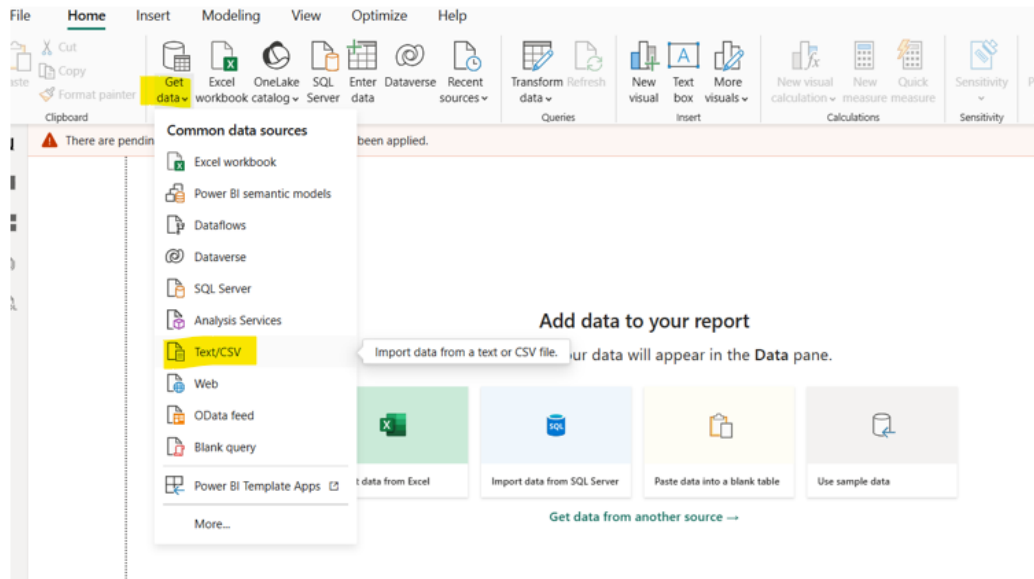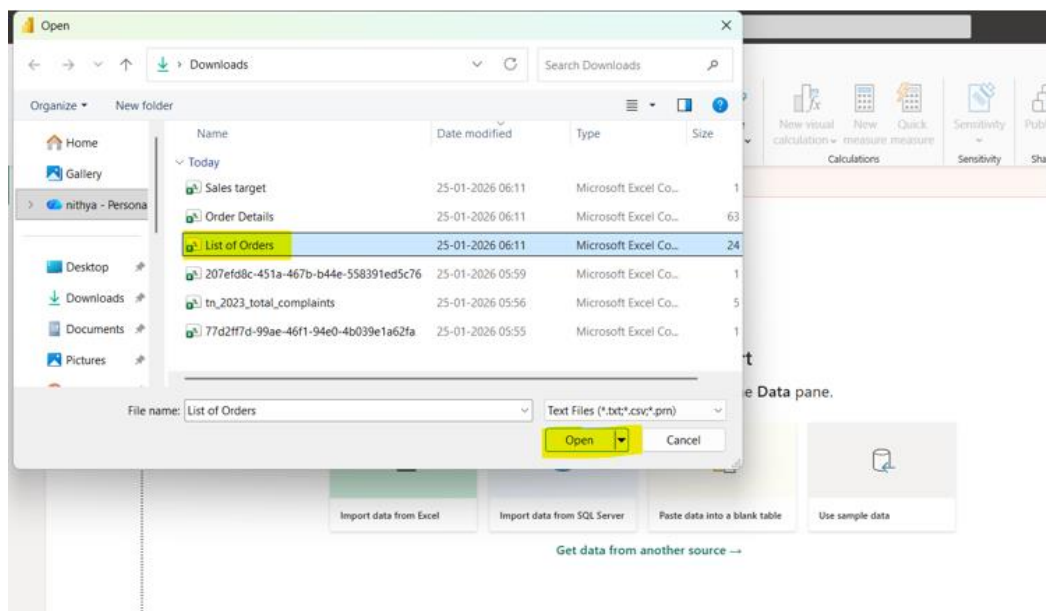# Power BI Assignment 1 – Data Transformation & Data Modelling

Import Data
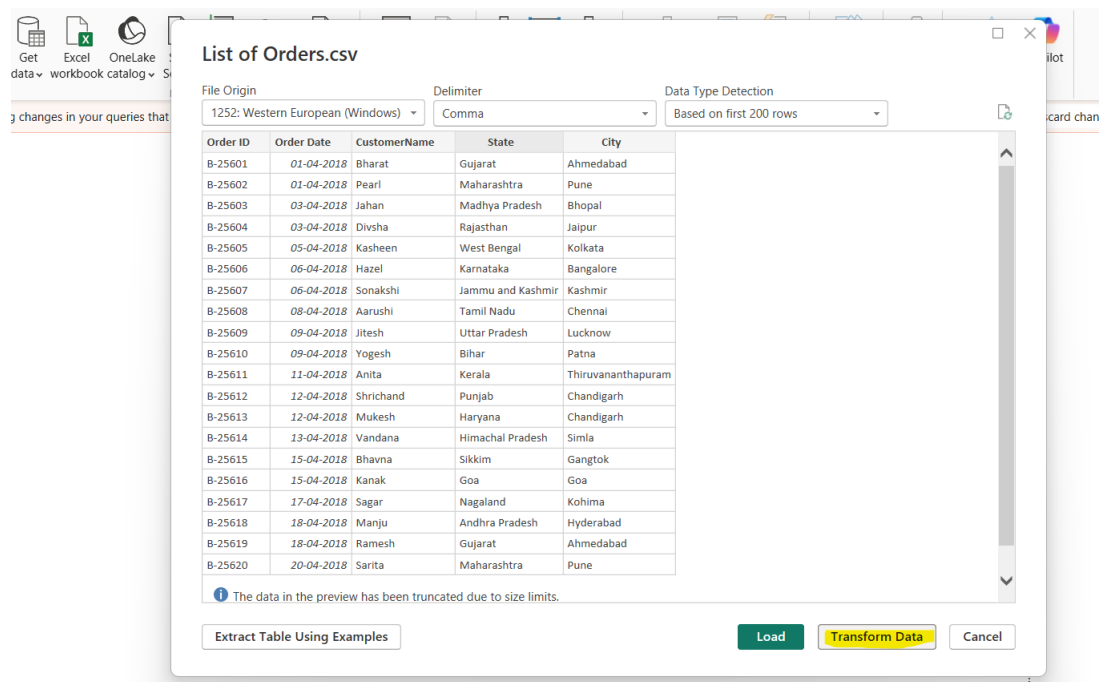
- Import "List of Orders.csv" file into Power BI. In Home tab, click "Get Data" and select "Text/CSV".
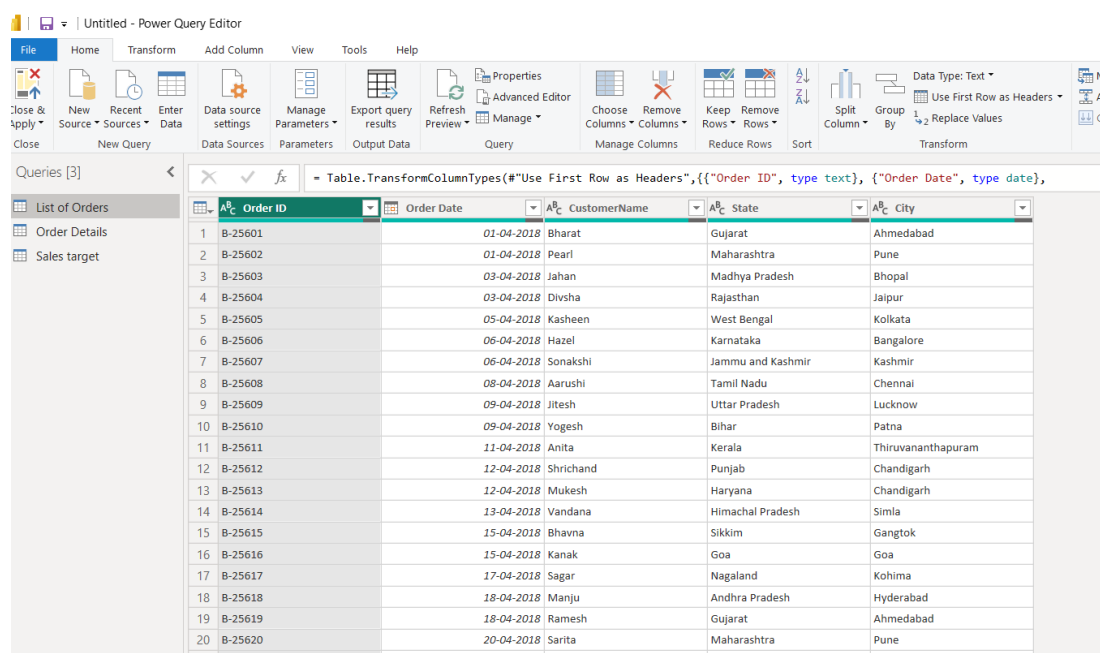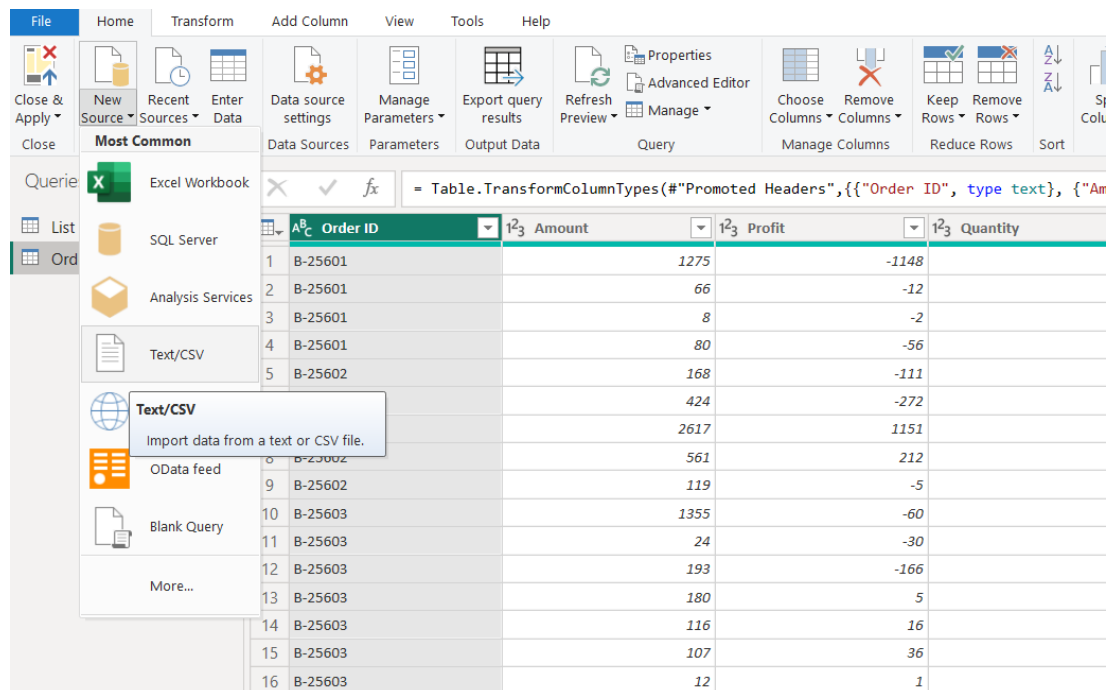

- Select the file and click "open"

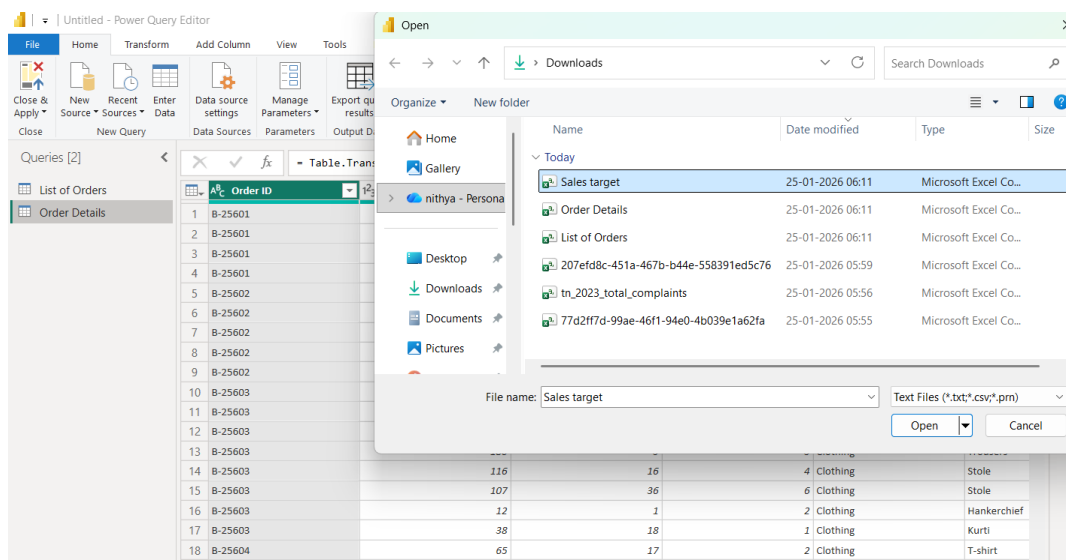- Open "List of Orders" in Power Query Editor by clicking on 'Transform'.

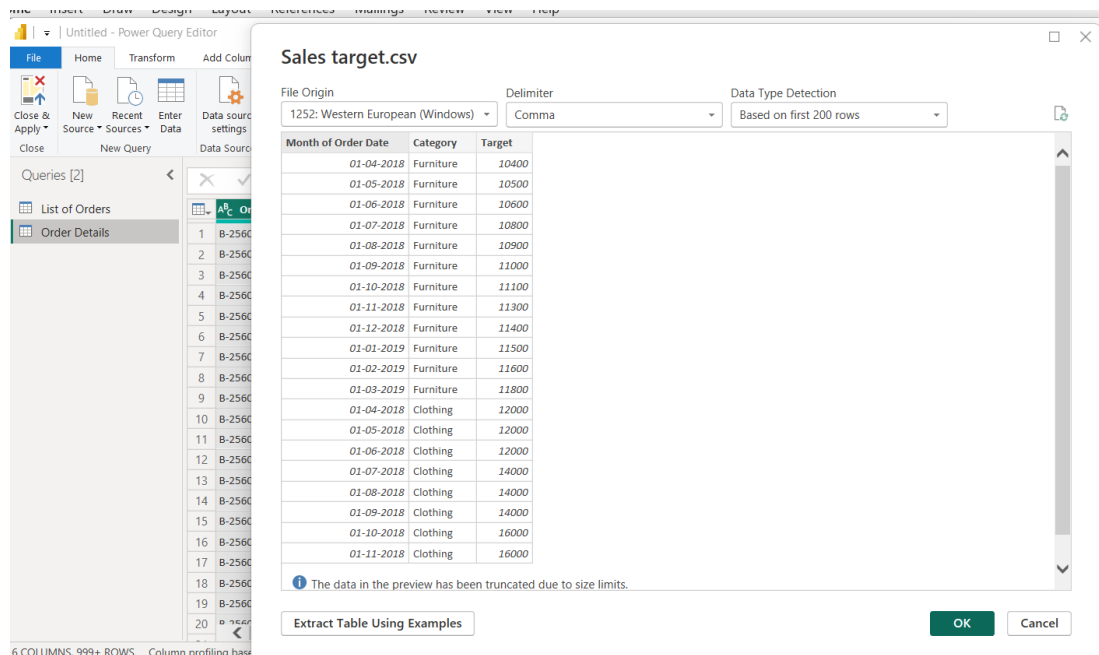- Table loaded into the Power Query Editor

- Import "Order Details.csv" and "Sales target.csv" into Power Query Editor by clicking Home tab, then click "New Source", select "Text/CSV"
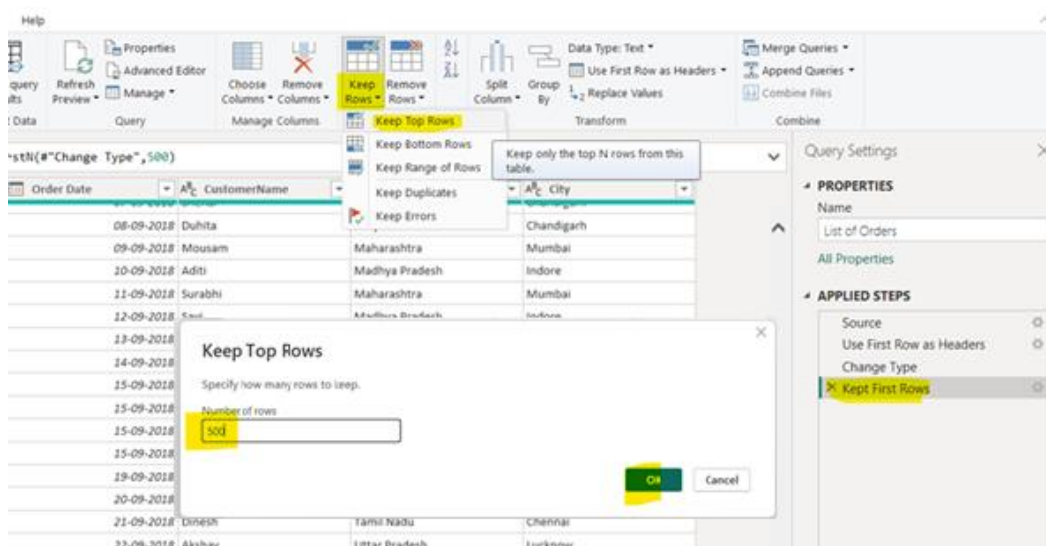

- Select the file and click "open".

- Open "Sales Target" in Power Query Editor by clicking on 'OK.

Transform Data

Restricts Row Count:

- "List of Orders" table restricts to only the first 500 rows to remove the null values rows.

Data Type Change:

- "Order Date" column in the "List of Orders" table was changed to data type 'Date'.

- "Amount" column in the "Order Details" table data type changed to 'Fixed Decimal Number'.

- "Target" column in the "Sales Target" table data type changed to 'Fixed Decimal Number'.

Text Formatting:

- "Customer Name" column Formatted into proper case, ensuring consistent capitalization for each word.

Merge Columns:

- Merged the "State" and "City" columns to create a new column named "Location" in the format 'City, State'.

- New Column "Location" created in the form of "City, State"

Create Custom Column:

- New custom column created named "Profit Margin" as the percentage of "Profit" divided by "Amount".

Create Conditional Column:

- New conditional column created 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".

- Created new columns shown as follows,

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, by clicking under "Home" tab, click the "Merge Queries" dropdown symbol, select "Merge Queries as New" and select the two table that needs to merge.
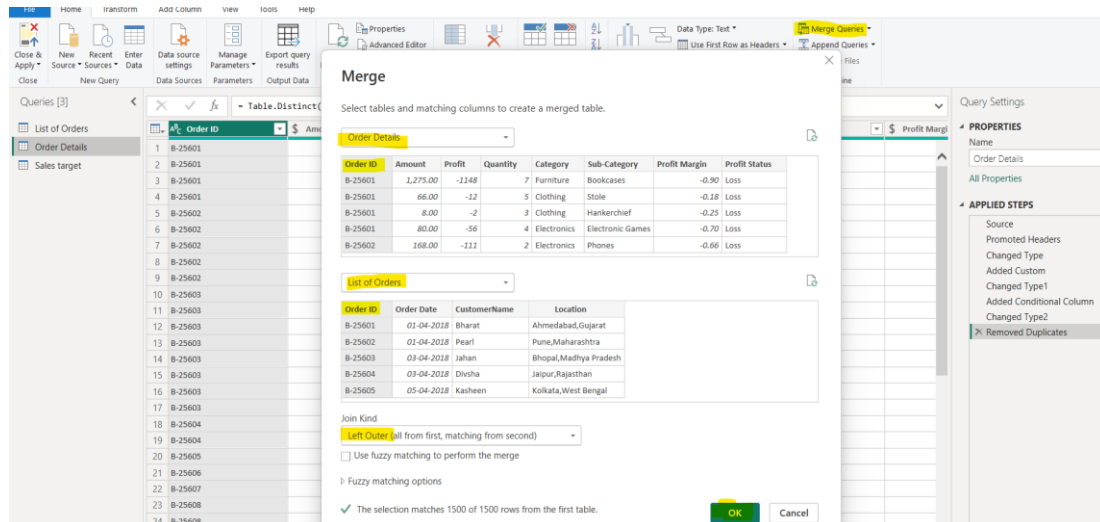
- After merging the tables, a new table "Orders Data" created and by expand the table, got the all column from secondary table.

Handling Missing Data & Duplicate Data:

- There are no missing values found in the data and determine a strategy to address them.
- There are no duplicate rows found.

Sorting and Filtering Data:

- In the 'Orders Data' table, Sort the orders by Order Date in descending order to analyse recent trends.

- In the 'Orders Data' table, Filter the orders to focus only on a specific state (e.g., Tamil Nadu) for regional analysis.

Grouping and Aggregating Data:

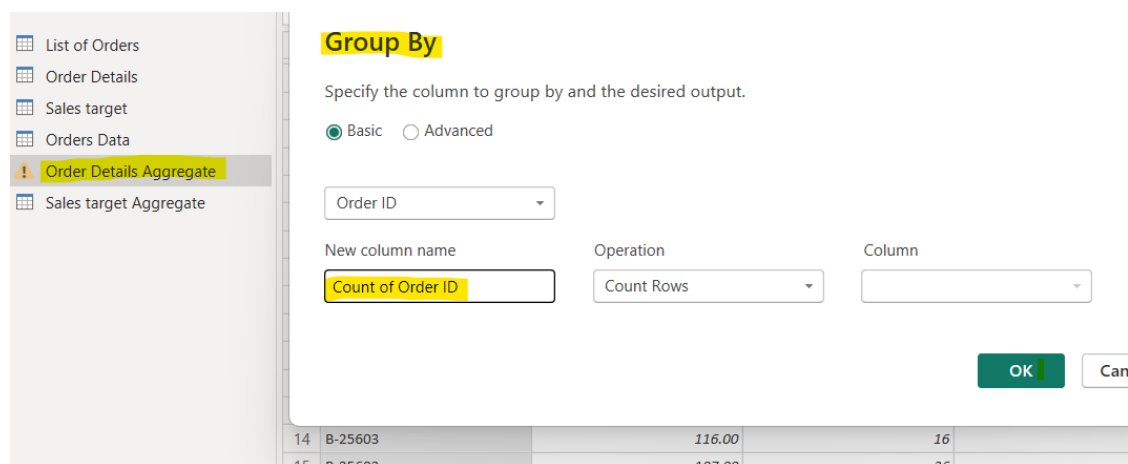- Duplicate the "Order Details" table and calculate the count of each Order ID, average profit by Category or total amount by Sub-Category.

Order Details table duplicated and named as "Order Details Aggregate"
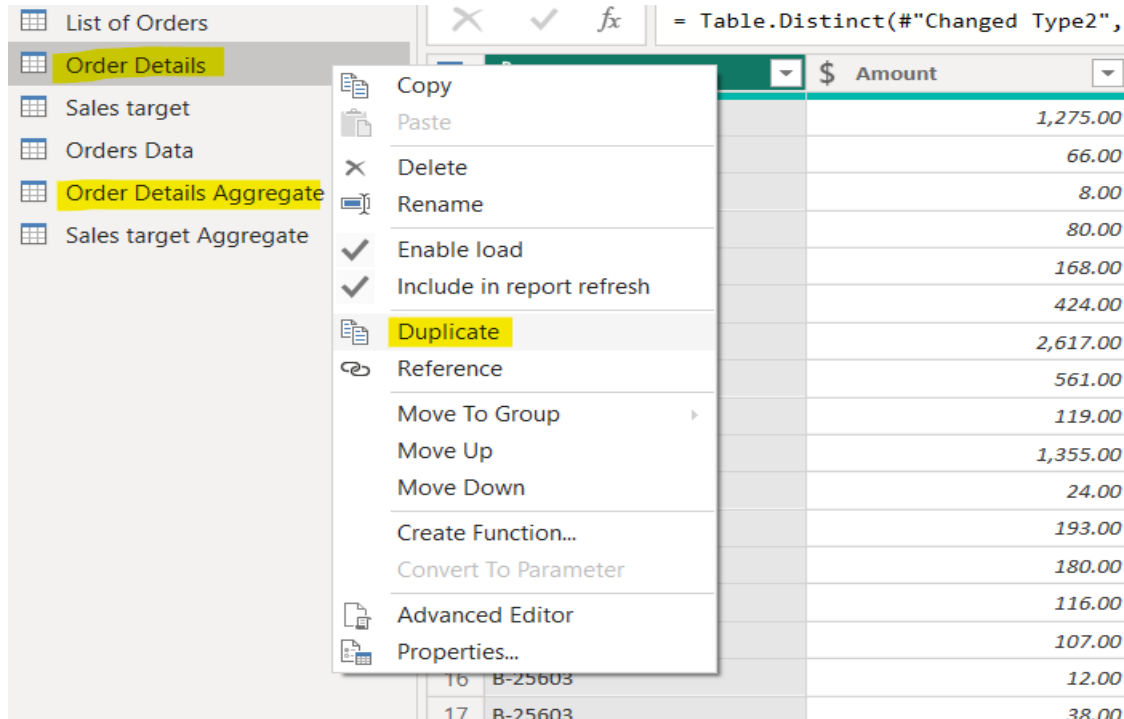
Group By function to calculate the count of each Order ID

➤ Grouping by Order ID and calculated the Count of each Order ID.

Order ID	Count of Order ID
1 B-25601	4
2 B-25602	5
3 B-25603	8
4 B-25604	2
5 B-25605	1
6 B-25606	1
7 B-25607	1
8 B-25608	4
9 B-25609	2
10 B-25610	6
11 B-25611	1
12 B-25612	1
13 B-25613	1
14 B-25614	2
15 B-25615	1
16 B-25616	4
17 B-25617	1
18 B-25618	2
19 B-25619	1
20 B-25620	1
21 B-25621	3
22 B-25622	1

PROPERTIES
Name
Order Details Aggregate
All Properties

APPLIED STEPS
Source
Promoted Headers
Changed Type
Added Custom
Changed Type1
Added Conditional Column
Changed Type2
Removed Duplicates
✕ Grouped Rows1
Grouped Rows
Renamed Columns

➤ Grouping by Category and calculated the Average Profit.

Category	Average Profit
1 Furniture	9.456790123
2 Clothing	11.76290832
3 Electronics	34.07142857

PROPERTIES
Name
Order Details Aggregate
All Properties

APPLIED STEPS
Source
Promoted Headers
Changed Type
Added Custom
Changed Type1
Added Conditional Colum
Changed Type2
Removed Duplicates
✕ Grouped Rows1
Grouped Rows
Renamed Columns

➤ Grouping by Subcategory and calculated the Total Amount.

| Sub-Category	Total Amount
1 Bookcases	56861
2 Stole	18546
3 Hankerchief	14608
4 Electronic Games	39168
5 Phones	46119
6 Saree	53511
7 Trousers	30039
8 Chairs	34222
9 Kurti	3361
10 T-shirt	7382
11 Shirt	7555
12 Leggings	2106
13 Tables	22614
14 Printers	58252
15 Accessories	21728
16 Furnishings	13484
17 Skirt	1946

PROPERTIES
Name
Order Details Aggregate
All Properties

APPLIED STEPS
Source
Promoted Headers
Changed Type
Added Custom
Changed Type1
Added Conditional Column
Changed Type2
Removed Duplicates
Grouped Rows
✕ Renamed Columns

- "Sales Target" table duplicated and named as "Sales target Aggregate" and aggregate the total target amount by Month of Order Date.

Data Modelling

- Relationship established between the "List of Orders" and "Order Details" tables using the 'Order ID' column.
- Relationship created between the "Order Details" and "Sales Target" tables based on the 'Category' column.
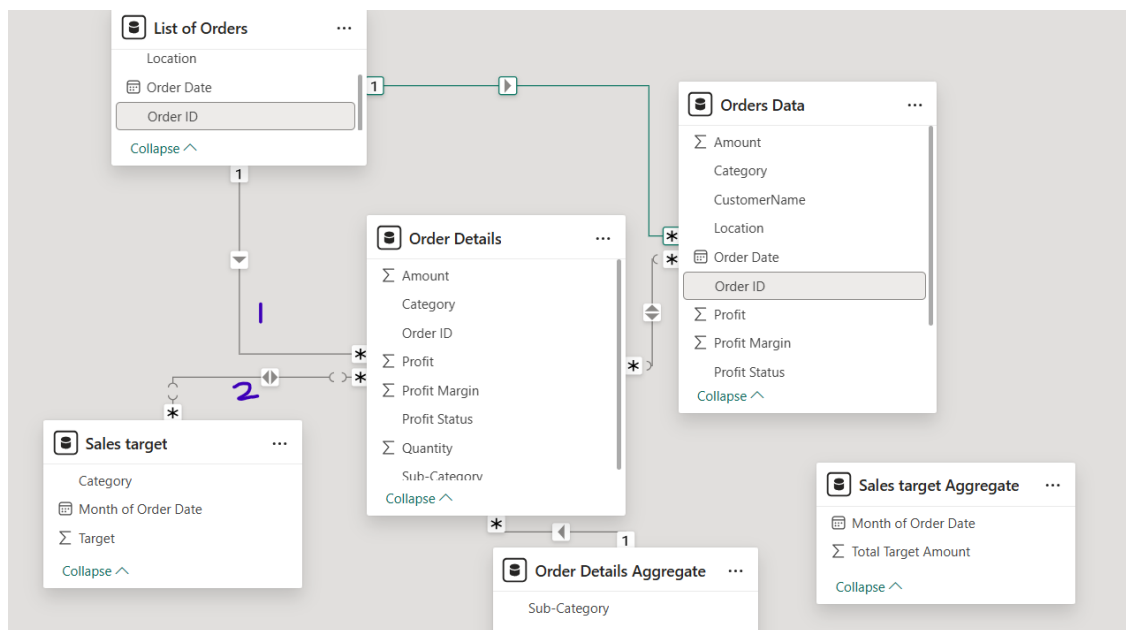
- Click "Manage relationships" and ensure this relationship is active.

From: table (column)	Relationship	To: table (column)	Status
Order Details (Order ID)	*——◀▶——*	Orders Data (Order ID)	Active
Order Details (Order ID)	*——◀——1	List of Orders (Order ID)	Active
Order Details (Sub-Category)	*——◀——1	Order Details Aggregate (Sub-...	Active
Orders Data (Order ID)	*——◀——1	List of Orders (Order ID)	Active
Sales target (Category)	*——◀▶——*	Order Details (Category)	Active