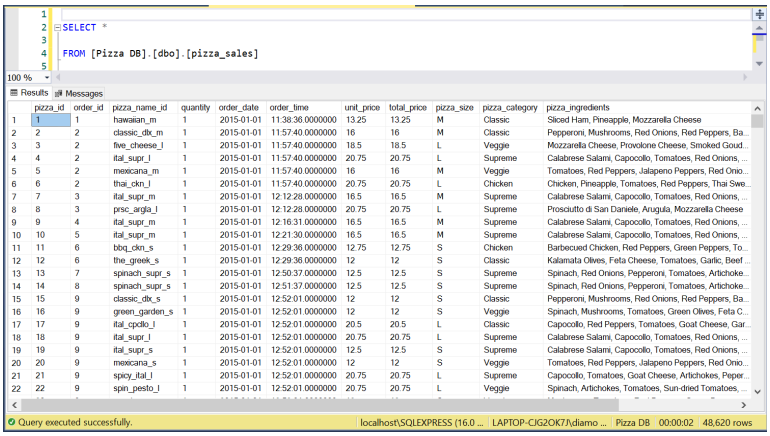
SECTION 1: Most popular combinations (SQL)
SECTION 2: Defining and analyzing KPIs using dashboards (Power BI)

SECTION 1:

The goal of this section is to find the 3 most popular combinations of different items that customers buy in order to advertise new Medium sized combo deals that will yield higher revenue for the upcoming quarters..

The data was downloaded from this folder: https://drive.google.com/drive/folders/17U0ah6Q4MJM_wIn_Xl4fHc-1fO6Q4s6z.

1. Import the transaction record into SSMS.
    a. SELECT *
    FROM [Pizza DB].[dbo].[pizza_sales]
    b.
    c. 

	pizza_id	order_id	pizza_name_id	quantity	order_date	order_time	unit_price	total_price	pizza_size	pizza_category	pizza_ingredients
1	1	1	hawaiian_m	1	2015-01-01	11:38:36.0000000	13.25	13.25	M	Classic	Sliced Ham, Pineapple, Mozzarella Cheese
2	2	2	classic_dlx_m	1	2015-01-01	11:57:40.0000000	16	16	M	Classic	Pepperoni, Mushrooms, Red Onions, Red Peppers, Ba...
3	3	2	five_cheese_l	1	2015-01-01	11:57:40.0000000	18.5	18.5	L	Veggie	Mozzarella Cheese, Provolone Cheese, Smoked Goud...
4	4	2	ital_supr_l	1	2015-01-01	11:57:40.0000000	20.75	20.75	L	Supreme	Calabrese Salami, Capocollo, Tomatoes, Red Onions, ...
5	5	2	mexicana_m	1	2015-01-01	11:57:40.0000000	16	16	M	Veggie	Tomatoes, Red Peppers, Jalapeno Peppers, Red Onio...
6	6	2	thai_ckn_l	1	2015-01-01	11:57:40.0000000	20.75	20.75	L	Chicken	Chicken, Pineapple, Tomatoes, Red Peppers, Thai Swe...
7	7	3	ital_supr_m	1	2015-01-01	12:12:28.0000000	16.5	16.5	M	Supreme	Calabrese Salami, Capocollo, Tomatoes, Red Onions, ...
8	8	3	prsc_argla_l	1	2015-01-01	12:12:28.0000000	20.75	20.75	L	Supreme	Prosciutto di San Daniele, Arugula, Mozzarella Cheese
9	9	4	ital_supr_m	1	2015-01-01	12:16:31.0000000	16.5	16.5	M	Supreme	Calabrese Salami, Capocollo, Tomatoes, Red Onions, ...
10	10	5	ital_supr_m	1	2015-01-01	12:21:30.0000000	16.5	16.5	M	Supreme	Calabrese Salami, Capocollo, Tomatoes, Red Onions, ...
11	11	6	bbq_ckn_s	1	2015-01-01	12:29:36.0000000	12.75	12.75	S	Chicken	Barbecued Chicken, Red Peppers, Green Peppers, To...
12	12	6	the_greek_s	1	2015-01-01	12:29:36.0000000	12	12	S	Classic	Kalamata Olives, Feta Cheese, Tomatoes, Garlic, Beef ...
13	13	7	spinach_supr_s	1	2015-01-01	12:50:37.0000000	12.5	12.5	S	Supreme	Spinach, Red Onions, Pepperoni, Tomatoes, Artichoke...
14	14	8	spinach_supr_s	1	2015-01-01	12:51:37.0000000	12.5	12.5	S	Supreme	Spinach, Red Onions, Pepperoni, Tomatoes, Artichoke...
15	15	9	classic_dlx_s	1	2015-01-01	12:52:01.0000000	12	12	S	Classic	Pepperoni, Mushrooms, Red Onions, Red Peppers, Ba...
16	16	9	green_garden_s	1	2015-01-01	12:52:01.0000000	12	12	S	Veggie	Spinach, Mushrooms, Tomatoes, Green Olives, Feta C...
17	17	9	ital_cpdlo_l	1	2015-01-01	12:52:01.0000000	20.5	20.5	L	Classic	Capocollo, Red Peppers, Tomatoes, Goat Cheese, Gar...
18	18	9	ital_supr_l	1	2015-01-01	12:52:01.0000000	20.75	20.75	L	Supreme	Calabrese Salami, Capocollo, Tomatoes, Red Onions, ...
19	19	9	ital_supr_s	1	2015-01-01	12:52:01.0000000	12.5	12.5	S	Supreme	Calabrese Salami, Capocollo, Tomatoes, Red Onions, ...
20	20	9	mexicana_s	1	2015-01-01	12:52:01.0000000	12	12	S	Veggie	Tomatoes, Red Peppers, Jalapeno Peppers, Red Onio...
21	21	9	spicy_ital_l	1	2015-01-01	12:52:01.0000000	20.75	20.75	L	Supreme	Capocollo, Tomatoes, Goat Cheese, Artichokes, Peper...
22	22	9	spin_pesto_l	1	2015-01-01	12:52:01.0000000	20.75	20.75	L	Veggie	Spinach, Artichokes, Tomatoes, Sun-dried Tomatoes, ...

2. We will now count the amount of time customers order different combinations of pizzas. From this result, we will make combo deals for “The Hawaiian Pizza & The Thai Chicken Pizza”, “The Barbecue Chicken Pizza & The Pepperoni Pizza”, and “The Pepperoni Pizza & The Thai Chicken Pizza”.
    a.

```
SELECT TOP(3) a.pizza_name, b.pizza_name,
COUNT(*) CombinationCount
FROM [Pizza DB].[dbo].[pizza_sales] a
INNER JOIN [Pizza DB].[dbo].[pizza_sales] b
ON a.order_id = b.order_id
AND a.pizza_name < b.pizza_name
GROUP BY a.pizza_name, b.pizza_name
ORDER BY CombinationCount DESC
```

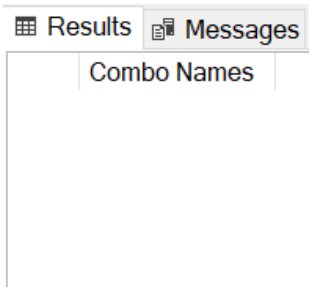
b.

	pizza_name	pizza_name	CombinationCount
1	The Hawaiian Pizza	The Thai Chicken Pizza	319
2	The Barbecue Chicken Pizza	The Pepperoni Pizza	308
3	The Hawaiian Pizza	The Pepperoni Pizza	299

3. Now, firstly, we will create a table and add the names for the 3 combos.
   a.

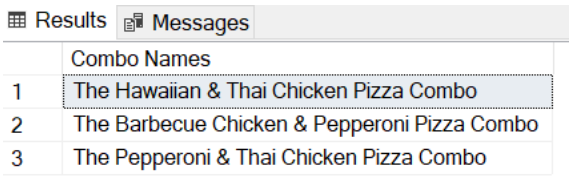
```
CREATE TABLE combo (
        "Combo Names" VARCHAR(40)
        )
```

   b.



   c.

```
INSERT INTO dbo.combo
VALUES ('The Hawaiian & Thai Chicken Pizza Combo'),
                ('The Barbecue Chicken & Pepperoni Pizza Combo'),
                ('The Pepperoni & Thai Chicken Pizza Combo')
```



	Combo Names
1	The Hawaiian & Thai Chicken Pizza Combo
2	The Barbecue Chicken & Pepperoni Pizza Combo
3	The Pepperoni & Thai Chicken Pizza Combo

   d.

4. In addition, the combo deals will receive a 20% discount from the total if they were to be purchased individually. Let's find the original prices for those medium-sized pizzas.
   a.

```
SELECT DISTINCT pizza_name_id, unit_price
FROM [Pizza DB].[dbo].[pizza_sales]
```

```
WHERE pizza_name IN ('The Hawaiian Pizza', 'The Thai Chicken Pizza'
, 'The Barbecue Chicken Pizza', 'The Pepperoni Pizza')
AND RIGHT(pizza_name_id,2) = '_m'
ORDER BY pizza_name_id
```

b.

	pizza_name_id	unit_price
1	bbq_ckn_m	16.75
2	hawaiian_m	13.25
3	pepperoni_m	12.5
4	thai_ckn_m	16.75

5. We will now sum up the prices for the items individually and apply the 20% discount to the newly created combos. Here, we used the CTE from the previous step in order to get the unit price for each pizza.
    a.

```
WITH price AS

(
        SELECT DISTINCT pizza_name_id, unit_price
        FROM [Pizza DB].[dbo].[pizza_sales]
        WHERE pizza_name IN ('The Hawaiian Pizza', 'The Thai Chicken
Pizza'
        , 'The Barbecue Chicken Pizza', 'The Pepperoni Pizza')
        AND RIGHT(pizza_name_id,2) = '_m'

        ),
      combi_price AS
        (
                SELECT SUM(unit_price) * 0.80 combo_price
                FROM price WHERE pizza_name_id IN ('hawaiian_m',
'thai_ckn_m')
        UNION ALL
                SELECT SUM(unit_price) * 0.80
                FROM price WHERE pizza_name_id IN ('bbq_ckn_m',
'pepperoni_m')
        UNION ALL
                SELECT SUM(unit_price) * 0.80
                FROM price WHERE pizza_name_id IN ('pepperoni_m',
'thai_ckn_m')
                )
SELECT * FROM combi_price
```

b.

Results | Messages

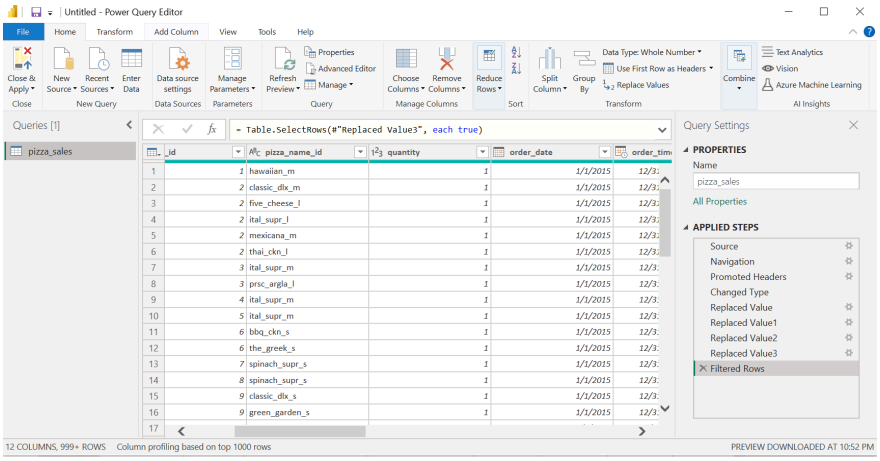
	combo_price
1	24
2	23.4
3	23.4

SECTION 2:

The purpose of this section is to identify KPIs and visualize product performance throughout the year before strategizing data-driven business decisions for next in order to increase revenue.

1. After uploading the file to Power BI, we cleaned the data in Power Query.

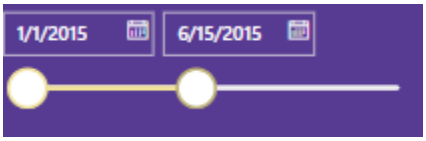
a.



2. We then chose the KPIs and examined them closely by product categories and certain time frames throughout the year by implementing interactive filters on the dashboard.

a.

b. 
Pizza Categories
All
Chicken
Classic
Supreme
Veggie

c. 
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