PROJECT 2

Total Sales vs Total Profit

Problem Statement:

To analyse the overall performance of a European companies last year sales and quantity of products sold. Based on the parameters available in the dataset visualizations and dashboard was created using Power BI. The total sales of the products last year across the European countries were analysed.

The workbook contains following tables,

1. Sales details table
2. Customer details
3. Product details
4. Region

- The data requires some reference table to be created which can be used for using the date and products.
- Relationship was created between the sales table and the other tables
- Interactive slicer in terms of Country Flag in the report.

The Dashboard highlights the following: -

o Sales and Profit for Last Year

o Date wise comparison of Total Sales and last year's sales with drill down

o Product Sales of last year

o Quantity of Product sold

o Customer wise total sales and total profit

o Interactive slicer in terms of Country

Note:

The best practice to a Data Analytics is to follow the Data Analytics Project Cycle i.e

1. Understanding Data or Business
2. Collecting and Cleaning Data (Data preparation)
3. Model Planning and Model Building
4. Validation and Visualization

Understanding Data:

Data was about the product sales details, retail sales, country wise sales, etc.

Data composed of Employee detail table, Customer detail table, Product Table, Product Category table, Product Sub-category table, Retail sales table, Sales detail table.

Customer Index	Customer Names
1	Christy Olson
2	Dan Peterson
3	Mable Lindsey
4	Kyle Carr
5	Rachel Gomez
6	Isabel Cross
7	Billie Chandler
8	Sylvester Morales
9	Rachel Gomez
10	Beth Tucker
11	Shari Silva
12	Drew Rogers
13	Arturo Francis
14	Mable Lindsey
15	Shari Silva
16	Rachel Gomez
17	Jenny Garcia
18	Colleen Warren
19	Pauline Beck
20	Shari Silva
21	Jenny Garcia
22	Ben Perez
23	Cassandra Franklin

Customer Details table

Product ID	Product Name
1	Adjustable Race
2	Bearing Ball
3	BB Ball Bearing
4	Headset Ball Bearings
5	Blade
6	LL Crankarm
7	ML Crankarm
8	HL Crankarm
9	Chainring Bolts
10	Chainring Nut
11	Chainring
12	Crown Race
13	Chain Stays
14	Decal 1
15	Decal 2
16	Down Tube
17	Mountain End Caps
18	Road End Caps
19	Touring End Caps
20	Thin-Jam Hex Nut 11
21	External Lock Washer 3
22	External Lock Washer 4
23	External Lock Washer 9

Product details table

Date	Year	QuarterOfYear	MonthOfYear	DayOfMonth	DateInt	MonthName	MonthInCalendar	QuarterInCalendar	DayInWeek	DayOfWeekName	WeekEnding
01 July 2019	2019	3	7	1	20190701	July	Jul 2019	Q3 2019	0	Monday	07 July
02 July 2019	2019	3	7	2	20190702	July	Jul 2019	Q3 2019	1	Tuesday	07 July
03 July 2019	2019	3	7	3	20190703	July	Jul 2019	Q3 2019	2	Wednesday	07 July
04 July 2019	2019	3	7	4	20190704	July	Jul 2019	Q3 2019	3	Thursday	07 July
05 July 2019	2019	3	7	5	20190705	July	Jul 2019	Q3 2019	4	Friday	07 July
06 July 2019	2019	3	7	6	20190706	July	Jul 2019	Q3 2019	5	Saturday	07 July
07 July 2019	2019	3	7	7	20190707	July	Jul 2019	Q3 2019	6	Sunday	07 July
08 July 2019	2019	3	7	8	20190708	July	Jul 2019	Q3 2019	0	Monday	14 July
09 July 2019	2019	3	7	9	20190709	July	Jul 2019	Q3 2019	1	Tuesday	14 July
10 July 2019	2019	3	7	10	20190710	July	Jul 2019	Q3 2019	2	Wednesday	14 July
11 July 2019	2019	3	7	11	20190711	July	Jul 2019	Q3 2019	3	Thursday	14 July
12 July 2019	2019	3	7	12	20190712	July	Jul 2019	Q3 2019	4	Friday	14 July
13 July 2019	2019	3	7	13	20190713	July	Jul 2019	Q3 2019	5	Saturday	14 July
14 July 2019	2019	3	7	14	20190714	July	Jul 2019	Q3 2019	6	Sunday	14 July
15 July 2019	2019	3	7	15	20190715	July	Jul 2019	Q3 2019	0	Monday	21 July
16 July 2019	2019	3	7	16	20190716	July	Jul 2019	Q3 2019	1	Tuesday	21 July
17 July 2019	2019	3	7	17	20190717	July	Jul 2019	Q3 2019	2	Wednesday	21 July
18 July 2019	2019	3	7	18	20190718	July	Jul 2019	Q3 2019	3	Thursday	21 July
19 July 2019	2019	3	7	19	20190719	July	Jul 2019	Q3 2019	4	Friday	21 July
20 July 2019	2019	3	7	20	20190720	July	Jul 2019	Q3 2019	5	Saturday	21 July
21 July 2019	2019	3	7	21	20190721	July	Jul 2019	Q3 2019	6	Sunday	21 July
22 July 2019	2019	3	7	22	20190722	July	Jul 2019	Q3 2019	0	Monday	28 July

Date table

Index	State	City	Country	Full Name
1	Oregon	LONDON	UK	LONDON, UK
2	California	BERLIN	Germany	BERLIN, Germany
3	Wyoming	MADRID	Spain	MADRID, Spain
4	California	ROMA	Italy	ROMA, Italy
5	Wyoming	KIEV	Ukraine	KIEV, Ukraine
6	California	PARIS	France	PARIS, France
7	Nevada	BUCURESTI (Bucharest)	Romania	BUCURESTI (Bucharest), Romania
8	Wyoming	BUDAPEST	Hungary	BUDAPEST, Hungary
9	California	Hamburg	Germany	Hamburg, Germany
10	California	MINSK	Belarus	MINSK, Belarus
11	California	WARSZAWA (Warsaw)	Poland	WARSZAWA (Warsaw), Poland
12	California	BEOGRAD (Belgrade)	Serbia	BEOGRAD (Belgrade), Serbia
13	Nevada	WIEN (Vienna)	Austria	WIEN (Vienna), Austria
14	Wyoming	Kharkov	Ukraine	Kharkov, Ukraine
15	California	Barcelona	Spain	Barcelona, Spain
16	Nevada	Milano (Milan)	Italy	Milano (Milan), Italy
17	Nevada	München (Munich)	Germany	München (Munich), Germany
18	California	PRAHA (Prague)	Czech Republic	PRAHA (Prague), Czech Republic
19	California	SOFIA	Bulgaria	SOFIA, Bulgaria
20	Wyoming	Dnepropetrovsk	Ukraine	Dnepropetrovsk, Ukraine
21	Nevada	Donetsk	Ukraine	Donetsk, Ukraine
22	Wyoming	Napoli (Naples)	Italy	Napoli (Naples), Italy
23	Nevada	Birmingham	UK	Birmingham, UK

Region table

OrderNumber	OrderDate	Customer Name Index	Channel	Currency Code	Code	Region ID	Product ID	Quantity	Unit Price	Line Total	Total Unit Cost
11004	01 January 2019	8	Industries	Euro	INX005RT	49	26	6	978.2	5869.2	684.74
11011	02 January 2019	111	Industries	Euro	INX005RT	33	26	12	3872.6	46471.2	2517.19
11088	08 January 2019	93	Industries	Euro	INX005RT	48	26	6	1105.5	6633	851.235
11102	09 January 2019	15	Industries	Euro	INX005RT	39	26	9	1072	9648	600.32
11117	11 January 2019	100	Industries	Euro	INX005RT	45	26	7	2345	16415	1219.4
11126	12 January 2019	88	Industries	Euro	INX005RT	43	26	10	201	2010	160.8
11192	16 January 2019	13	Industries	Euro	INX005RT	51	26	8	1862.6	14900.8	949.926
11206	18 January 2019	91	Industries	Euro	INX005RT	46	26	7	737	5159	626.45
11209	18 January 2019	59	Industries	Euro	INX005RT	2	26	8	2512.5	20100	1331.625
11241	21 January 2019	4	Industries	Euro	INX005RT	60	26	10	857.6	8576	497.408
11243	21 January 2019	91	Industries	Euro	INX005RT	16	26	9	2278	20502	1161.78
11254	22 January 2019	36	Industries	Euro	INX005RT	12	26	11	201	2211	118.59
11280	25 January 2019	31	Industries	Euro	INX005RT	62	26	9	2338.3	21044.7	1286.065
11287	26 January 2019	134	Industries	Euro	INX005RT	66	26	10	6311.4	63114	4986.006
11299	26 January 2019	91	Industries	Euro	INX005RT	3	26	9	2278	20502	1161.78
11352	30 January 2019	23	Industries	Euro	INX005RT	45	26	12	187.6	2251.2	155.708
11376	01 February 2019	45	Industries	Euro	INX005RT	66	26	12	1239.5	14874	805.675
11394	03 February 2019	89	Industries	Euro	INX005RT	57	26	9	2512.5	22612.5	1658.25
11400	03 February 2019	133	Industries	Euro	INX005RT	63	26	8	2345	18760	1735.3
11454	08 February 2019	92	Industries	Euro	INX005RT	46	26	5	1065.3	5326.5	671.139
11468	09 February 2019	161	Industries	Euro	INX005RT	28	26	12	1031.8	12381.6	433.356
11497	11 February 2019	39	Industries	Euro	INX005RT	57	26	9	958.1	8622.9	699.413
11510	13 February 2019	74	Industries	Euro	INX005RT	11	26	6	6532.5	39195	5487.3

Sales Details table

Data Preparation:

There was a bit problem in data other than that Data was very cleaned and up to mark. There is no need of removing anomalies from the data. Only the empty rows from the dataset were removed, which was handled in PQE (Power Query Editor) and the column headers were set.

Model Planning:

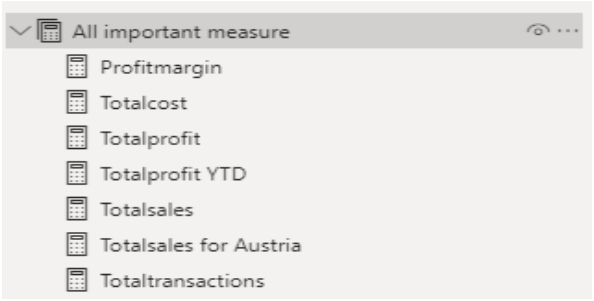
Measures were created using DAX function to find out the results of the problem statements.

Model Building:

Created two groups of Measure to complete all the objectives of the problem statement.

Important Measure:

This measure table consist of a basic calculative measure like total profit and total sales.



Important Measure table

```
Totalprofit = [Totalsales]-[Totalcost]
```

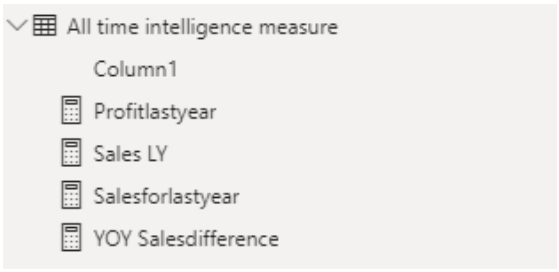
Dax function for Total Profit

```
Totalsales = SUMX('Sales Details','Sales Details'[Quantity]*'Sales Details'[Unit Price])
```

Dax function for Total Sales

Time Intelligence Measure:

This measure contain table consisting of Sales for last year and Profit last year



Time Intelligence Measure Table

```
Salesforlastyear = CALCULATE([Totalsales],SAMEPERIODLASTYEAR('date'[Date]))
```

Dax function for Sales for last year

```
Profitlastyear = CALCULATE([Totalprofit],DATEADD('date'[Date],-1,YEAR))
```

Dax function for Profit last year

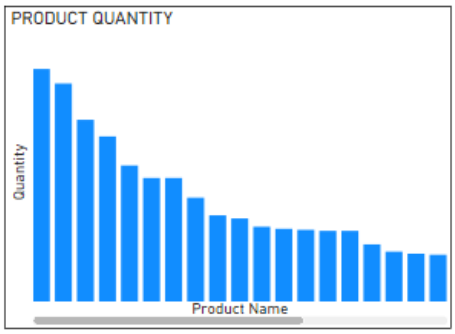
Visualization:

The Dashboard highlights the following: -

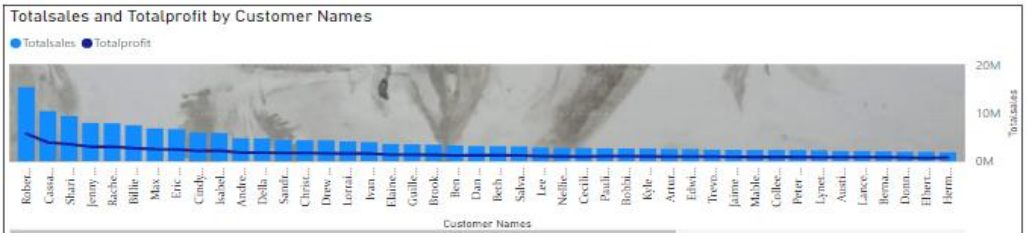
o Sales and Profit for last year using Visual Card

o Interactive slicer in terms of Country

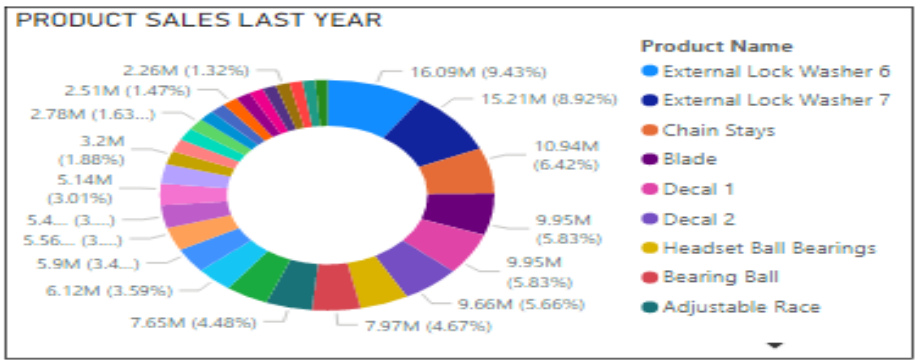
o Quantity of Product sold using Clustered Column Chart



o Customer wise total sales and total profit using Line and Clustered Column Chart



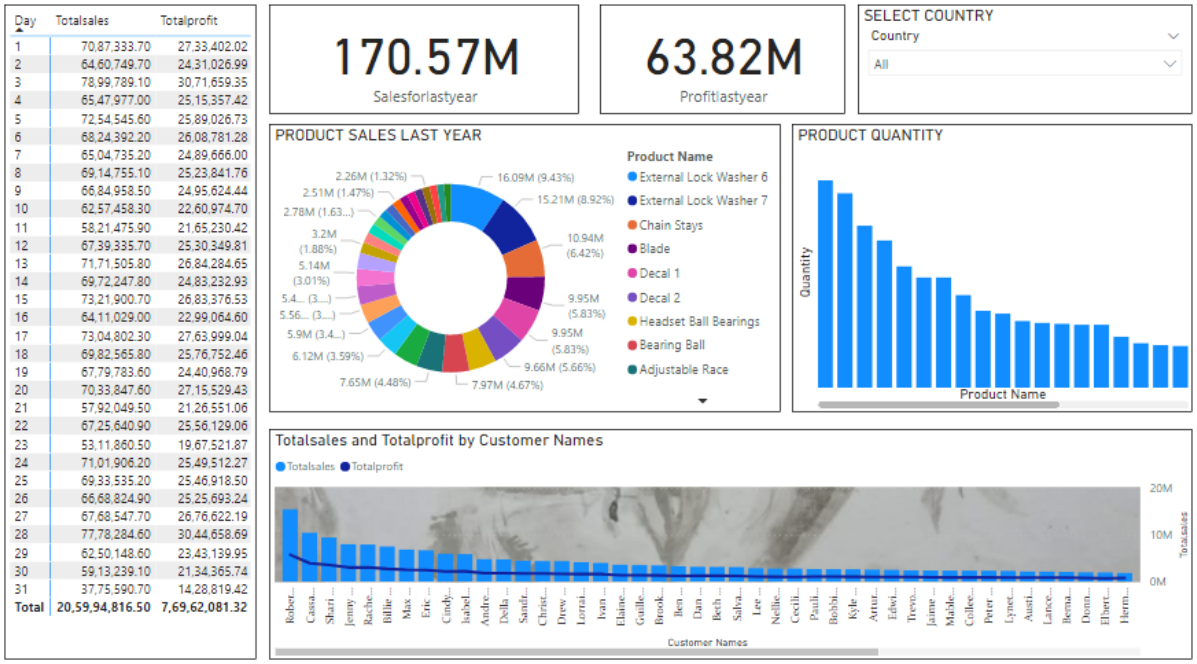
o Product Sales of last year using Donut Chart



o Date wise comparison of Total Sales and last year's sales with drill down (Matrix)

Day	Totalsales	Totalprofit
1	70,87,333.70	27,33,402.02
2	64,60,749.70	24,31,026.99
3	78,99,789.10	30,71,659.35
4	65,47,977.00	25,15,357.42
5	72,54,545.60	25,89,026.73
6	68,24,392.20	26,08,781.28
7	65,04,735.20	24,89,666.00
8	69,14,755.10	25,23,841.76
9	66,84,958.50	24,95,624.44
10	62,57,458.30	22,60,974.70
11	58,21,475.90	21,65,230.42
12	67,39,335.70	25,30,349.81
13	71,71,505.80	26,84,284.65
14	69,72,247.80	24,83,232.93
15	73,21,900.70	26,83,376.53
16	64,11,029.00	22,99,064.60
17	73,04,802.30	27,63,999.04
18	69,82,565.80	25,76,752.46
19	67,79,783.60	24,40,968.79
20	70,33,847.60	27,15,529.43
21	57,92,049.50	21,26,551.06
22	67,25,640.90	25,56,129.06
23	53,11,860.50	19,67,521.87
24	71,01,906.20	25,49,512.27
25	69,33,535.20	25,46,918.50
26	66,68,824.90	25,25,693.24
27	67,68,547.70	26,76,622.19
28	77,78,284.60	30,44,658.69
29	62,50,148.60	23,43,139.95
30	59,13,239.10	21,34,365.74
31	37,75,590.70	14,28,819.42
Total	**20,59,94,816.50**	**7,69,62,081.32**

Dashboard



Conclusion:

Finally, a full report is developed created on **Power Bi Desktop** with all the requirements in the problem statement.