

## Assignment Power BI-1

I.

### Import Data:

1.Import “List of Orders.csv” into Power BI.

The screenshot shows the Power BI desktop application. On the left, there's a ribbon with Home selected. In the center, a preview of the 'List of Orders.csv' data is displayed in a table format. The columns are labeled: Column1, Column2, Column3, Column4, and Column5. The data includes various order details such as Order ID, Order Date, Customer Name, State, and City. At the bottom of the preview, it says 'The data in the preview has been truncated due to size limits.' Below the preview, there are buttons for 'Extract Table Using Examples', 'Load', 'Transform Data', and 'Cancel'. The overall interface is clean and professional, typical of Microsoft's software design.

2.Open “List of Orders” in Power Query Editor by clicking on ‘Transform’.

The screenshot shows the Power Query Editor window. The top menu bar includes File, Home, Transform, Add Column, View, Tools, and Help. The main area displays a table titled 'List of Orders' with five columns: Column1, Column2, Column3, Column4, and Column5. The data is identical to the one shown in the Power BI preview. To the right of the table, there's a 'Transform' ribbon with various data manipulation tools like 'Data Type: Text', 'Use First Row as Headers', 'Split Column', 'Group By', and 'Replace Values'. A 'Query Settings' pane on the right shows the query name 'List of Orders' and a step named 'Changed Type'. The bottom status bar indicates '5 COLUMNS, 561 ROWS' and 'Column profiling based on top 1000 rows'.

3.Import “Order Details.csv” and “Sales target.csv” into Power Query Editor.

## II.

### 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’.

The screenshot shows a software interface with a menu bar (File, Home, Help, Tab) and a toolbar with icons for Name, Data type, and Structure. A table is displayed with the following data:

Order ID	Amount	Profit
B-25604	65	
B-25606	87	
B-25607	50	
B-25615	68	
B-25616	42	
B-25619	353	
B-25623	53	
B-25624	26	
B-25625	97	
B-25628	45	
B-25629	1560	
B-25630	133	
B-25635	40	
B-25636	637	
B-25637	117	

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

The screenshot shows the Power Query Editor with the following settings:

- From Number: None
- From Date & Time: None
- Query Settings:
  - Properties:
    - Name: List of Orders
    - All Properties
  - Applied Steps:
    - Source
    - Changed Type
    - Promoted Headers
    - Changed Type1
    - Removed Duplicates
    - Capitalized Each Word
    - Merged Columns

A <sup>B</sup> CustomerName	A <sup>B</sup> State	A <sup>B</sup> City
Bharat	Gujarat	Ahmedabad
Pearl	Maharashtra	Pune
Jahan	Madhya Pradesh	Bhopal
Divsha	Rajasthan	Jaipur
Kasheen	West Bengal	Kolkata
Hazel	Karnataka	Bangalore
Sonakshi	Jammu and Kashmir	Kashmir
Aarushi	Tamil Nadu	Chennai
Jitesh	Uttar Pradesh	Lucknow
Yogesh	Bihar	Patna
Anita	Kerala	Thiruvananthapuram
Shrichand	Punjab	Chandigarh
Mukesh	Haryana	Chandigarh
Vandana	Himachal Pradesh	Simla
Bhavna	Sikkim	Gangtok

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

Steps:

Go to power query - transform tab then select the two columns. click merge column to combine the city and state separated by ,

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

#### Steps:

Go to power query then select the specified column in the table “order details” Create the custom column and apply the formula for amount and profit get profit Margin

- 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".

#### Steps:

Create the “profile status” column add the conditional column in the power query Then apply the conditions if and if else

### III.1

#### 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.

#### Steps:

Go to the Home tab just Click **Merge Queries** in power query Choose **Merge Queries as a New** then perform the merge operation .

Choose the tables **"List of orders"** and **"Orders Details"** and select the fields **Order ID** merge done then expand the table.

The screenshot shows the Power BI desktop interface with the 'Queries' pane open. The 'Orders Data' query is selected. The table 'Location' is expanded, showing detailed information for each location. The columns displayed are Order ID, Amount, Quantity, Category, and Profit Margin. The data includes entries for 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; Simla, Himachal Pradesh; Gangtok, Sikkim; Goa, Goa; and Kohima, Nagaland.

### III.2

#### 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.

#### Steps:

In “orders data” table Got to select the Orders Date in the table perform the filters operation based on the states.

The screenshot shows the Power BI desktop interface with the 'Queries' pane open. The 'Orders Data' query is selected. A filter has been applied to the 'Location' column, specifically selecting rows where the location is "Chennai,Tamil Nadu". The resulting table shows order details for customers Amisha, Aarushi, Dinesh, Akshay, Surabhi, Kalyani, and Aarushi, all from Chennai, Tamil Nadu.

### III.3

#### 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.

## steps:

Duplicate “Orders Details” Table. once created  
then  
Select Category Column - Using **groupby** aggregate function to calculate the **Average** to generate the Average profit of category

The screenshot shows the Power BI Data Editor interface. On the left, there's a navigation pane with 'Queries [6]' and a list of tables: 'List of Orders', 'Order Details', 'Sales target', 'Orders Data', 'Sales target (2)', and 'Order Details (2)' (which is selected). The main area displays a table with three rows and two columns. The first column is 'Category' (containing 'Furniture', 'Electronics', and 'Clothing') and the second column is '1.2 Average Profit' (containing values 20.44318182, -19.57894737, and 15.29022082). To the right of the table are 'Query Settings' and 'APPLIED STEPS' panes.

This screenshot shows the Power BI Data Editor with a more detailed view of the 'Order Details' table. The table has columns: Order ID, Order Date, CustomerName, Location, Order ID.1, Amount, Quantity, Category, and Profit Margin. Below the table, the 'Data' pane shows the data model with various measures and columns listed under categories like 'Order Details (2)', 'Orders Data', and 'Sales target'.

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

## Steps:

I have to create the new month column in the Sale Target Table. once created  
then

**Select MONTH Column - Using `groupby` aggregate function to calculate the `SUM` in the Month wise Total Target**

The screenshot shows the Power BI Query Editor interface. The main area displays a table with two columns: 'Month Name' and 'Total Target'. The 'Month Name' column lists months from April to March. The 'Total Target' column contains corresponding numerical values. The formula bar at the top shows the query: `= Table.Group(#"Inserted Month Name", {"Month Name"}, {("Total Target", each List.Sum([Target]), type nullable)}`. The 'APPLIED STEPS' pane on the right shows the step 'Grouped Rows'.

Month Name	Total Target
April	31400
May	31500
June	31600
July	35800
August	35900
September	34000
October	36100
November	36300
December	36400
January	49500
February	49600
March	49800

#### IV.

#### Data Modeling:

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

steps:

Go to powerbi click on Model icon then Create the relation between Order ID to order ID between two Tables

The screenshot shows the Power BI Data Model view. A relationship is being created between the 'List of Orders' table and the 'Order Details' table. The 'List of Orders' table has columns: CustomerName, Location, Order Date, and Order ID. The 'Order Details' table has columns: Amount, Category, Order ID, Profit, Profit Margin, and Profit Status. The relationship is defined by the 'Order ID' column in both tables. The cardinality is set to 'Many to one (\*:1)'. The relationship is active and has a cross-filter direction of 'Both'. There is an option to apply security filters in both directions, which is set to 'No'.

**Edit relationship**

Select tables and columns that are related.

From table: List of Orders

CustomerName	Location	Order Date	Order ID
Hitika	Indore, Madhy...	23-04-2018	B-25627
Ashmi	Indore, Madhy...	26-04-2018	B-25637
Yaanvi	Indore, Madhy...	01-05-2018	B-25645

To table: Order Details

Amount	Category	Order ID	Profit	Profit Margin	Profit Status	Quantity
65	Clothing	B-25604	17	2620.0%	profit	2
87	Clothing	B-25606	4	460.0%	profit	2
50	Clothing	B-25607	15	3000.0%	profit	4

Cardinality: One to many (1\*)

Cross-filter direction: Single

Make this relationship active

Apply security filter in both directions

Assume referential integrity

Save Cancel

- 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.

### Steps:

Go to Power bi click the Model icon then create the relationship between the two table just drag and drop the specified column and choose the relationship Save and apply .

**Edit relationship**

Select tables and columns that are related.

From table: Order Details

Amount	Category	Order ID	Profit	Profit Margin	Profit Status	Quantity
65	Clothing	B-25604	17	2620.0%	profit	2
87	Clothing	B-25606	4	460.0%	profit	2
50	Clothing	B-25607	15	3000.0%	profit	4

To table: Sales target

Category	Month of Ord...
Furniture	Friday, April 1...
Furniture	Sunday, May ...
Furniture	Wednesday, J...

Cardinality: Many to many (\*:\*)

Cross-filter direction: Both

Make this relationship active

Apply security filter in both directions

Assume referential integrity

Save Cancel

**Verification:**

Go and check with manage relationship in the powerbi

<input type="checkbox"/> Order Details (Category)		Sales target (Category)	Active	...
<input type="checkbox"/> Orders Data (Order ID)		List of Orders (Order ID)	Active	...