SQL REPORT

Supply Chain Project

The supply chain data comes with 23 columns and 2 columns (Profit and Manufacturing cost to Price) were added during the course of the project.

There are different questions to be answered in this analysis which would require exposure to the topics mentioned below:

- Aggregate Functions
- Data Manipulation Language
- Data Definition Language
- Arithmetic (SQL Operators)
- Group By & Order By Clause
- Cast and Convert Function

Database Server used: MySQL

```
->Revenue
select cast(sum(`Revenue generated`) as decimal(8,2))Revenue from chain;
```

Result Grid

	Revenue
▶	577604.82

```
->How Leadtime Affects Stock Levels and Availability
 select sum(`Lead Times`)`Lead Times`, Sum(`Stock Levels`)`Stock Levels`,
 sum(`Availability`)`Availability` from chain;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

	Lead Times	Stock Levels	Availability
▶	1596	4777	4840

```
->Order Quantities
select sum(`Order quantities`)'Order Quantities' from chain;
```

Result Grid

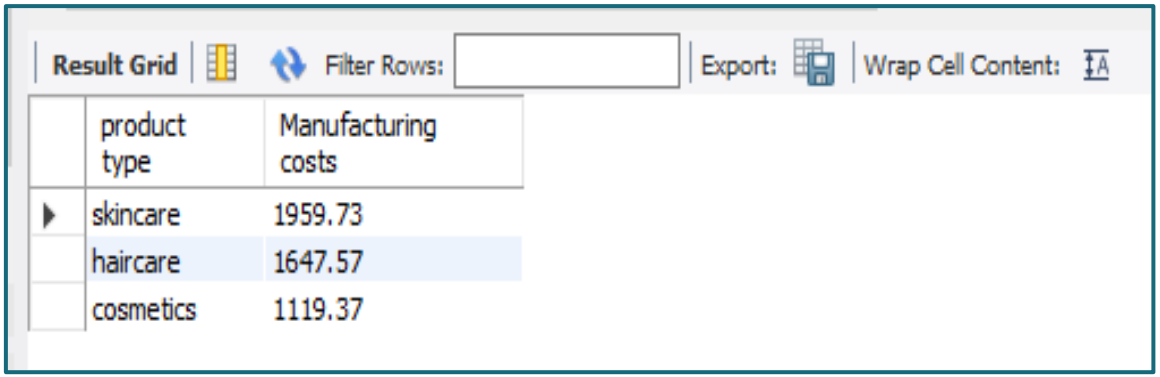
	Order Quantities
▶	4922

```
->Order Quantities By Location
select location, sum(`Order quantities`)`Order Quantities` from chain
group by location
order by `Order Quantities` desc;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

	location	Order Quantities
▶	Kolkata	1228
	Chennai	1109
	Mumbai	1083
	Bangalore	769
	Delhi	733

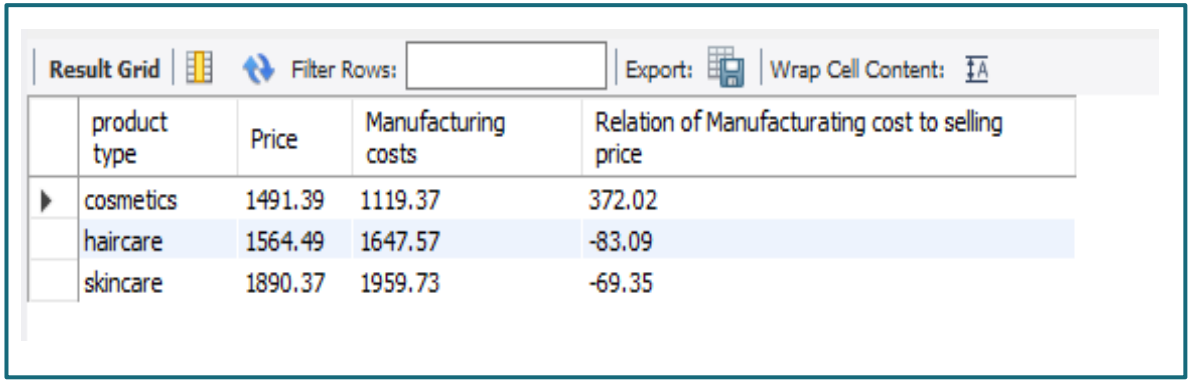
```
->Most Costly Products to Produce
select `product type`,cast(sum(`Manufacturing costs`) as decimal(6,2))`Manufacturing costs` from chain
group by `product type`
Order by `product type` desc;
```



Result Grid | Filter Rows: | Export: | Wrap Cell Content:

product type	Manufacturing costs
skincare	1959.73
haircare	1647.57
cosmetics	1119.37

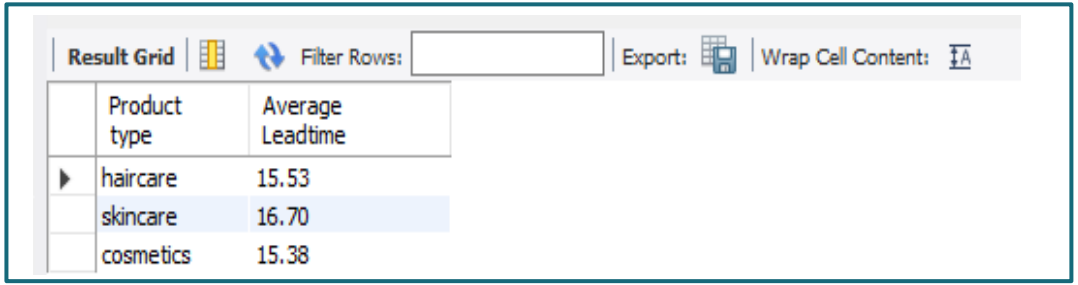
```
->Relation of Manufacturating cost to selling price
select `product type`, cast(sum(price) as decimal(6,2))Price,
cast(sum(`Manufacturing costs`) as decimal(6,2))`Manufacturing costs`,
cast((sum(price)-sum(`Manufacturing costs`))as decimal(5,2))'Relation of Manufacturating cost to selling price'
from chain
```



Result Grid | Filter Rows: | Export: | Wrap Cell Content:

product type	Price	Manufacturing costs	Relation of Manufacturating cost to selling price
cosmetics	1491.39	1119.37	372.02
haircare	1564.49	1647.57	-83.09
skincare	1890.37	1959.73	-69.35

```
->Average Leadtime
select `Product type`, cast((sum(`Lead times`)/count(`Lead times`))as decimal(4,2))'Average Leadtime' from chain
group by `Product type`;
```



Result Grid | Filter Rows: | Export: | Wrap Cell Content:

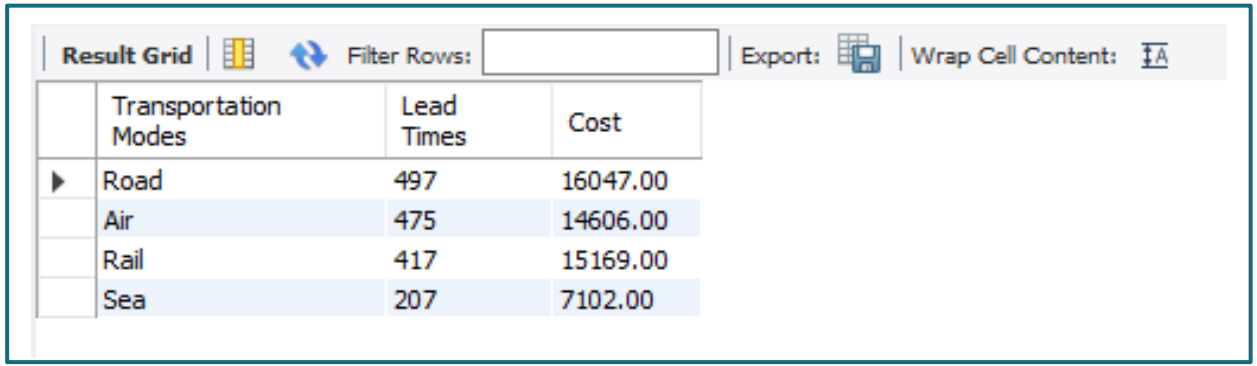
Product type	Average Leadtime
haircare	15.53
skincare	16.70
cosmetics	15.38

```sql
->Correlation Between Inspection Result and Defect Rate
select `inspection results`, cast(sum(`Defect Rates`) as decimal(4,2))`Defect Rates`,
cast(sum(`Defect Rates`)*100/(select sum(`Defect Rates`) from chain)as decimal(4,2)) '%Of Defect Rate',
cast(sum(`Defect Rates`)/count(`Defect Rates`) as decimal(3,2))'Average Defect Rate'
from chain
group by `inspection results`
order by `Defect Rates` desc;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

inspection results	Defect Rates	%Of Defect Rate	Average Defect Rate
Fail	92.49	40.62	2.57
Pending	88.32	38.79	2.15
Pass	46.90	20.59	2.04

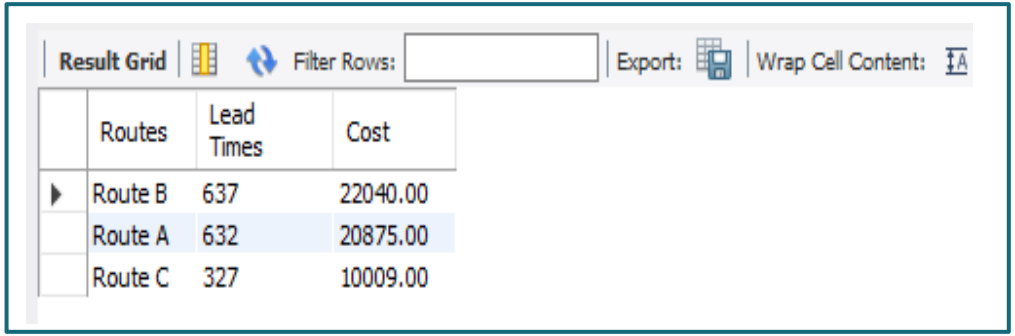
```sql
->How Transportation Modes Affect Lead Time and Cost
select `Transportation Modes`, sum(`lead times`)'Lead Times', cast(sum(costs) as decimal(9,2))'Cost'
from chain
group by `Transportation Modes`;
```



Result Grid | Filter Rows: | Export: | Wrap Cell Content:

Transportation Modes	Lead Times	Cost
Road	497	16047.00
Air	475	14606.00
Rail	417	15169.00
Sea	207	7102.00

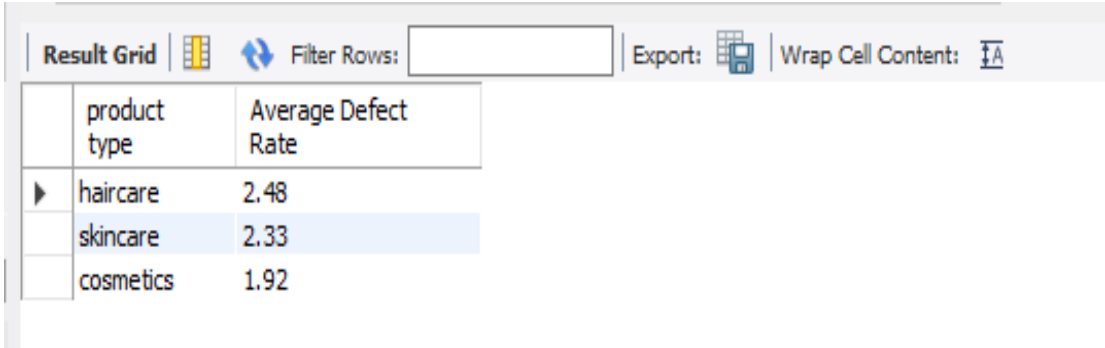
```
->Impact of Different Routes on Costs and Lead Times
select `Routes`, sum(`lead times`)'Lead Times', convert(sum(cost),decimal(8,2))'Cost'
from chain
group by `Routes`
order by `lead times`desc;
```



Result Grid | Filter Rows: | Export: | Wrap Cell Content:

Routes	Lead Times	Cost
Route B	637	22040.00
Route A	632	20875.00
Route C	327	10009.00

```sql
->Average Defect Rate For Each Product
select `product type`,
cast(sum(`Defect rates`)/count(`Defect rates`) as decimal (3,2))'Average Defect Rate'
from chain
group by `product type`;
```



Result Grid | Filter Rows: | Export: | Wrap Cell Content:

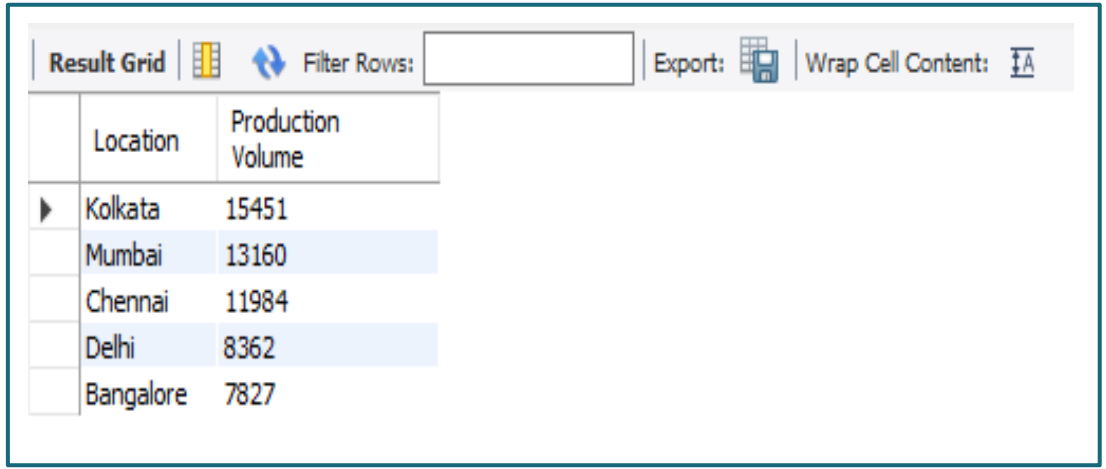
product type	Average Defect Rate
haircare	2.48
skincare	2.33
cosmetics	1.92

```
->Correlation of Inspection Result and Manufacturing Cost
select `Inspection results`, cast(sum(`Manufacturing costs`) as decimal(6,2))`Manufacturing Costs`,
cast((sum(`Manufacturing costs`)*100/(select sum(`Manufacturing costs`) from chain))as decimal(4,2))`%Manufacturing Costs`
from chain
group by `Inspection results`
order by `Manufacturing costs` desc;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

Inspection results	Manufacturing Costs	%Manufacturing Costs
Fail	1880.30	39.78
Pending	1785.07	37.77
Pass	1061.30	22.45

```
->Production Volumes Alinged With Market Demands
select `Location`, sum(`Production volumes`)`Production Volume` from chain
group by `Location`
order by `Production Volume` desc;
```



Result Grid | Filter Rows: | Export: | Wrap Cell Content:

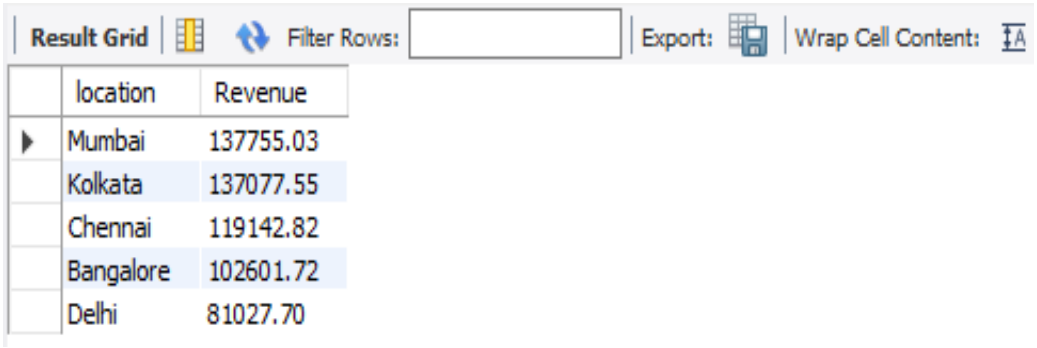
Location	Production Volume
Kolkata	15451
Mumbai	13160
Chennai	11984
Delhi	8362
Bangalore	7827

```sql
->Percentage of Production Volumes Alinged With Market Demands
select `Location`, sum(`Production volumes`)`Production Volume`,
(sum(`Production volumes`)*100/(select sum(`Production volumes`) from chain))'%ProductionVolume'
from chain
group by `Location`
order by `Production Volume` desc;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

Location	Production Volume	%ProductionVolume
Kolkata	15451	27.2101
Mumbai	13160	23.1755
Chennai	11984	21.1045
Delhi	8362	14.7260
Bangalore	7827	13.7838

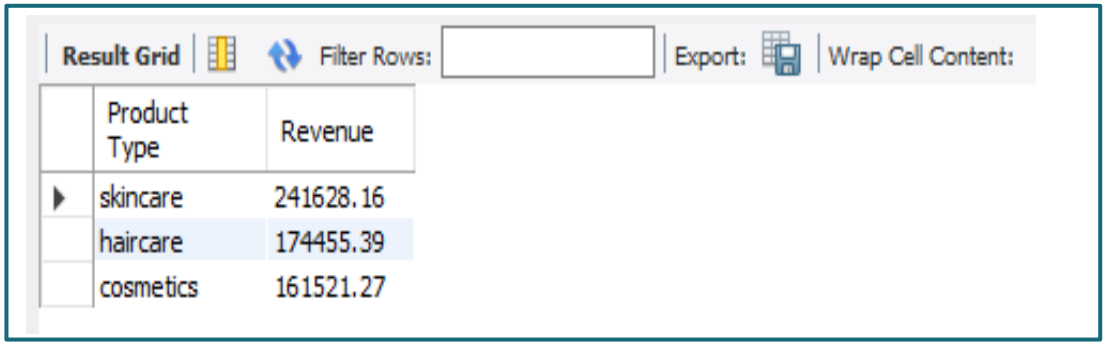
```
->Revenue By Location
select location, cast(sum(`Revenue generated`) as decimal(8,2))Revenue from chain
group by location
order by Revenue desc
```



Result Grid | Filter Rows: | Export: | Wrap Cell Content:

location	Revenue
Mumbai	137755.03
Kolkata	137077.55
Chennai	119142.82
Bangalore	102601.72
Delhi	81027.70

```
->Revenue By Product Type
select `Product Type`, cast(sum(`Revenue generated`) as decimal(8,2))Revenue from chain
group by `Product Type`
order by Revenue desc
```



Result Grid | Filter Rows: | Export: | Wrap Cell Content:

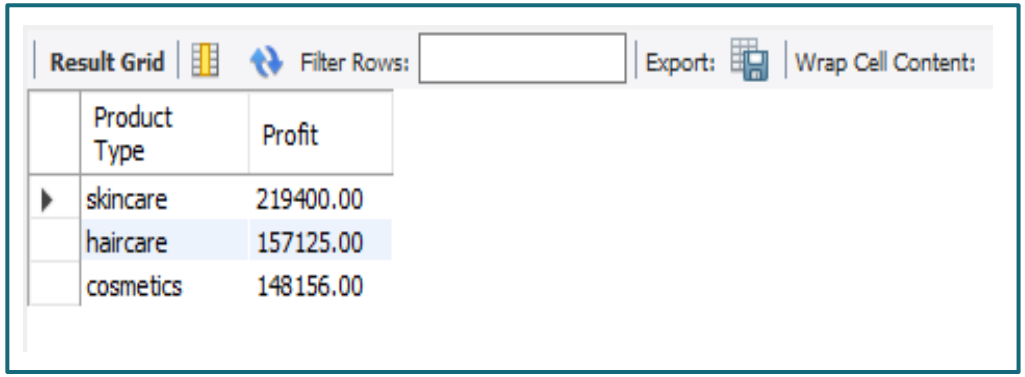
Product Type	Revenue
skincare	241628.16
haircare	174455.39
cosmetics	161521.27

```
->Revenue Contribution Percentage
select location, cast(sum(`Revenue generated`)as decimal(8,2))`Revenue`,
cast(sum(`Revenue generated`)*100/(select sum(`Revenue generated`) from chain)as decimal(4,2))'%Revenue Contribution'
from chain
group by location
order by `Revenue` desc
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

location	Revenue	%Revenue Contribution
Mumbai	137755.03	23.85
Kolkata	137077.55	23.73
Chennai	119142.82	20.63
Bangalore	102601.72	17.76
Delhi	81027.70	14.03

```
->Profit By Product
select `Product Type`, cast(sum(`Profit`) as decimal(8,2))`Profit` from chain
group by `Product Type`
order by `Profit` desc;
```



Result Grid | Filter Rows: | Export: | Wrap Cell Content:

Product Type	Profit
skincare	219400.00
haircare	157125.00
cosmetics	148156.00

```
->Profit by Location
select location, cast(sum(`Profit`) as decimal(8,2))`Profit` from chain
group by location
order by `Profit` desc
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

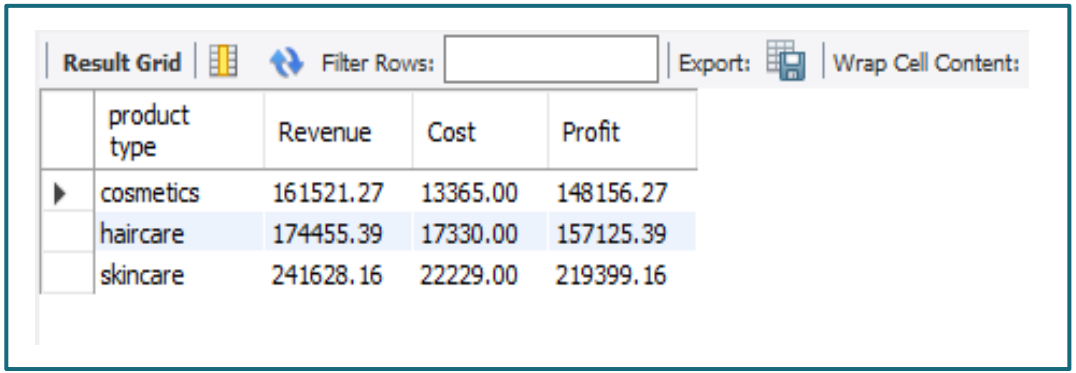
location	Profit
Mumbai	128332.00
Kolkata	124794.00
Chennai	106707.00
Bangalore	92041.00
Delhi	72807.00

```
->Profit Contribution %
select location, cast(sum(`Profit`)as decimal(8,2))`Profit`,
cast(sum(`Profit`)*100/(select sum(`Profit`) from chain)as decimal(8,2))'%Profit Contribution'
from chain
group by location
order by `Profit` desc;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

location	Profit	%Profit Contribution
Mumbai	128332.00	24.46
Kolkata	124794.00	23.78
Chennai	106707.00	20.34
Bangalore	92041.00	17.54
Delhi	72807.00	13.88

```sql
->Overall Profitability of Product
select `product type`, cast(sum(`Revenue generated`) as decimal(8,2))Revenue,
cast(sum(costs)as decimal(7,2))Cost,
cast((sum(`Revenue generated`)-sum(costs))as decimal(8,2))Profit from chain
group by `product type`
order by `product type`;
```



product type	Revenue	Cost	Profit
cosmetics	161521.27	13365.00	148156.27
haircare	174455.39	17330.00	157125.39
skincare	241628.16	22229.00	219399.16

INSIGHTS

- Skincare product and Mumbai (Location) generated more revenue at 241628.16 & 137755.03 respectively.
- Availability & Stock Levels are higher than Lead Times at 4840, 4777 & 1596 respectively.
- Kolkata, Chennai & Mumbai were the top three location with the highest number of orders.
- Skincare is the costliest product to produce.
- Relating manufacturing cost to price, haircare and skincare gave negative results -83.09 & -69.35.
- Skincare and Haircare products generated more profit; were the top two highest.
- Mumbai and Kolkata made more profit.
- Based on Inspection result failed product had the highest manufacturing cost & percentage of defect rate.
- Kolkata, Mumbai & Chennai were the top three location with the highest production volume.

❖ Note: The currency used for variables like cost, profit, revenue, manufacturing cost are all in India Rupee (INR) ₹