

Power BI Assignment 1 – Data Transformation & Data Modeling

Data Transformation:

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

The screenshot shows the Power BI Data Editor interface. The 'Transform' ribbon is visible at the top. In the center, the 'List of Orders' query is displayed as a table with columns: Order ID, Order Date, CustomerName, State, and City. The preview pane shows the first 28 rows of the data. The 'APPLIED STEPS' pane on the right lists the 'Changed Type' step. The status bar at the bottom indicates 'COLUMNS: 500 ROWS' and 'Column profiling based on top 1000 rows'.

"Order Date" column in the "List of Orders" table is set to data type 'Date'

This screenshot shows the same Power BI Data Editor interface as the previous one, but with a different applied step. The 'Renamed Columns' step is listed in the 'APPLIED STEPS' pane. The preview pane shows the first 28 rows of the transformed table, where the 'Order Date' column has been renamed to 'Date'.

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

The screenshot shows the Power BI Query Editor interface. The top ribbon has various data transformation tools like Transpose, Detect Data Type, Pivot Column, and Split Column. The main area displays a table with columns: Order ID, Amount, Profit, Quantity, Category, and Sub-Category. The 'Amount' column is highlighted with a yellow border. The Query Settings pane on the right shows the 'Properties' section with 'Name' set to 'Order Details' and the 'Applied Steps' section showing a step named 'Changed Type1'.

Order ID	Amount	Profit	Quantity	Category	Sub-Category
B-25601	1,275.00	-1148		7 Furniture	Bookcases
B-25601	66.00	-12		5 Clothing	Stole
B-25601	8.00	-2		3 Clothing	Hankerchief
B-25601	80.00	-56		4 Electronics	Electronic Games
B-25602	168.00	-111		2 Electronics	Phones
B-25602	424.00	-272		5 Electronics	Phones
B-25602	2,617.00	1151		4 Electronics	Phones
B-25602	561.00	212		3 Clothing	Saree
B-25602	119.00	-5		8 Clothing	Saree
B-25603	1,355.00	-60		5 Clothing	Trousers
B-25603	24.00	-30		1 Furniture	Chairs
B-25603	193.00	-166		3 Clothing	Saree
B-25603	180.00	5		3 Clothing	Trousers
B-25603	116.00	16		4 Clothing	Stole
B-25603	107.00	36		6 Clothing	Stole
B-25603	12.00	1		2 Clothing	Hankerchief
B-25603	38.00	18		1 Clothing	Kurti
B-25604	65.00	17		2 Clothing	T-shirt
B-25604	157.00	5		9 Clothing	Saree
B-25605	75.00	0		7 Clothing	Saree
B-25606	87.00	4		2 Clothing	Shirt
B-25607	50.00	15		4 Clothing	Leggings
B-25608	1,364.00	-1864		5 Furniture	Tables
B-25608	476.00	0		3 Furniture	Chairs
B-25608	257.00	23		5 Clothing	Hankerchief
B-25608	856.00	385		6 Electronics	Printers
B-25609	485.00	29		4 Electronics	Electronic Games
B-25609	25.00	-5		4 Clothing	Saree

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

The screenshot shows the Power BI Query Editor interface. The top ribbon has various data transformation tools like Transpose, Detect Data Type, Pivot Column, and Split Column. The main area displays a table with columns: Month of Order Date, Category, and Target. The 'Target' column is highlighted with a yellow border. The Query Settings pane on the right shows the 'Properties' section with 'Name' set to 'Sales target' and the 'Applied Steps' section showing a step named 'Changed type1'.

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
01-10-2018	Furniture	11,100.00
01-11-2018	Furniture	11,300.00
01-12-2018	Furniture	11,400.00
01-01-2019	Furniture	11,500.00
01-02-2019	Furniture	11,600.00
01-03-2019	Furniture	11,800.00
01-04-2018	Clothing	12,000.00
01-05-2018	Clothing	12,000.00
01-06-2018	Clothing	12,000.00
01-07-2018	Clothing	14,000.00
01-08-2018	Clothing	14,000.00
01-09-2018	Clothing	14,000.00
01-10-2018	Clothing	16,000.00
01-11-2018	Clothing	16,000.00
01-12-2018	Clothing	16,000.00
01-01-2019	Clothing	16,000.00
01-02-2019	Clothing	16,000.00
01-03-2019	Clothing	16,000.00
01-04-2018	Electronics	9,000.00
01-05-2018	Electronics	9,000.00
01-06-2018	Electronics	9,000.00
01-07-2018	Electronics	9,000.00

"CustomerName" column into proper case, ensuring consistent capitalization for each word

Table

Queries [5]

Any Column Text Column Number Column Date & Time Column Scripts

Applied Steps

- Source
- Promoted Headers
- Changed Type
- Renamed Columns
- Capitalized Each Word

Query Settings

Properties

Name: List of Orders

All Properties

Preview downloaded at 17:02

Order ID	Date	CustomerName	State	City
B-25601	01-04-2018	Kharat	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
B-25621	20-04-2018	Deepak	Madhya Pradesh	Bhopal
B-25622	22-04-2018	Monish	Rajasthan	Jaipur
B-25623	22-04-2018	Atharv	West Bengal	Kolkata
B-25624	22-04-2018	Vini	Karnataka	Bangalore
B-25625	23-04-2018	Pinky	Jammu and Kashmir	Kashmir
B-25626	23-04-2018	Bhishm	Maharashtra	Mumbai
B-25627	23-04-2018	Hitika	Madhya Pradesh	Indore
B-25628	24-04-2018	Pooja	Bihar	Patna

COLUMNS, 500 ROWS Column profiling based on top 1000 rows

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

Table

Queries [5]

Any Column Text Column Number Column Date & Time Column Scripts

Applied Steps

- Source
- Promoted Headers
- Changed Type
- Renamed Columns
- Merged Columns

Query Settings

Properties

Name: List of Orders

All Properties

Preview downloaded at 17:02

Order ID	Date	CustomerName	Location
B-25601	01-04-2018	Bharat	Ahmedabad,Gujarat
B-25602	01-04-2018	Pearl	Pune,Maharashtra
B-25603	03-04-2018	Jahan	Bhopal,Madhya Pradesh
B-25604	03-04-2018	Divsha	Jaipur,Rajasthan
B-25605	05-04-2018	Kasheen	Kolkata,West Bengal
B-25606	06-04-2018	Hazel	Bangalore,Karnataka
B-25607	06-04-2018	Sonakshi	Kashmir,Jammu and Kashmir
B-25608	08-04-2018	Aarushi	Chennai,Tamil Nadu
B-25609	09-04-2018	Jitesh	Lucknow,Uttar Pradesh
B-25610	09-04-2018	Yogesh	Patna,Bihar
B-25611	11-04-2018	Anita	Thiruvananthapuram,Kerala
B-25612	12-04-2018	Shrichand	Chandigarh,Punjab
B-25613	12-04-2018	Mukesh	Chandigarh,Haryana
B-25614	13-04-2018	Vandana	Simla,Himachal Pradesh
B-25615	15-04-2018	Bhavna	Gangtok,Sikkim
B-25616	15-04-2018	Kanak	Goa,Goa
B-25617	17-04-2018	Sagar	Kohima,Nagaland
B-25618	18-04-2018	Manju	Hyderabad,Andhra Pradesh
B-25619	18-04-2018	Ramesh	Ahmedabad,Gujarat
B-25620	20-04-2018	Sarita	Pune,Maharashtra
B-25621	20-04-2018	Deepak	Bhopal,Madhya Pradesh
B-25622	22-04-2018	Monish	Jaipur,Rajasthan
B-25623	22-04-2018	Atharv	Kolkata,West Bengal
B-25624	22-04-2018	Vini	Bangalore,Karnataka
B-25625	23-04-2018	Pinky	Kashmir,Jammu and Kashmir
B-25626	23-04-2018	Bhishm	Mumbai,Maharashtra
B-25627	23-04-2018	Hitika	Indore,Madhya Pradesh
B-25628	24-04-2018	Pooja	Patna,Bihar

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

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

The screenshot shows the Power BI Data Editor interface. On the left, the 'Queries [5]' pane lists 'List of Orders', 'Order Details' (selected), 'Sales target', 'Duplicate order details', and 'Duplicate sales target'. The main area displays a table with columns: \$ Amount, # Profit, # Quantity, # Category, # Sub-Category, and % Profit Margin. A tooltip for the 'Profit Margin' column indicates it is a 'Table.TransformColumnTypes(#'Added Custom',{("Profit Margin", Percentage.Type)})'. To the right, the 'Query Settings' pane shows the 'Name' is 'Order Details' and the 'APPLIED STEPS' section includes 'Added Custom' and 'Changed Type2'.

Add a new conditional column named "Profit Status" based on the values in the "Profit" column.

The screenshot shows the Power BI Data Editor interface. The 'Order Details' query is selected in the 'Queries [5]' pane. The main area displays the same table as before, but now includes a new column '# Profit status' at the end. A tooltip for this column indicates it is a 'Table.AddColumn(#'Changed Type2', "Profit status", each if [Profit] < 0 then "Loss" else if [Profit] = 0 then "Break-Even" else if [Profit] > 0 then "Profit" else null)'. The 'Query Settings' pane shows the 'Name' is 'Order Details' and the 'APPLIED STEPS' section includes 'Added Custom', 'Changed Type2', and 'Added Conditional Column'.

Merging Data (Joins):List of order and order details

The screenshot shows the Microsoft Power BI Data Editor interface. The ribbon at the top includes File, Home, Transform, Add Column, View, Tools, and Help. Below the ribbon, there's a toolbar with various icons for file operations like Close & Apply, New Query, and Data source settings. The main area displays a query titled "Orders data" which performs a nested join between three tables: "List of Orders", "Order ID", and "Order Details". The resulting table has columns: Order ID, Date, CustomerName, Location, and Order Details. On the right side, there are sections for "Query Settings" and "APPLIED STEPS", both currently set to "Source". At the bottom, it shows 5 COLUMNS, 500 ROWS, and a note about column profiling.

Order ID	Date	CustomerName	Location	Order Details
1 B-25601	01-04-2018	Bharat	Ahmedabad,Gujarat	Table
2 B-25602	01-04-2018	Pearl	Pune,Maharashtra	Table
3 B-25603	03-04-2018	Jahan	Bhopal,Madhya Pradesh	Table
4 B-25604	03-04-2018	Divsha	Jaipur,Rajasthan	Table
5 B-25605	05-04-2018	Kashreen	Kolkata,West Bengal	Table
6 B-25606	06-04-2018	Hazel	Bangalore,Karnataka	Table
7 B-25607	06-04-2018	Sonakshi	Kashmir,Jammu and Kashmir	Table
8 B-25608	08-04-2018	Aarushi	Chennai,Tamil Nadu	Table
9 B-25609	09-04-2018	Jitesh	Lucknow,Uttar Pradesh	Table
10 B-25610	09-04-2018	Yogesh	Patna,Bihar	Table
11 B-25611	11-04-2018	Anita	Thiruvananthapuram,Kerala	Table
12 B-25612	12-04-2018	Shrichand	Chandigarh,Punjab	Table
13 B-25613	12-04-2018	Mukesh	Chandigarh,Haryana	Table
14 B-25614	13-04-2018	Vandana	Simla,Himachal Pradesh	Table
15 B-25615	15-04-2018	Bhavana	Gangtok,Sikkim	Table
16 B-25616	15-04-2018	Kanak	Goa,Goa	Table
17 B-25617	17-04-2018	Sagar	Kohima,Nagaland	Table
18 B-25618	18-04-2018	Manju	Hyderabad,Andhra Pradesh	Table
19 B-25619	18-04-2018	Ramesh	Ahmedabad,Gujarat	Table
20 B-25620	20-04-2018	Sarita	Pune,Maharashtra	Table
21 B-25621	20-04-2018	Deepak	Bhopal,Madhya Pradesh	Table
22 B-25622	22-04-2018	Monisha	Jaipur,Rajasthan	Table
23 B-25623	22-04-2018	Athvar	Kolkata,West Bengal	Table
24 B-25624	22-04-2018	Vini	Bangalore,Karnataka	Table
25 B-25625	23-04-2018	Pinky	Kashmir,Jammu and Kashmir	Table
26 B-25626	23-04-2018	Bhishm	Mumbai,Maharashtra	Table
27 B-25627	23-04-2018	Hittka	Indore,Madhya Pradesh	Table
28 B-25628	24-04-2018	Pooja	Patna,Bihar	Table

Sorting and Filtering Data:

Queries [6]

Table.ExpandTableColumn("#'Filtered Rows'", "Order Details", {"Category"}, {"Order Details.Category"})

	A ^b Order ID	Date	A ^b CustomerName	A ^b Location	A ^b Order Details.Category
1	B-26081	22-03-2019	Aarushi	Chennai,Tamil Nadu	Clothing
2	B-26081	22-03-2019	Aarushi	Chennai,Tamil Nadu	Electronics
3	B-26081	22-03-2019	Aarushi	Chennai,Tamil Nadu	Furniture
4	B-26081	22-03-2019	Aarushi	Chennai,Tamil Nadu	Clothing
5	B-26081	22-03-2019	Aarushi	Chennai,Tamil Nadu	Clothing
6	B-26081	22-03-2019	Aarushi	Chennai,Tamil Nadu	Clothing
7	B-26018	14-02-2019	Aarushi	Chennai,Tamil Nadu	Clothing
8	B-26018	14-02-2019	Aarushi	Chennai,Tamil Nadu	Furniture
9	B-26008	09-02-2019	Kalyani	Chennai,Tamil Nadu	Clothing
10	B-26008	09-02-2019	Kalyani	Chennai,Tamil Nadu	Clothing
11	B-26008	09-02-2019	Kalyani	Chennai,Tamil Nadu	Clothing
12	B-26008	09-02-2019	Kalyani	Chennai,Tamil Nadu	Clothing
13	B-25860	15-11-2018	Akshay	Chennai,Tamil Nadu	Clothing
14	B-25788	21-09-2018	Dinesh	Chennai,Tamil Nadu	Clothing
15	B-25716	11-07-2018	Surabhi	Chennai,Tamil Nadu	Clothing
16	B-25698	23-06-2018	Amisha	Chennai,Tamil Nadu	Clothing
17	B-25698	23-06-2018	Amisha	Chennai,Tamil Nadu	Clothing
18	B-25698	23-06-2018	Amisha	Chennai,Tamil Nadu	Electronics
19	B-25698	23-06-2018	Amisha	Chennai,Tamil Nadu	Clothing
20	B-25698	23-06-2018	Amisha	Chennai,Tamil Nadu	Clothing
21	B-25698	23-06-2018	Amisha	Chennai,Tamil Nadu	Furniture
22	B-25608	08-04-2018	Aarushi	Chennai,Tamil Nadu	Clothing
23	B-25608	08-04-2018	Aarushi	Chennai,Tamil Nadu	Electronics
24	B-25608	08-04-2018	Aarushi	Chennai,Tamil Nadu	Furniture
25	B-25608	08-04-2018	Aarushi	Chennai,Tamil Nadu	Furniture

Query Settings

▲ PROPERTIES
Name
Orders data
All Properties

▲ APPLIED STEPS
Source
Sorted Rows
Filtered Rows
Expanded Order Details

Grouping and Aggregating Data Sales target

Screenshot of Power Query Editor showing a query named "Duplicate sales target". The query uses the formula `=Table.Group(#"Changed Type", {"Month of Order Date"}, {"Count", each List.Sum([Target]), type nullable number})`. The table preview shows data grouped by Month of Order Date, with a column for Count.

Month of Order Date	Count
01-04-2018	31400
01-05-2018	31500
01-06-2018	31600
01-07-2018	33800
01-08-2018	33900
01-09-2018	34000
01-10-2018	36100
01-11-2018	36300
01-12-2018	36400
01-01-2019	43500
01-02-2019	43600
01-03-2019	43800

Grouping and Aggregating Data Count of order id:

Screenshot of Power Query Editor showing a query named "Duplicate order details". The query uses the formula `=Table.Group(#"Changed Type", {"Order ID"}, {"Count", each Table.RowCount(_), Int64.Type})`. The table preview shows data grouped by Order ID, with a column for Count.

Order ID	Count
B-25601	4
B-25602	5
B-25603	8
B-25604	2
B-25605	1
B-25606	1
B-25607	1
B-25608	4
B-25609	2
B-25610	6
B-25611	1
B-25612	1
B-25613	1
B-25614	2
B-25615	1
B-25616	4
B-25617	1
B-25618	2
B-25619	1
B-25620	1
B-25621	3
B-25622	1
B-25623	4
B-25624	1
B-25625	3
B-25626	2
B-25627	1
B-25628	3

Average of profit category

The screenshot shows the Power BI Query Editor interface. The top ribbon has tabs like Home, Transform, Model, View, Insert, and Help. The main area displays a query step:

```
= Table.Group(#"Renamed Columns", {"Category"}, {"Count": each List.Average([Profit]), type nullable number})
```

The results pane shows a table with three rows:

Category	Count
Furniture	9.456790123
Clothing	11.76290832
Electronics	34.07142857

The Properties pane on the right shows the following settings:

- PROPERTIES**
 - Name: DuplicatesOrder Details
 - All Properties
- APPLIED STEPS**
 - Source
 - Promoted Headers
 - Changed Type
 - Added Custom
 - Renamed Columns
 - Grouped Rows
 - Added Conditional Column

Data Modeling Relationship between order id:

