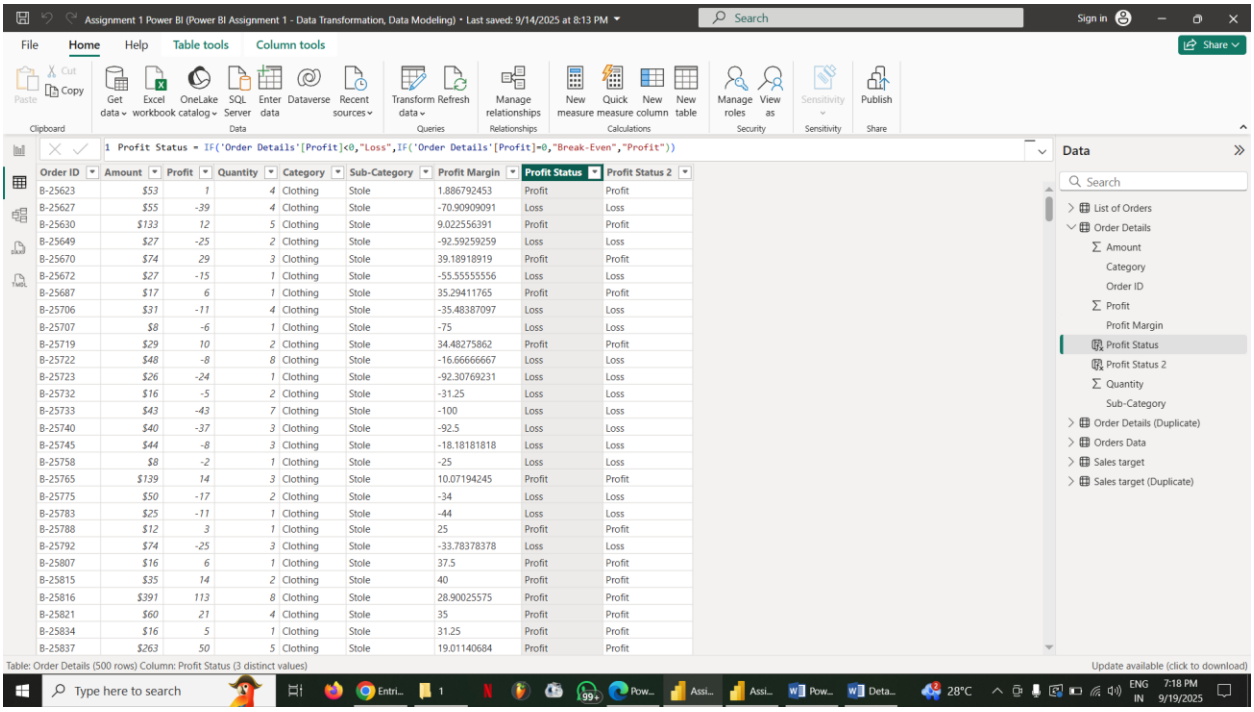
Order ID	Order Date	CustomerName	State	City	Location
B-25627	Monday, April 23, 2018	Hitika	Madhya Pradesh	Indore	Madhya Pradesh,Indore
B-25637	Thursday, April 26, 2018	Ashmi	Madhya Pradesh	Indore	Madhya Pradesh,Indore
B-25645	Tuesday, May 1, 2018	Yaanvi	Madhya Pradesh	Indore	Madhya Pradesh,Indore
B-25651	Monday, May 7, 2018	Anurag	Madhya Pradesh	Indore	Madhya Pradesh,Indore
B-25655	Friday, May 11, 2018	Nida	Madhya Pradesh	Indore	Madhya Pradesh,Indore
B-25663	Saturday, May 19, 2018	Pournamasi	Madhya Pradesh	Indore	Madhya Pradesh,Indore
B-25680	Monday, June 4, 2018	Aayushi	Madhya Pradesh	Indore	Madhya Pradesh,Indore
B-25681	Monday, June 4, 2018	Bhawna	Madhya Pradesh	Indore	Madhya Pradesh,Indore
B-25685	Sunday, June 10, 2018	Sheetal	Madhya Pradesh	Indore	Madhya Pradesh,Indore
B-25688	Monday, June 11, 2018	Swetha	Madhya Pradesh	Indore	Madhya Pradesh,Indore
B-25690	Friday, June 15, 2018	Gunjan	Madhya Pradesh	Indore	Madhya Pradesh,Indore
B-25692	Sunday, June 17, 2018	Rashmi	Madhya Pradesh	Indore	Madhya Pradesh,Indore
B-25701	Tuesday, June 26, 2018	Maithilee	Madhya Pradesh	Indore	Madhya Pradesh,Indore
B-25703	Thursday, June 28, 2018	Ekta	Madhya Pradesh	Indore	Madhya Pradesh,Indore
B-25705	Saturday, June 30, 2018	Shweta	Madhya Pradesh	Indore	Madhya Pradesh,Indore
B-25708	Sunday, July 1, 2018	Kishwar	Madhya Pradesh	Indore	Madhya Pradesh,Indore
B-25709	Sunday, July 1, 2018	Aakanksha	Madhya Pradesh	Indore	Madhya Pradesh,Indore
B-25719	Thursday, July 12, 2018	Rashmi	Madhya Pradesh	Indore	Madhya Pradesh,Indore
B-25724	Thursday, July 19, 2018	Sheetal	Madhya Pradesh	Indore	Madhya Pradesh,Indore
B-25727	Sunday, July 22, 2018	Turumella	Madhya Pradesh	Indore	Madhya Pradesh,Indore
B-25734	Sunday, July 29, 2018	Pranav	Madhya Pradesh	Indore	Madhya Pradesh,Indore
B-25737	Wednesday, August 1, 2018	Shubham	Madhya Pradesh	Indore	Madhya Pradesh,Indore
B-25741	Friday, August 3, 2018	Navdeep	Madhya Pradesh	Indore	Madhya Pradesh,Indore
B-25750	Tuesday, August 14, 2018	Priyanshu	Madhya Pradesh	Indore	Madhya Pradesh,Indore
B-25752	Tuesday, August 14, 2018	Vaibhav	Madhya Pradesh	Indore	Madhya Pradesh,Indore
B-25757	Tuesday, August 21, 2018	Mohit	Madhya Pradesh	Indore	Madhya Pradesh,Indore
B-25762	Sunday, August 26, 2018	Anudeep	Madhya Pradesh	Indore	Madhya Pradesh,Indore
B-25770	Sunday, September 2, 2018	Sakshi	Madhya Pradesh	Indore	Madhya Pradesh,Indore

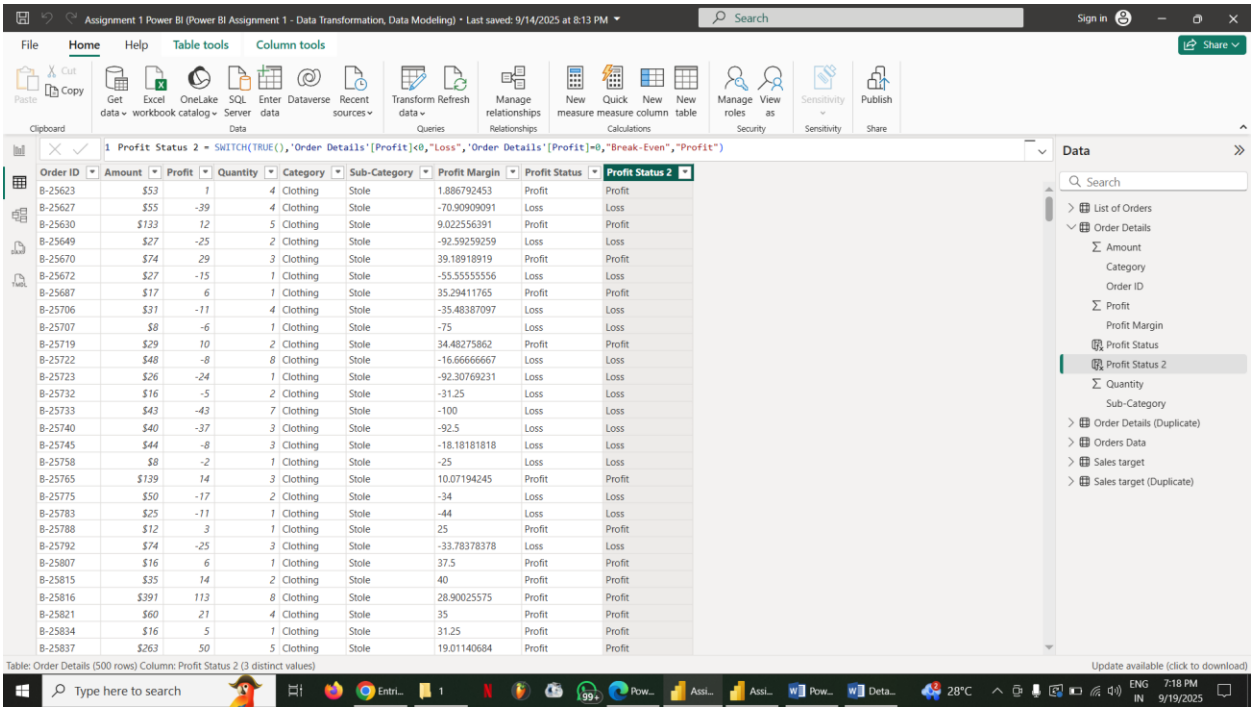
Create a new custom column named "Profit Margin" as the percentage of "Profit" divided by "Amount".



Order ID	Amount	Profit	Quantity	Category	Sub-Category	Profit Margin
B-25623	$53	1	4	Clothing	Stole	1.886792453
B-25627	$55	-39	4	Clothing	Stole	-70.90909091
B-25630	$133	12	5	Clothing	Stole	9.022556391
B-25649	$27	-25	2	Clothing	Stole	-92.59259259
B-25670	$74	29	3	Clothing	Stole	39.18918919
B-25672	$27	-15	1	Clothing	Stole	-55.55555556
B-25687	$17	6	1	Clothing	Stole	35.29411765
B-25706	$31	-11	4	Clothing	Stole	-35.48387097
B-25707	$8	-6	1	Clothing	Stole	-75
B-25719	$29	10	2	Clothing	Stole	34.48275862
B-25722	$48	-8	8	Clothing	Stole	-16.66666667
B-25723	$26	-24	1	Clothing	Stole	-92.30769231
B-25732	$16	-5	2	Clothing	Stole	-31.25
B-25733	$43	-43	7	Clothing	Stole	-100
B-25740	$40	-37	3	Clothing	Stole	-92.5
B-25745	$44	-8	3	Clothing	Stole	-18.18181818
B-25758	$8	-2	1	Clothing	Stole	-25
B-25765	$139	14	3	Clothing	Stole	10.07194245
B-25775	$50	-17	2	Clothing	Stole	-34
B-25783	$25	-11	1	Clothing	Stole	-44
B-25788	$12	3	1	Clothing	Stole	25
B-25792	$74	-25	3	Clothing	Stole	-33.78378378
B-25807	$16	6	1	Clothing	Stole	37.5
B-25815	$35	14	2	Clothing	Stole	40
B-25816	$391	113	8	Clothing	Stole	28.90025575
B-25821	$60	21	4	Clothing	Stole	35
B-25834	$16	5	1	Clothing	Stole	31.25
B-25837	$263	50	5	Clothing	Stole	19.01140684

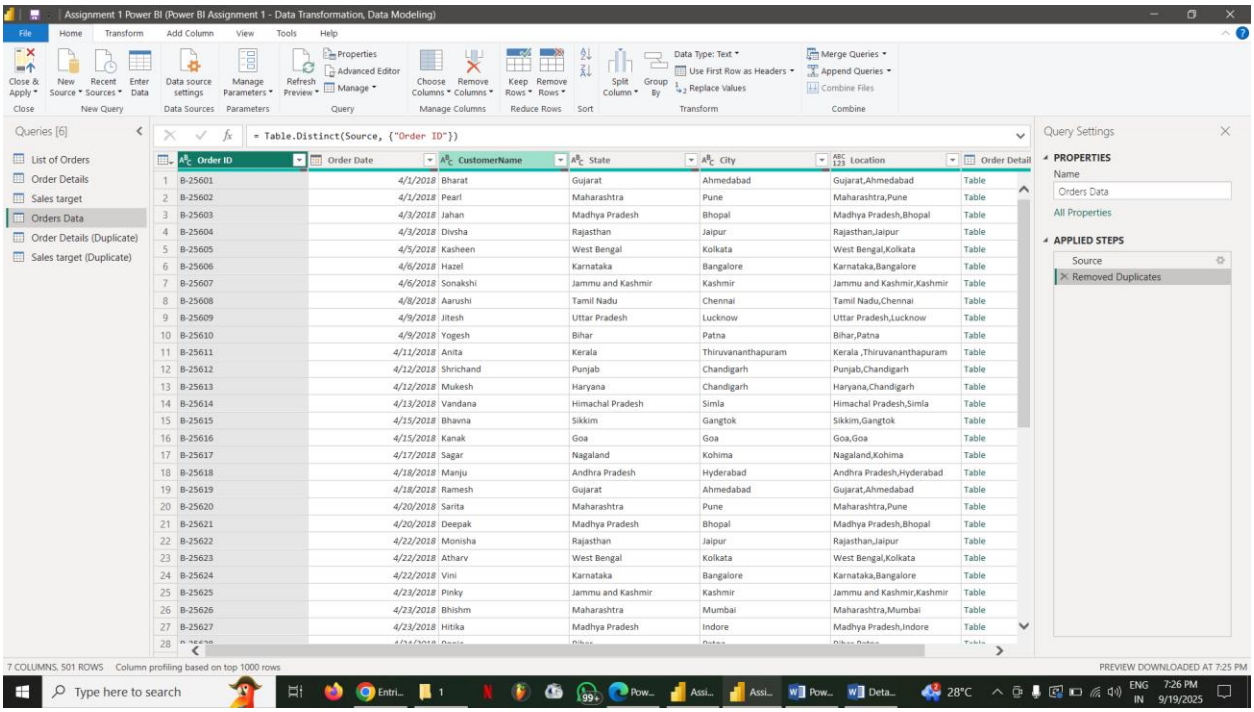
Add a new conditional column named "Profit Status" based on the values in the "Profit" column. The conditions are as follows: if the profit is less than 0, the label should be "Loss"; if the profit equals 0, the label should be "Break-Even"; and if the profit is greater than 0, the label should be "Profit".





Merging Data (Joins):

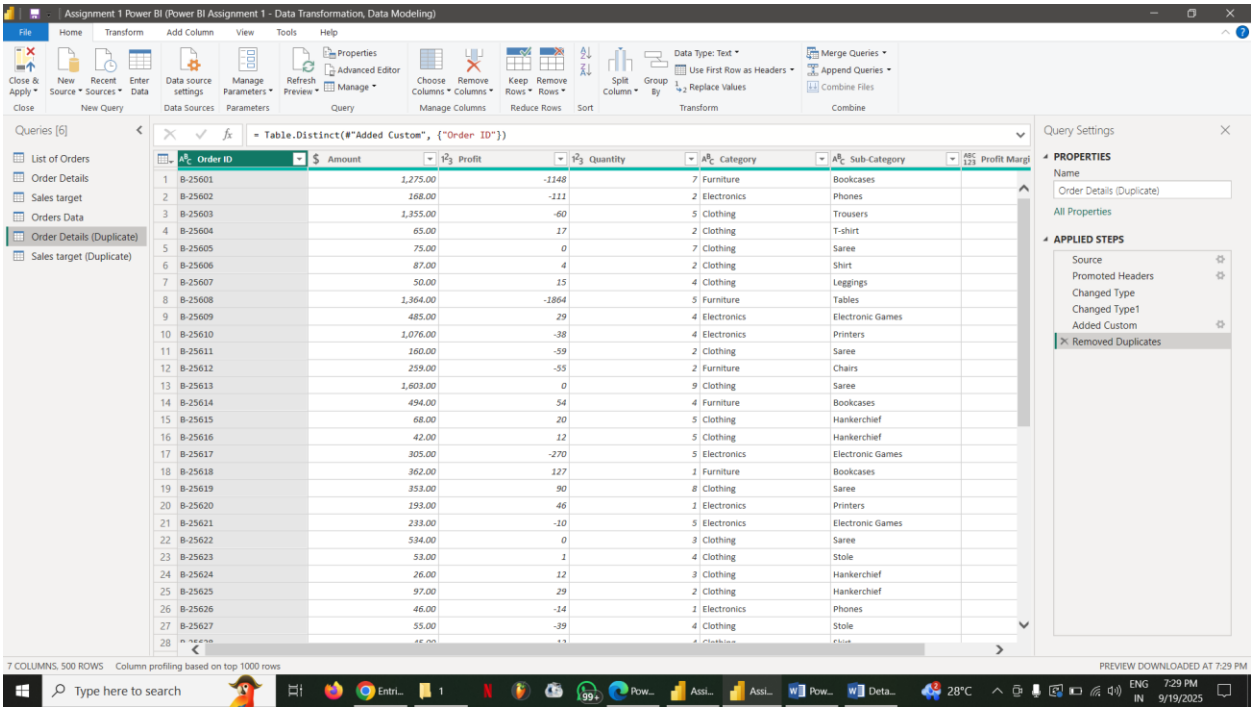
Merge the "List of Orders" and "Order Details" tables into a new single table named "Orders Data" based on the "Order ID" relationship.



Handling Missing Data & Duplicate Data:

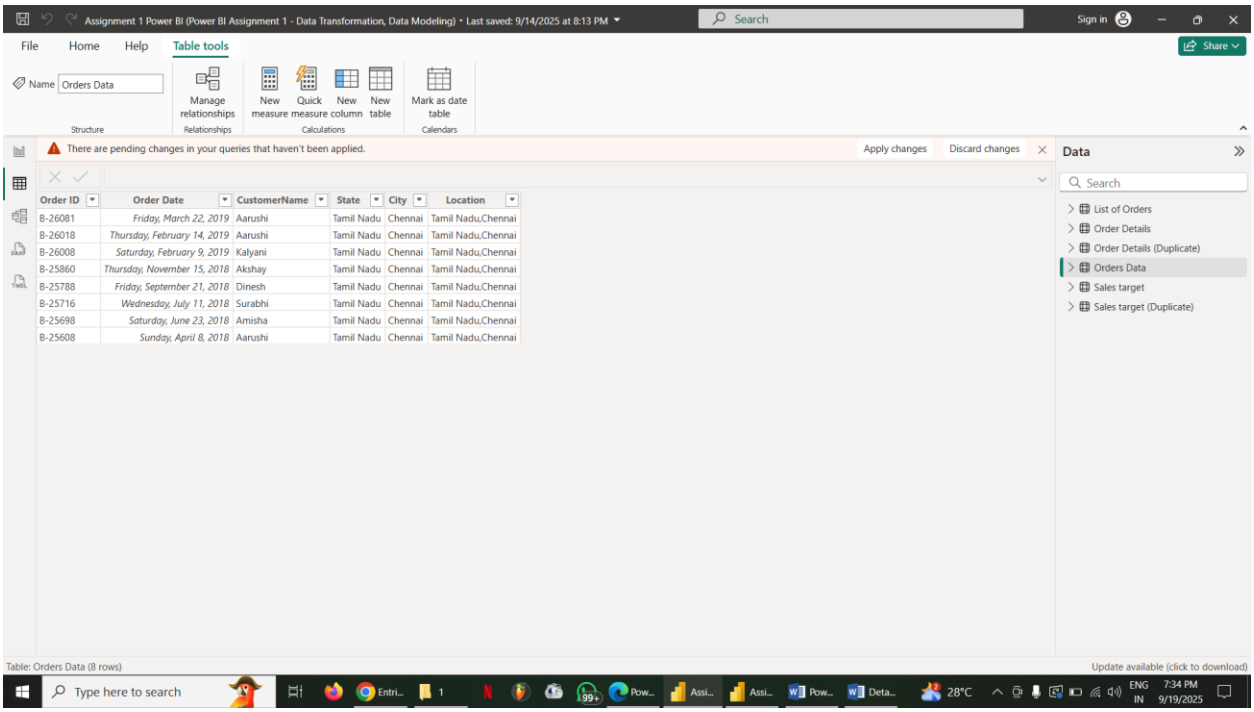
Identify missing values in the data and determine a strategy to address them.

Check for duplicate rows and define a strategy to handle duplicates.



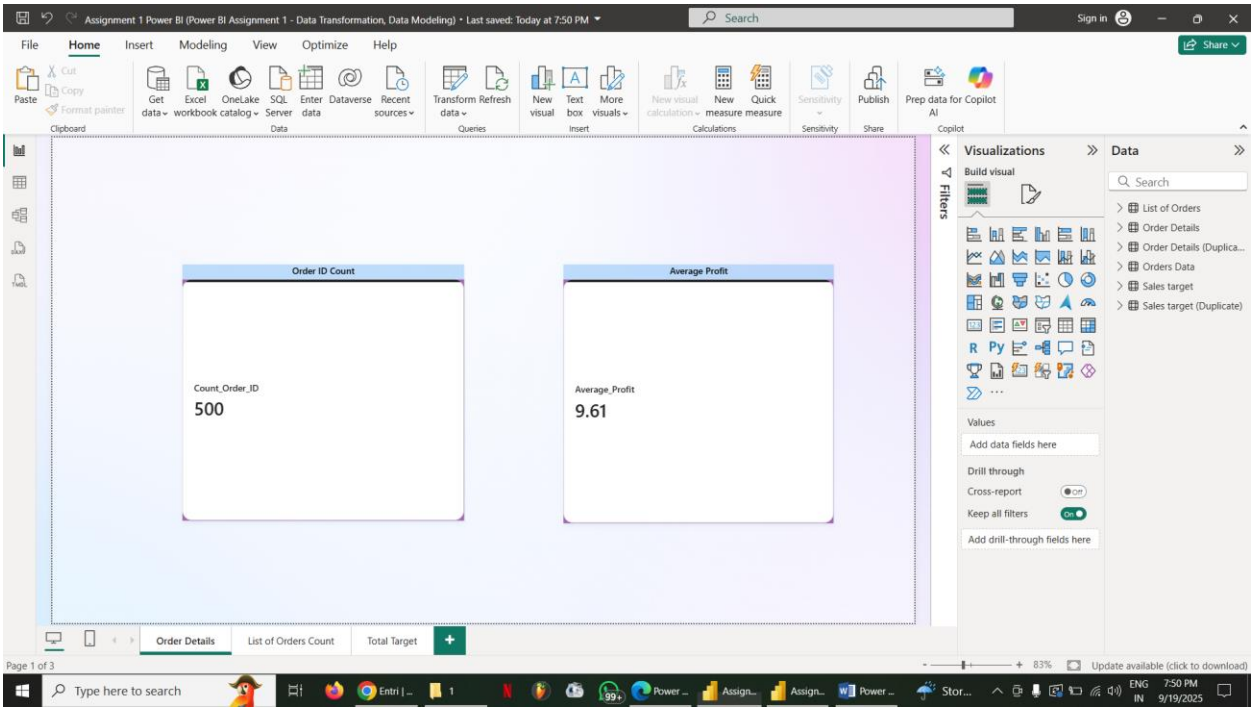
Sorting and Filtering Data:

In the ‘Orders Data’ table, utilize sorting and filtering techniques on columns like Order Date, State or Category to analyze data based on specific criteria: ◆ Sort the orders by Order Date in descending order to analyze recent trends. ◆ Filter the orders to focus only on a specific state (e.g., Tamil Nadu) for regional analysis.

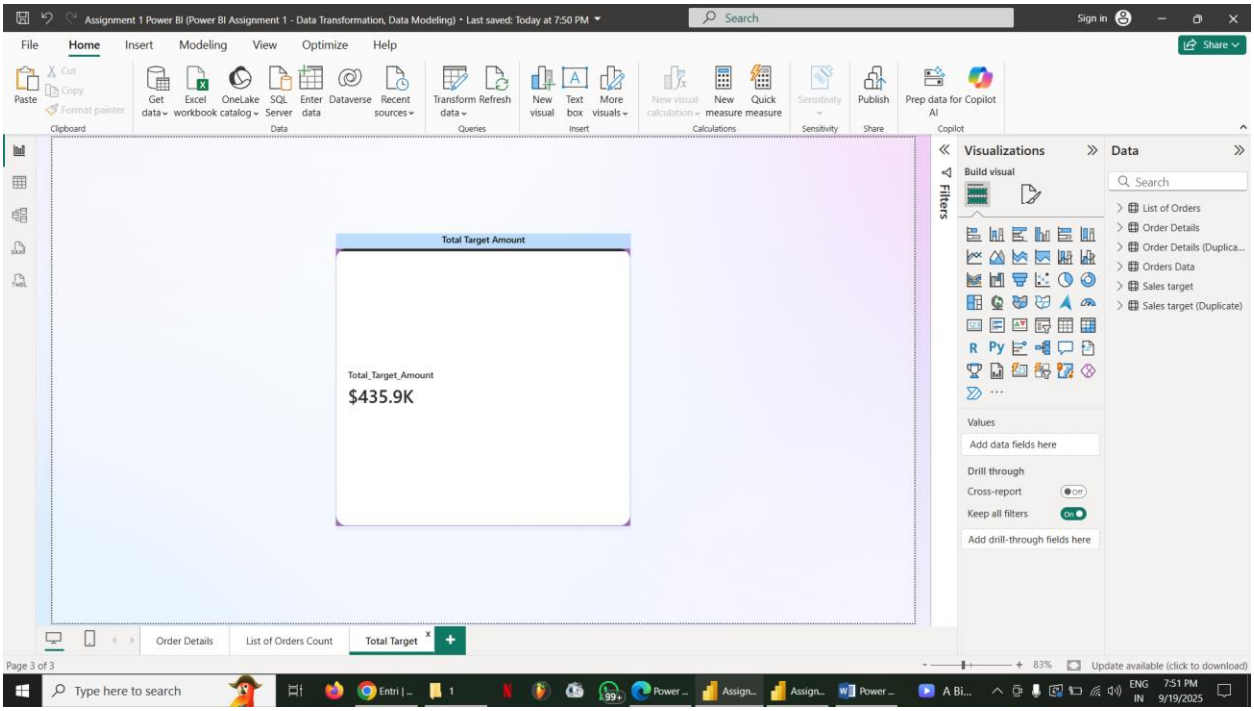


Grouping and Aggregating Data:

Duplicate the “Order Details” table and calculate the count of each Order ID, average profit by Category or total amount by Sub-Category.

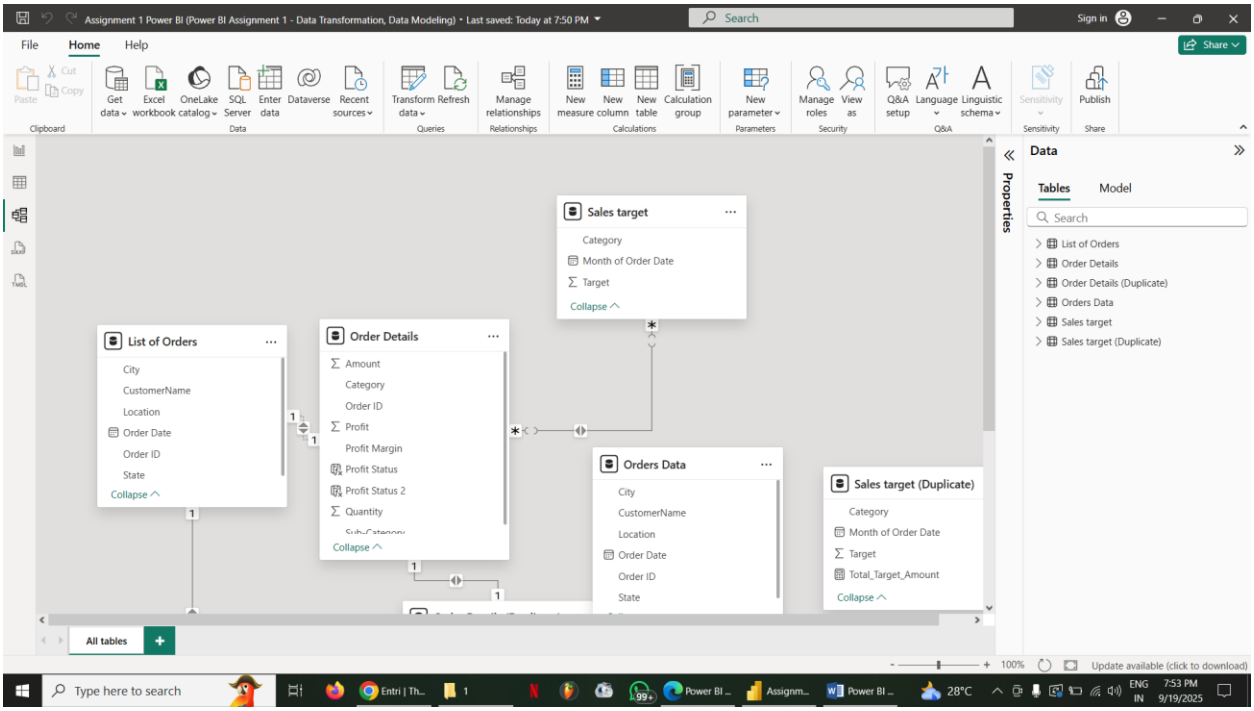


Duplicate the “Sales Target” table and aggregate the total target amount by Month of Order Date.

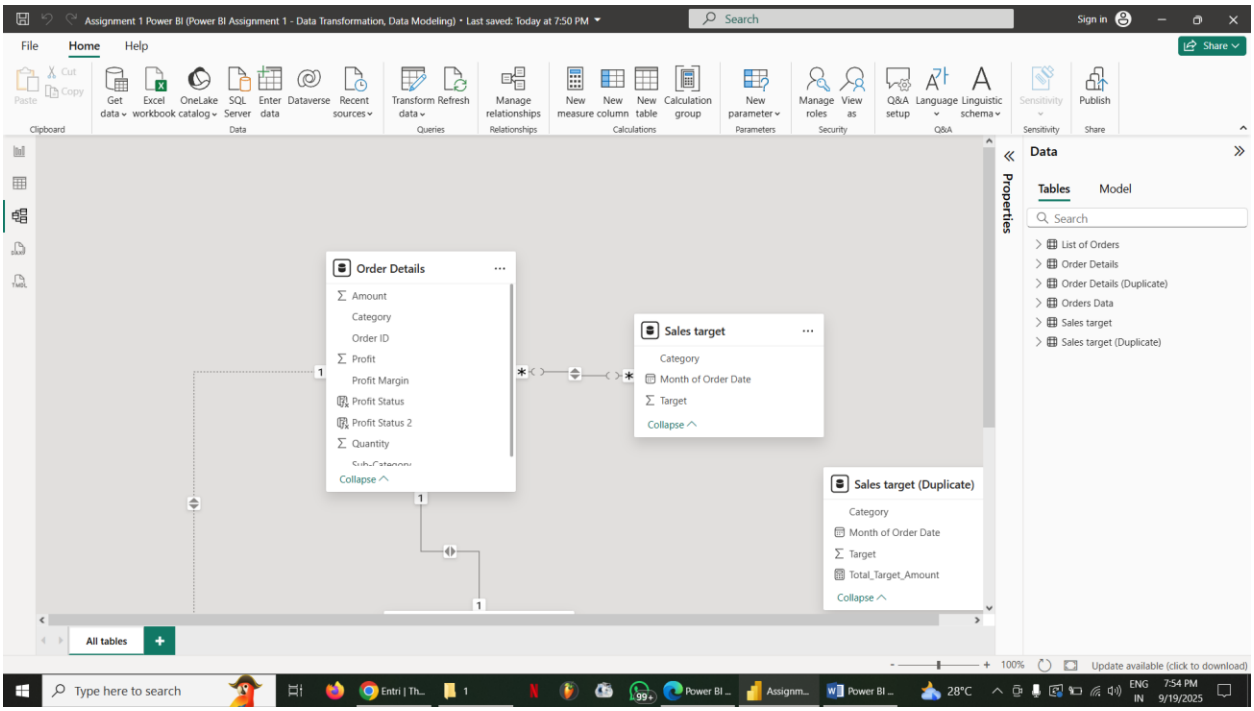


Data Modeling:

Establish a relationship between the “List of Orders” and “Order Details” tables using the ‘Order ID’ column.



Build a relationship between the “Order Details” and “Sales Target” tables based on the ‘Category’ column. Click "Manage relationships" and ensure this relationship is active.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Order Details
Amount
Category
Order ID
Profit
Profit Margin
Profit Status
Profit Status 2
Quantity
Collapse
Sales target
Category
Month of Order Date
Target
Collapse
Sales target (Duplicate)
Category
Month of Order Date
Target
Total_Target_Amount
Collapse
Data
Tables
Model
Search
List of Orders
Order Details
Order Details (Duplicate)
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