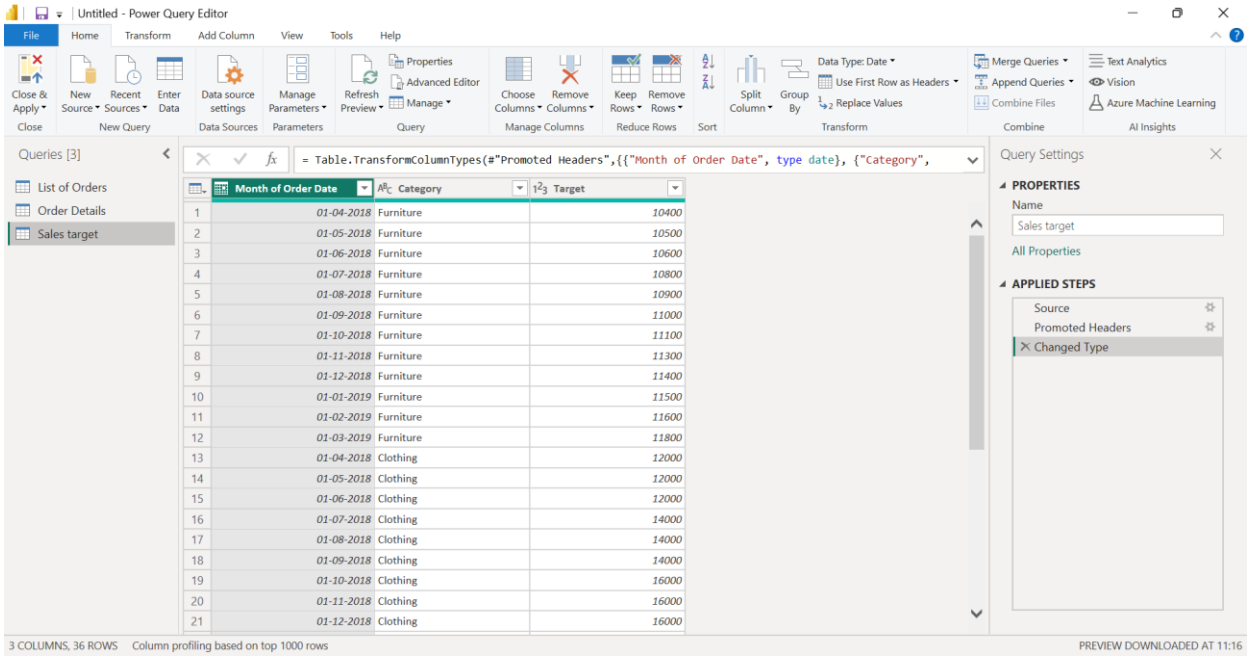
Power BI Assignment 1 – Data Transformation & Data Modeling

Import Data:

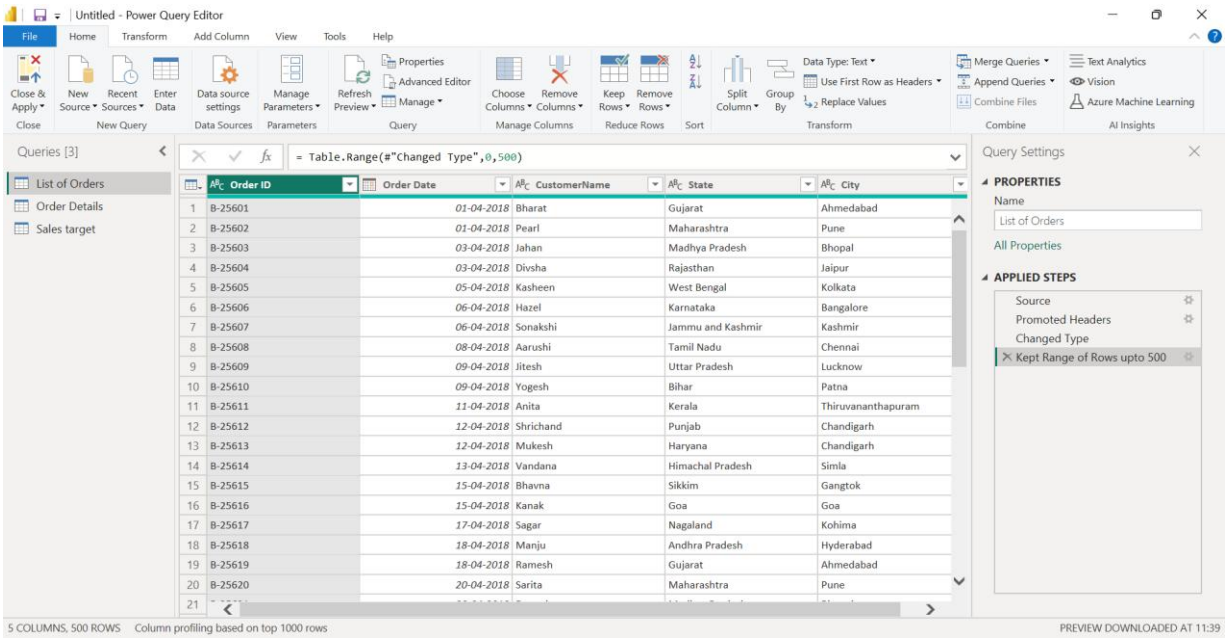
Import data "List of Orders, Order Details & Sales Target" in Power Query Editor.



	Month of Order Date	Category	Target
1	01-04-2018	Furniture	10400
2	01-05-2018	Furniture	10500
3	01-06-2018	Furniture	10600
4	01-07-2018	Furniture	10800
5	01-08-2018	Furniture	10900
6	01-09-2018	Furniture	11000
7	01-10-2018	Furniture	11100
8	01-11-2018	Furniture	11300
9	01-12-2018	Furniture	11400
10	01-01-2019	Furniture	11500
11	01-02-2019	Furniture	11600
12	01-03-2019	Furniture	11800
13	01-04-2018	Clothing	12000
14	01-05-2018	Clothing	12000
15	01-06-2018	Clothing	12000
16	01-07-2018	Clothing	14000
17	01-08-2018	Clothing	14000
18	01-09-2018	Clothing	14000
19	01-10-2018	Clothing	16000
20	01-11-2018	Clothing	16000
21	01-12-2018	Clothing	16000

Data Transformation:

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



	Order ID	Order Date	CustomerName	State	City
1	B-25601	01-04-2018	Bharat	Gujarat	Ahmedabad
2	B-25602	01-04-2018	Pearl	Maharashtra	Pune
3	B-25603	03-04-2018	Jahan	Madhya Pradesh	Bhopal
4	B-25604	03-04-2018	Divsha	Rajasthan	Jaipur
5	B-25605	05-04-2018	Kasheen	West Bengal	Kolkata
6	B-25606	06-04-2018	Hazel	Karnataka	Bangalore
7	B-25607	06-04-2018	Sonakshi	Jammu and Kashmir	Kashmir
8	B-25608	08-04-2018	Aarushi	Tamil Nadu	Chennai
9	B-25609	09-04-2018	Jitesh	Uttar Pradesh	Lucknow
10	B-25610	09-04-2018	Yogesh	Bihar	Patna
11	B-25611	11-04-2018	Anita	Kerala	Thiruvananthapuram
12	B-25612	12-04-2018	Shrichand	Punjab	Chandigarh
13	B-25613	12-04-2018	Mukesh	Haryana	Chandigarh
14	B-25614	13-04-2018	Vandana	Himachal Pradesh	Simla
15	B-25615	15-04-2018	Bhavna	Sikkim	Gangtok
16	B-25616	15-04-2018	Kanak	Goa	Goa
17	B-25617	17-04-2018	Sagar	Nagaland	Kohima
18	B-25618	18-04-2018	Manju	Andhra Pradesh	Hyderabad
19	B-25619	18-04-2018	Ramesh	Gujarat	Ahmedabad
20	B-25620	20-04-2018	Sarita	Maharashtra	Pune
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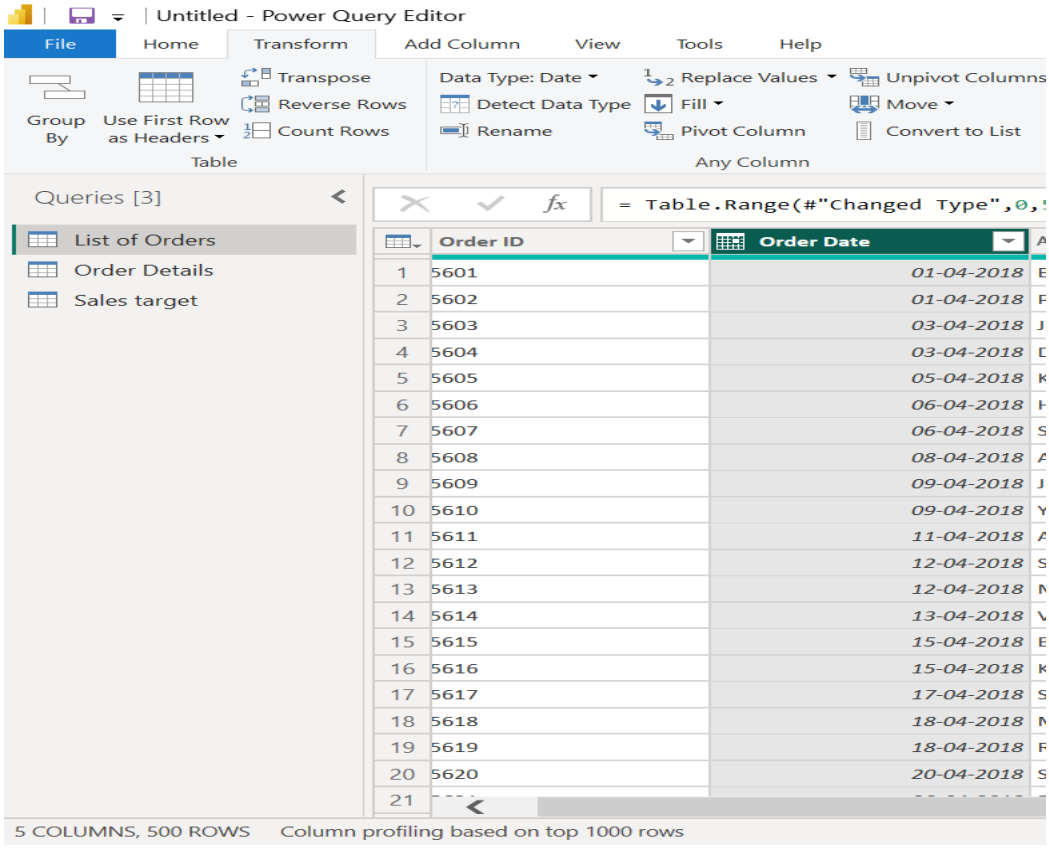
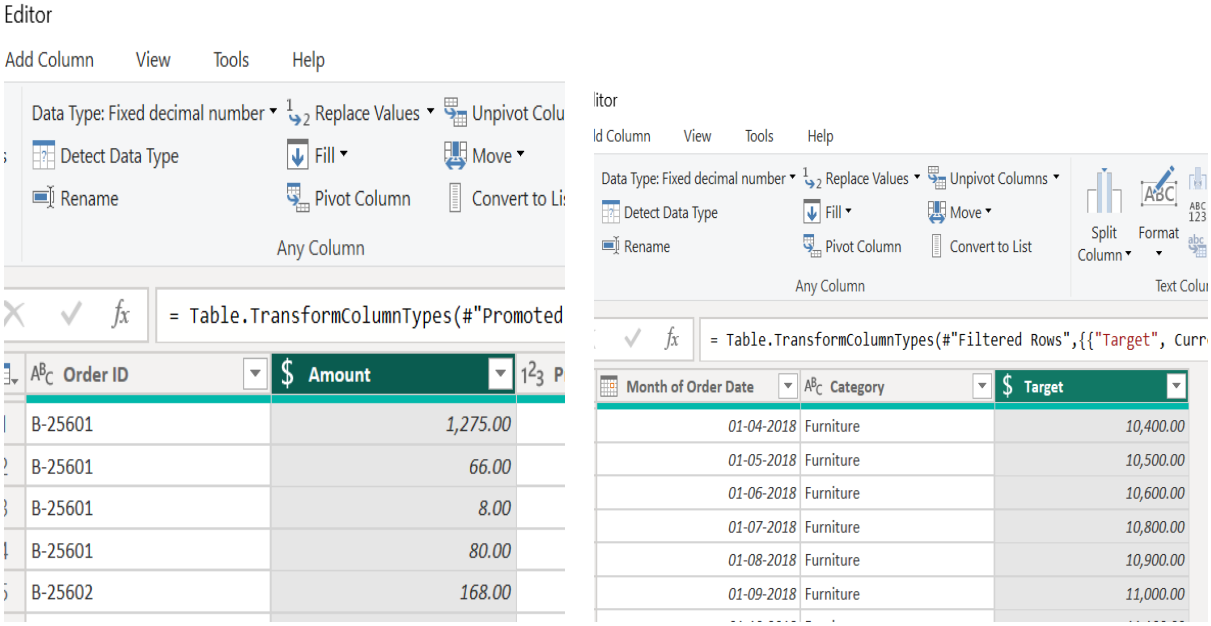
- **Ensure the “Order Date” column in the “List of Orders” table is set to data type 'Date'.**



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



● **Format the "CustomerName" column into proper case, ensuring consistent capitalization for each word.**

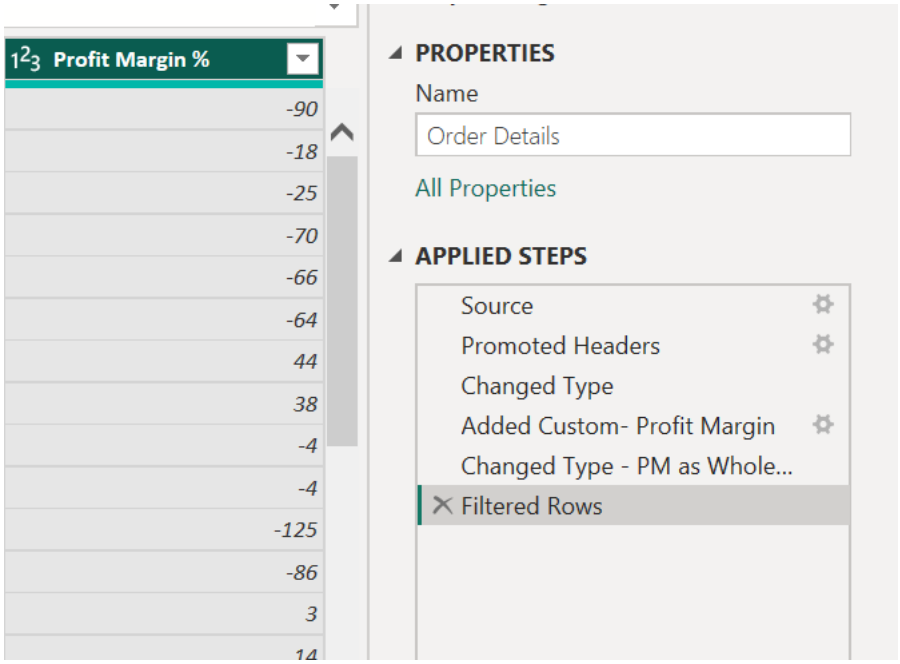
CustomerName
Bharat
Pearl
Jahan
Divsha
Kasheen
Hazel
Sonakshi
Aarushi
Jitesh
Yogesh
Anita
Shrichand
Mukesh
Vandana
Bhavna
Kanak
Sagar
Manju
Ramesh
Sarita

● **Merge the "State" and "City" columns to create a new column named "Location" in the format 'City, State'.**

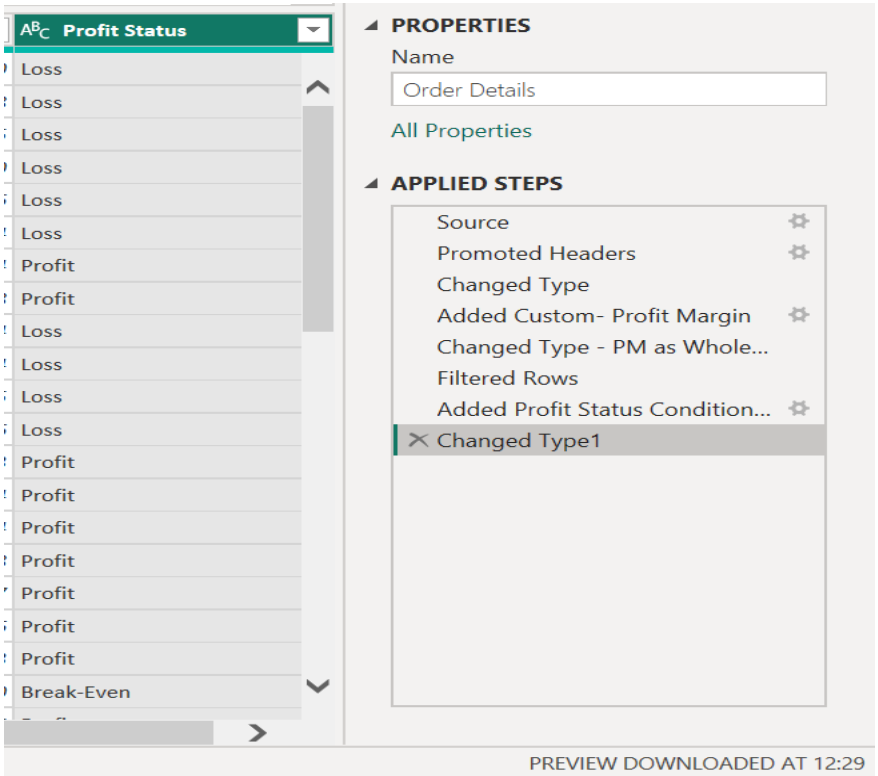
```
,{"City", "State"},Combiner.Combine
```

ne	Location
	Ahmedabad,Gujarat
	Pune,Maharashtra
	Bhopal,Madhya Pradesh
	Jaipur,Rajasthan
	Kolkata,West Bengal
	Bangalore,Karnataka
	Kashmir,Jammu And Kashmir
	Chennai,Tamil Nadu
	Lucknow,Uttar Pradesh
	Patna,Bihar
	Thiruvananthapuram,Kerala
	Chandigarh,Punjab
	Chandigarh,Haryana

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

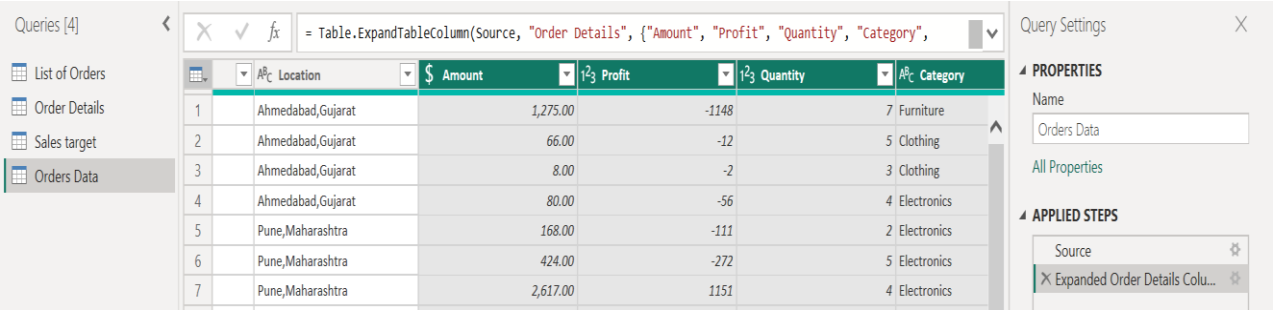


● **Add a new conditional column named "Profit Status" based on the values in the "Profit" column. The conditions are as follows: if the profit is less than 0, the label should be "Loss"; if the profit equals 0, the label should be "Break-Even"; and if the profit is greater than 0, the label should be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

Answer: No missing data in the first 500rows.

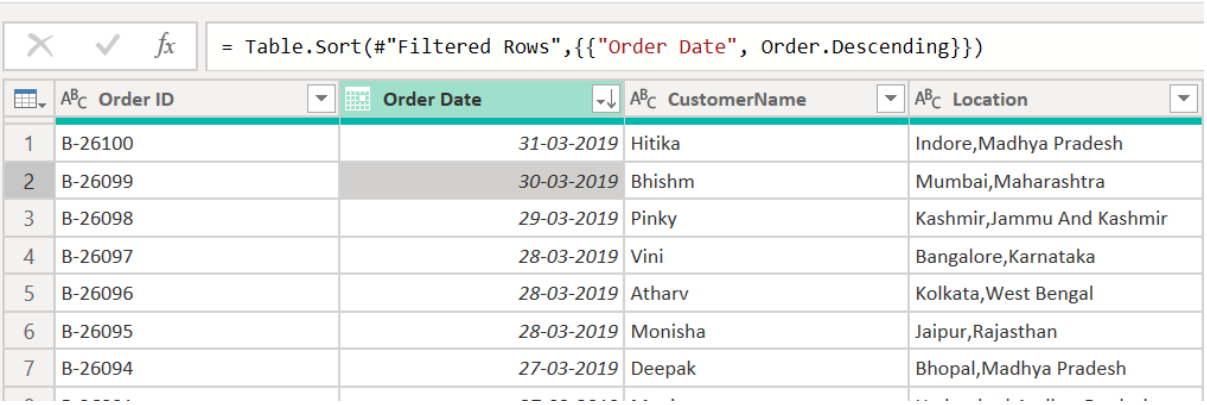
● Check for duplicate rows and define a strategy to handle duplicates.

Answer: Duplicate rows check with “Order ID” in List of Orders and Order Details tables.

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.**

```
= Table.SelectRows(#"Sorted Rows", each ([Location] = "Chennai,Tamil Nadu"))
```

	Order ID	Order Date	CustomerName	Location
1	B-26081	22-03-2019	Aarushi	Chennai,Tamil Nadu
2	B-26018	14-02-2019	Aarushi	Chennai,Tamil Nadu
3	B-26008	09-02-2019	Kalyani	Chennai,Tamil Nadu
4	B-25860	15-11-2018	Akshay	Chennai,Tamil Nadu
5	B-25788	21-09-2018	Dinesh	Chennai,Tamil Nadu
6	B-25716	11-07-2018	Surabhi	Chennai,Tamil Nadu
7	B-25698	23-06-2018	Amisha	Chennai,Tamil Nadu
8	B-25608	08-04-2018	Aarushi	Chennai,Tamil Nadu

Grouping and Aggregating Data:

● **Duplicate the "Order Details" table and calculate the count of each Order ID**

```
= Table.Group(#"Removed Duplicates", {
```

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

Average profit by Category Wise

	Category	Average Profit by Category
1	Furniture	20.44318182
2	Electronics	-19.37894737
3	Clothing	15.29022082

Total amount by Sub-Category Wise.

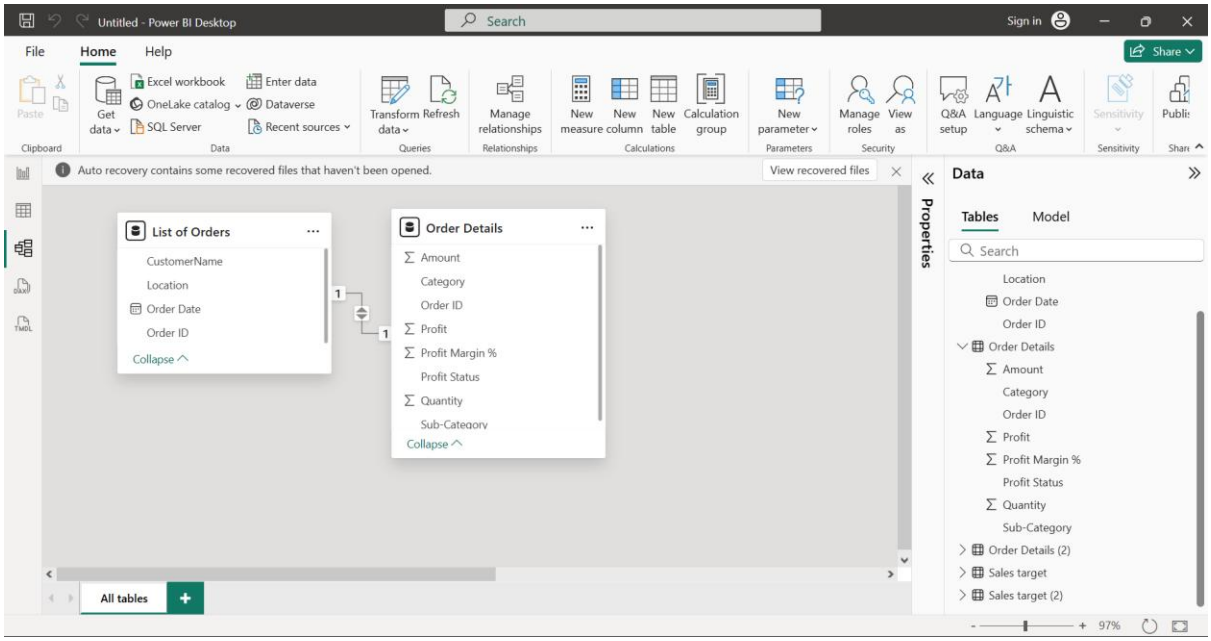
	Sub-Category	Total amount by Sub-category
1	Bookcases	25800
2	Phones	11691
3	Trousers	7109
4	T-shirt	3205
5	Saree	17831
6	Shirt	2535
7	Leggings	851
8	Tables	3967
9	Electronic Games	11942
10	Printers	16822
11	Chairs	5724
12	Hankerchief	4362
13	Stole	7583
14	Skirt	822
15	Furnishings	4295
16	Accessories	9472
17	Kurti	1154

- **Duplicate the "Sales Target" table and aggregate the total target amount by Month of Order Date.**

	Month of Order Date	Total Target by Month
1	01-04-2018	31400
2	01-05-2018	31500
3	01-06-2018	31600
4	01-07-2018	33800
5	01-08-2018	33900
6	01-09-2018	34000
7	01-10-2018	36100
8	01-11-2018	36300
9	01-12-2018	36400
10	01-01-2019	43500
11	01-02-2019	43600
12	01-03-2019	43800

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.