

Power BI Assignment 1 – Data Transformation & Data Modeling

Import Data:

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

Power Query Editor interface showing the 'List of Orders' table. The table has 3 columns: Month of Order Date, Category, and Target. The data is displayed in a grid with 36 rows. The 'Query Settings' pane on the right shows the 'Sales target' query with 'Promoted Headers' and 'Changed Type' steps.

Month of Order Date	Category	Target
01-04-2018	Furniture	10400
01-05-2018	Furniture	10500
01-06-2018	Furniture	10600
01-07-2018	Furniture	10800
01-08-2018	Furniture	10900
01-09-2018	Furniture	11000
01-10-2018	Furniture	11100
01-11-2018	Furniture	11300
01-12-2018	Furniture	11400
01-01-2019	Furniture	11500
01-02-2019	Furniture	11600
01-03-2019	Furniture	11800
01-04-2018	Clothing	12000
01-05-2018	Clothing	12000
01-06-2018	Clothing	12000
01-07-2018	Clothing	14000
01-08-2018	Clothing	14000
01-09-2018	Clothing	14000
01-10-2018	Clothing	16000
01-11-2018	Clothing	16000
01-12-2018	Clothing	16000

Data Transformation:

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

Power Query Editor interface showing the 'List of Orders' table. The table has 5 columns: Order ID, Order Date, Customer Name, State, and City. The data is displayed in a grid with 500 rows. The 'Query Settings' pane on the right shows the 'List of Orders' query with 'Promoted Headers', 'Changed Type', and 'Kept Range of Rows upto 500' steps.

Order ID	Order Date	Customer Name	State	City
B-25601	01-04-2018	Bharat	Gujarat	Ahmedabad
B-25602	01-04-2018	Pearl	Maharashtra	Pune
B-25603	03-04-2018	Jahan	Madhya Pradesh	Bhopal
B-25604	03-04-2018	Divsha	Rajasthan	Jaipur
B-25605	05-04-2018	Kasheen	West Bengal	Kolkata
B-25606	06-04-2018	Hazel	Karnataka	Bangalore
B-25607	06-04-2018	Sonakshi	Jammu and Kashmir	Kashmir
B-25608	08-04-2018	Aarushi	Tamil Nadu	Chennai
B-25609	09-04-2018	Jitesh	Uttar Pradesh	Lucknow
B-25610	09-04-2018	Yogesh	Bihar	Patna
B-25611	11-04-2018	Anita	Kerala	Thiruvananthapuram
B-25612	12-04-2018	Shrichand	Punjab	Chandigarh
B-25613	12-04-2018	Mukesh	Haryana	Chandigarh
B-25614	13-04-2018	Vandana	Himachal Pradesh	Simla
B-25615	15-04-2018	Bhavna	Sikkim	Gangtok
B-25616	15-04-2018	Kanak	Goa	Goa
B-25617	17-04-2018	Sagar	Nagaland	Kohima
B-25618	18-04-2018	Manju	Andhra Pradesh	Hyderabad
B-25619	18-04-2018	Ramesh	Gujarat	Ahmedabad
B-25620	20-04-2018	Sarita	Maharashtra	Pune

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

Untitled - Power Query Editor

File Home Transform Add Column View Tools Help

Group By Use First Row as Headers Count Rows Transpose Reverse Rows Detect Data Type Rename Replace Values Fill Pivot Column Move Unpivot Columns Convert to List

Queries [3]

- List of Orders
- Order Details
- Sales target

Order ID Order Date

1	5601	01-04-2018
2	5602	01-04-2018
3	5603	03-04-2018
4	5604	03-04-2018
5	5605	05-04-2018
6	5606	06-04-2018
7	5607	06-04-2018
8	5608	08-04-2018
9	5609	09-04-2018
10	5610	09-04-2018
11	5611	11-04-2018
12	5612	12-04-2018
13	5613	12-04-2018
14	5614	13-04-2018
15	5615	15-04-2018
16	5616	15-04-2018
17	5617	17-04-2018
18	5618	18-04-2018
19	5619	18-04-2018
20	5620	20-04-2018
21		

5 COLUMNS, 500 ROWS Column profiling based on top 1000 rows

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

Editor

Add Column View Tools Help

Data Type: Fixed decimal number Replace Values Unpivot Columns

Detect Data Type Fill Move

Rename Pivot Column Convert to List

Any Column

fx = Table.TransformColumnTypes(#"Promoted

Order ID	\$ Amount
B-25601	1,275.00
B-25601	66.00
B-25601	8.00
B-25601	80.00
B-25602	168.00

Editor

Add Column View Tools Help

Data Type: Fixed decimal number Replace Values Unpivot Columns

Detect Data Type Fill Move

Rename Pivot Column Convert to List

Any Column

Split Column Format Text Column

fx = Table.TransformColumnTypes(#"Filtered Rows",{"Target", Curr

Month of Order Date	Category	\$ Target
01-04-2018	Furniture	10,400.00
01-05-2018	Furniture	10,500.00
01-06-2018	Furniture	10,600.00
01-07-2018	Furniture	10,800.00
01-08-2018	Furniture	10,900.00
01-09-2018	Furniture	11,000.00

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

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

123 Profit Margin %	
-90	
-18	
-25	
-70	
-66	
-64	
44	
38	
-4	
-4	
-125	
-86	
3	
14	

PROPERTIES

Name

[All Properties](#)

APPLIED STEPS

- Source
- Promoted Headers
- Changed Type
- Added Custom- Profit Margin
- Changed Type - PM as Whole...
- Filtered Rows**

- 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".

A8C Profit Status	
Loss	
Loss	
Loss	
Loss	
Loss	
Loss	
Profit	
Profit	
Loss	
Loss	
Loss	
Loss	
Profit	
Profit	
Profit	
Profit	
Profit	
Profit	
Profit	
Profit	
Break-Even	

PROPERTIES

Name

[All Properties](#)

APPLIED STEPS

- Source
- Promoted Headers
- Changed Type
- Added Custom- Profit Margin
- Changed Type - PM as Whole...
- Filtered Rows
- Added Profit Status Condition...
- Changed Type1**

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.

	Order ID	Location	Amount	Profit	Quantity	Category
1		Ahmedabad,Gujarat	1,275.00	-1148	7	Furniture
2		Ahmedabad,Gujarat	66.00	-12	5	Clothing
3		Ahmedabad,Gujarat	8.00	-2	3	Clothing
4		Ahmedabad,Gujarat	80.00	-56	4	Electronics
5		Pune,Maharashtra	168.00	-111	2	Electronics
6		Pune,Maharashtra	424.00	-272	5	Electronics
7		Pune,Maharashtra	2,617.00	1151	4	Electronics

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 500 rows.

- 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.




	Order ID	Order Date	CustomerName	Location
1	B-26100	31-03-2019	Hitika	Indore,Madhya Pradesh
2	B-26099	30-03-2019	Bhishm	Mumbai,Maharashtra
3	B-26098	29-03-2019	Pinky	Kashmir,Jammu And Kashmir
4	B-26097	28-03-2019	Vini	Bangalore,Karnataka
5	B-26096	28-03-2019	Atharv	Kolkata,West Bengal
6	B-26095	28-03-2019	Monisha	Jaipur,Rajasthan
7	B-26094	27-03-2019	Deepak	Bhopal,Madhya Pradesh

- ◆ 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

  <i>fx</i>		= Table.Group("#Removed Duplicates", {
	AB _C Order ID	1 ² ₃ 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

1.2 Average Profit by Category	
1	Furniture
2	Electronics
3	Clothing

Total amount by Sub-Category Wise.

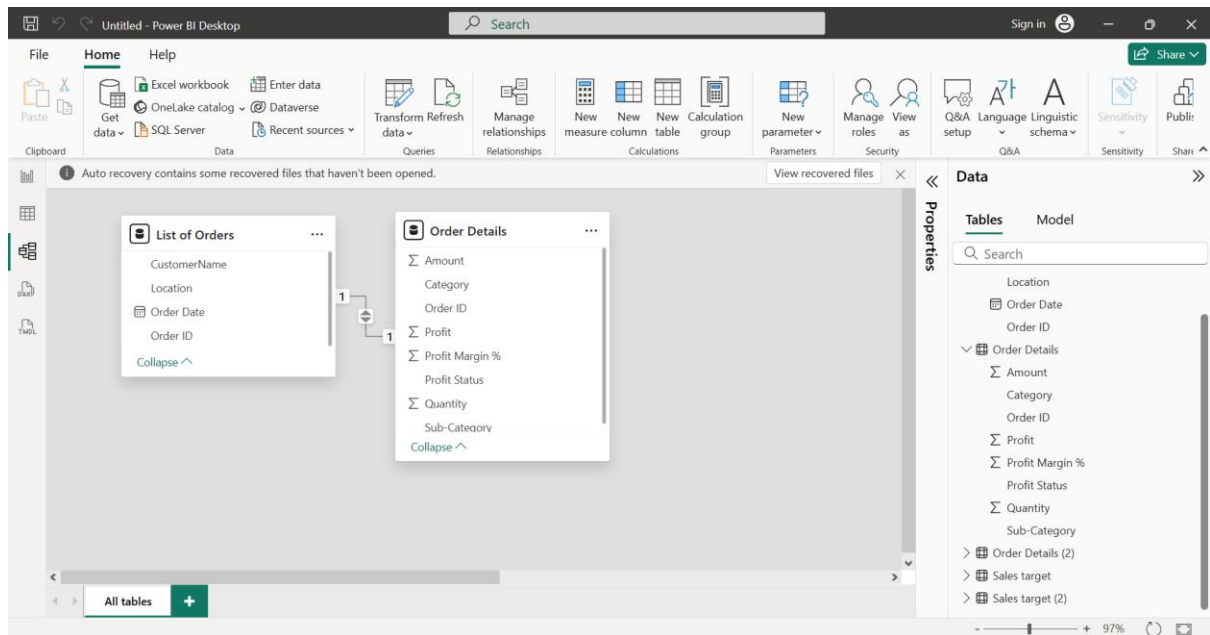
	ABC Sub-Category	1.2 Total amount by Sub-category
1	Bookcases	25800
2	Phones	11691
3	Trousers	7109
4	T-shirt	3205
5	Saree	17831
6	Shirt	2535
7	Leggings	851
8	Tables	3967
9	Electronic Games	11942
10	Printers	16822
11	Chairs	5724
12	Hankerchief	4362
13	Stole	7583
14	Skirt	822
15	Furnishings	4295
16	Accessories	9472
17	Kurti	1154

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

	Month of Order Date	1.2 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.

