Power BI Project Work - 1

This project work is divided into 3 sections and is to be completed in that order.

Section 1

Using the FOODMART dataset provided separately, perform the suggested transforms on respective files.

Important Note: Store a separate PBIX file for each exercise to help retain the changes and review them during evaluation. Name these files as Exercise1, Exercise2 etc.

Exercise 1

Use the **Calendar-Lookup.csv** file to perform the following transforms.

1. Promote header row.
2. Calculate columns based on the date column using appropriate functions as per below image.

date	Year	Month	Quarter	WeekOfYear	Day Name
1/1/1997	1997	1	2	1	Wednesday
1/1/1997	1997	1	2	1	Thursday
1/3/1997	1997	1	2	1	Friday
1/4/1997	1997	1	2	1	Saturday
1/5/1997	1997	1	2	2	Sunday
1/6/1997	1997	1	2	2	Monday
1/7/1997	1997	1	2	2	Tuesday
1/8/1997	1997	1	2	2	Wednesday
1/9/1997	1997	1	2	2	Thursday
1/10/1997	1997	1	2	2	Friday
1/11/1997	1997	1	2	2	Saturday

Exercise 2

Use the **FoodMart-Transactions-1997.csv** file to perform the following transforms.

1. Calculate a conditional column **Order Size** using the following *if* logic:

   If quantity >5, Order Size = "Large"

   If quantity is from 2-5, Order Size = "Medium"

   If quantity =1, Order Size = "Small"

Otherwise Order Size = "Other"

	transaction_date	stock_date	product_id	customer_id	store_id	quantity	Order Size
1	01-01-1997	12/31/1996	869	3449	6	5	Medium
2	01-01-1997	12/31/1996	1472	3449	6	3	Medium
3	01-01-1997	12/28/1996	76	3449	6	4	Medium
4	01-01-1997	12/26/1996	320	3449	6	3	Medium
5	01-01-1997	12/25/1996	4	3449	6	4	Medium
6	01-01-1997	12/30/1996	952	3449	6	4	Medium

2. Create a copy of this query and then create a summary table from it, that shows product_id and total quantity as shown below. Also rename the new dataset as ProductQty.

	product_id	total quantity
1	869	216
2	1472	180
3	76	173
4	320	160
5	4	155
6	952	267
7	1222	192
8	517	160
9	1359	161
10	357	202
11	1426	192
12	190	159

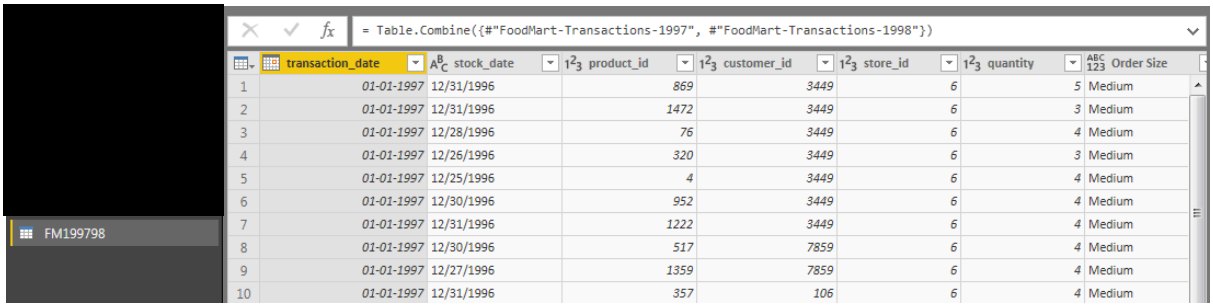
3. Add the **Product-Lookup.csv** to the Power Query editor and then create a Merged Query combining the **FoodMart-Transactions-1997** query with Product-Lookup query to produce the following query and rename it to FoodProduct.

	stock_date	product_id	customer_id	store_id	quantity	Order Size	Product-Lookup
1	12/31/1996	869	3449	6	5	Medium	Table
2	12/31/1996	1472	3449	6	3	Medium	Table
3	12/28/1996	76	3449	6	4	Medium	Table
4	12/26/1996	320	3449	6	3	Medium	Table
5	12/25/1996	4	3449	6	4	Medium	Table
6	12/30/1996	952	3449	6	4	Medium	Table

4. Next, expand the table in last column to just select the three columns shown below on the right-hand side.

	store_id	quantity	Order Size	product_brand	product_name	product_retail_price
1	6	5	Medium	Nationeel	Nationeel Grape Fruit Roll	2.12
2	13	2	Medium	Nationeel	Nationeel Grape Fruit Roll	2.12
3	7	4	Medium	Washington	Washington Berry Juice	2.85
4	6	3	Medium	Fort West	Fort West Fudge Cookies	2.2
5	3	2	Medium	Fort West	Fort West Fudge Cookies	2.2
6	7	4	Medium	Washington	Washington Mango Drink	0.74

5. Add **FoodMart-Transactions-1998.csv** to Power Query editor and then **append** it to **FoodMart-Transactions-1997** query to produce a new query named **FM199798**.



	transaction_date	stock_date	product_id	customer_id	store_id	quantity	Order Size
1	01-01-1997	12/31/1996	869	3449	6	5	Medium
2	01-01-1997	12/31/1996	1472	3449	6	3	Medium
3	01-01-1997	12/28/1996	76	3449	6	4	Medium
4	01-01-1997	12/26/1996	320	3449	6	3	Medium
5	01-01-1997	12/25/1996	4	3449	6	4	Medium
6	01-01-1997	12/30/1996	952	3449	6	4	Medium
7	01-01-1997	12/31/1996	1222	3449	6	4	Medium
8	01-01-1997	12/30/1996	517	7859	6	4	Medium
9	01-01-1997	12/27/1996	1359	7859	6	4	Medium
10	01-01-1997	12/31/1996	357	106	6	4	Medium

Exercise 3

Use the **Customer-Lookup.csv** file to perform the following transforms.

1. Create a copy of the query and from the original query, delete all columns **except** the following.

   customer_id

   customer_acct_num

   first_name

   last_name

   customer_address

   customer_city

   customer_state_province

2. Add a new column full_name that combines first_name and last_name separated by a space and in capital letters.

customer_id	customer_acct_num	first_name	last_name	customer_address	customer_city	customer_state_province	full_name
106	88556258678	John	Stewart	7808 Brown St.	Long Beach	CA	JOHN STEWART
258	90463679432	John	Minker	1061 Buskrik Avenue	Coronado	CA	JOHN MINKER
282	90780995500	John	Styles	4016 Boyd	Spring Valley	CA	JOHN STYLES
296	90945323700	John	Baker	1349 Palm Ave.	Los Angeles	CA	JOHN BAKER
333	91333943605	John	Beaver	6146 Holland Drive	Newport Beach	CA	JOHN BEAVER
556	94197571873	John	Bennetts	7047 Terra Granda	San Jose	CA	JOHN BENNETTS

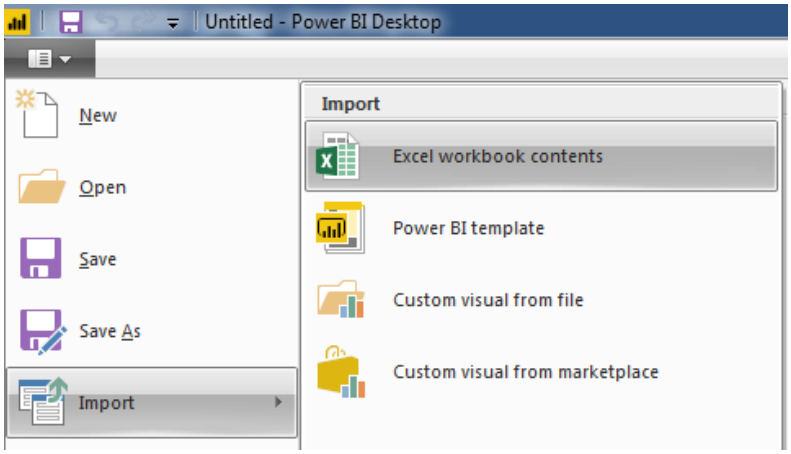
3. From second copy of Customer_Lookup query, remove the first 7 columns.
4. Split the yearly_income column into 2 parts using required delimiter.

	customer_postal_code	customer_country	birthdate	marital_status	yearly_income.1	yearly_income.2
1	15057	Mexico	8/26/1961	M	$30K	$50K
2	17172	Canada	7/3/1915	S	$70K	$90K
3	73980	USA	6/21/1910	M	$50K	$70K
4	74674	Canada	6/20/1969	M	$10K	$30K
5	57355	USA	5/10/1951	S	$30K	$50K
6	90792	USA	10/8/1942	S	$70K	$90K

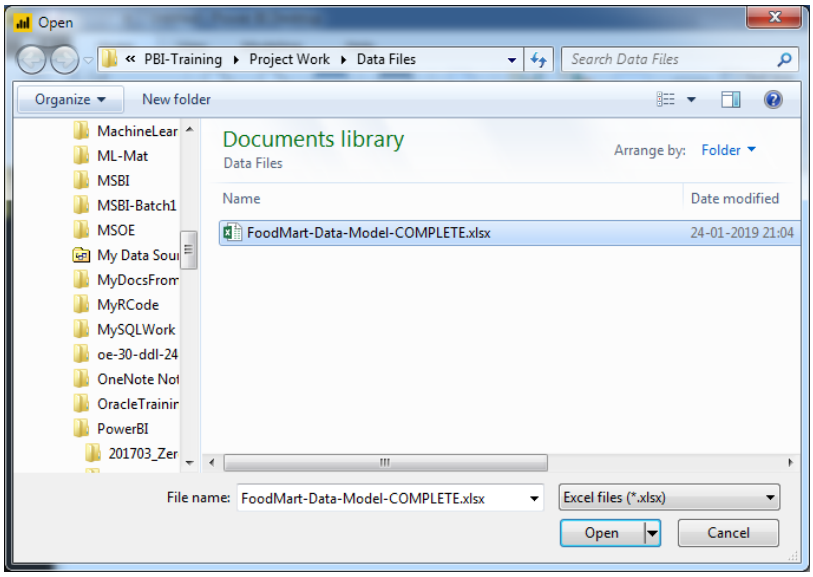
Section 2

In this section, a ready data model, complete with all necessary calculated columns and measures has to be imported into Power BI and then you would complete additional tasks thereafter.

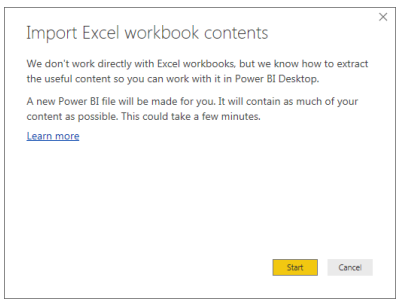
1. In Power BI, open file menu and select **Import -> Excel workbook contents**. (see image below)



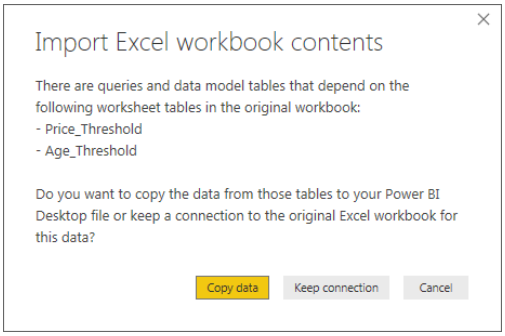
2. Select the **FoodMart-Data-Model-COMPLETE.xlsx** file into Open file dialog box.



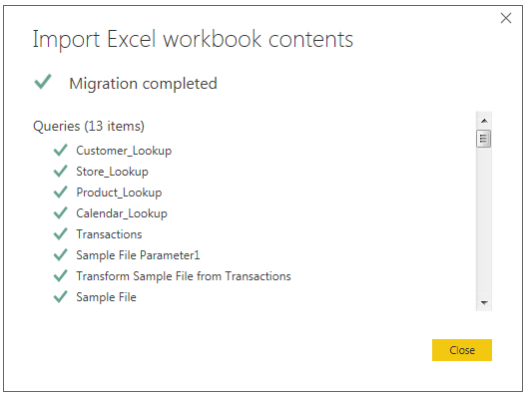
3. You will see following dialog box. You may optionally read the text or click the **Start** button.



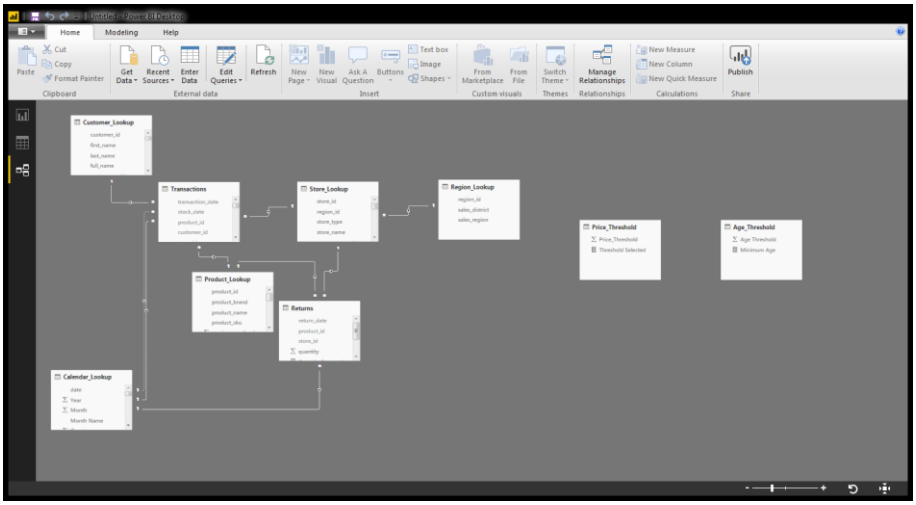
4. As the import starts, in this particular case, it will prompt you saying, there is dependency of some queries and tables in the original workbook and should Power BI copy or keep connection. **Select Copy data.**



5. Once import finishes successfully, it will display following dialog box.



6. Click Close button and switch to Relationships view in Power BI to check the data model diagram.



7. This data model represents transaction data of a FOODMART. You will use this to create dashboard as described in the next section, but you will examine the calculated columns/ measures and additional tables first.

8. Switch to data view and lookup following measures from respective tables.
    a. **Age Threshold** -> *Minimum Age*
    b. **Price Threshold** -> *Threshold Selected*
    c. **Returns ->** *Quantity Returned*
    d. **Returns ->** *Return Rate*
9. Similarly check other tables measures to understand them.
10. Once you finish, save the file as **FOODMART.PBIX** before proceeding.

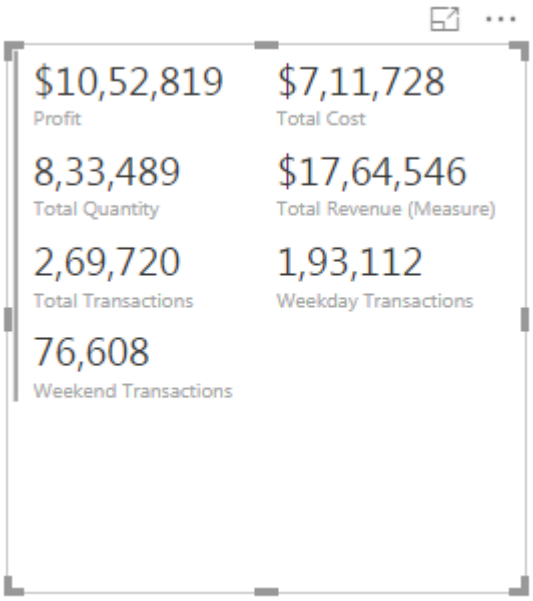
Section 3

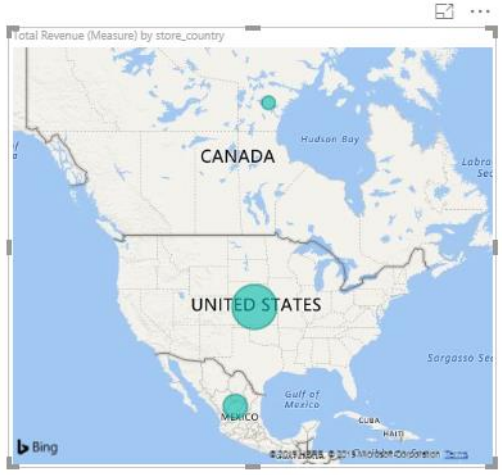
In this section, you will create a report that will summary and visuals using above data.

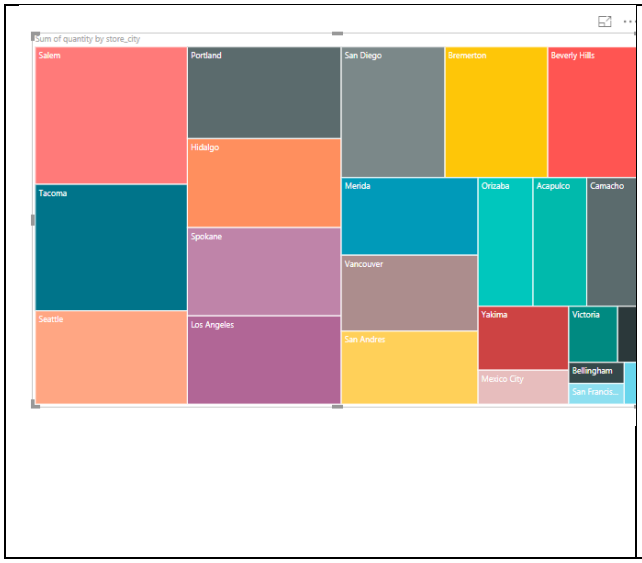
Once the report is ready, you will publish it on the Power BI Service and create **subject specific dashboards** * out of the report.

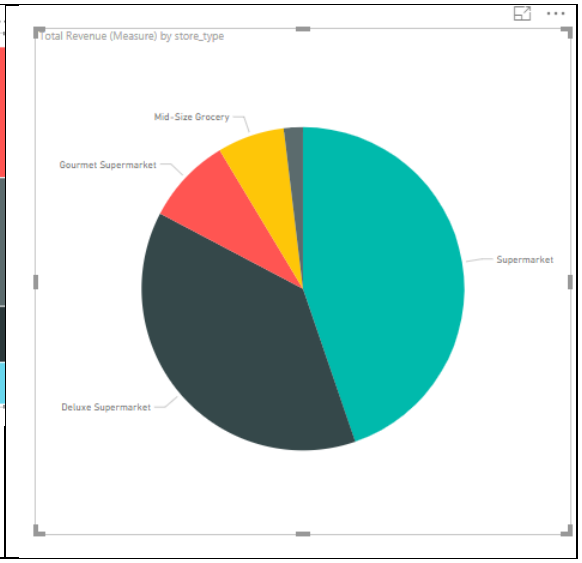
* E.g. A dashboard showing revenue details, another showing store specific details, one more for customer details etc.

Important Note: These are representative visuals, you can include more of your choice and format the entire report as attractive as possible.






Sum of quantity by store_city
Salem
Portland
San Diego
Bremerton
Beverly Hills
Hidalgo
Tacoma
Merida
Orizaba
Acapulco
Camacho
Spokane
Vancouver
Seattle
Los Angeles
Yakima
Victoria
San Andres
Bellingham
Mexico City
San Francis...


Total Revenue (Measure) by store_type
Mid-Size Grocery
Gourmet Supermarket
Supermarket
Deluxe Supermarket