SQL Project Report on Sample Superstore Sales Analysis

1. Introduction:

The Sample Superstore dataset provides detailed information about sales and profits of a retail business. The primary objective of this project is to perform SQL-based analysis to uncover meaningful insights related to:

- Sales performance
- Profitability trends
- Regional and category-level analysis
- Customer order behaviour.

2. Workflow:

I. **Dataset Collection:**
The dataset was initially available in Excel format (SampleSuperstore.xlsx).

II. **Database Creation & Import:**
A new database was created in **MySQL Workbench**, and the Excel file was imported to MySQL for table format .

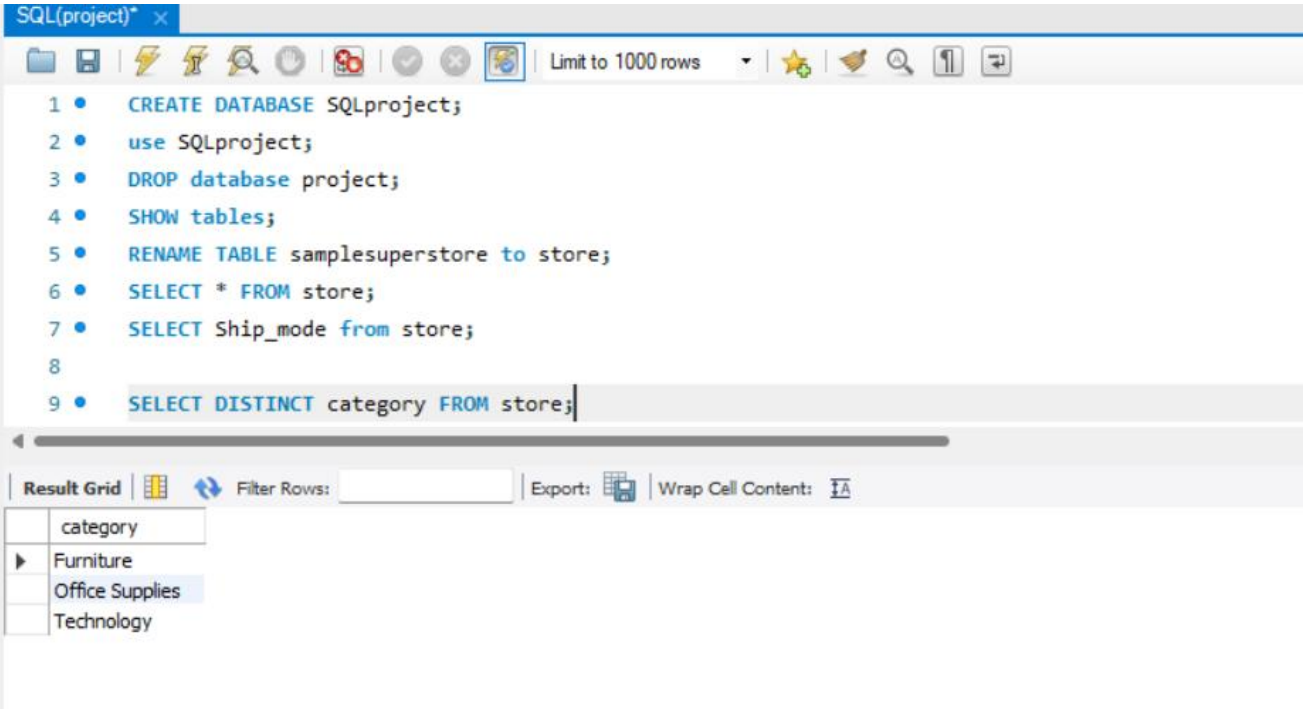
III. **SQL Queries Execution:**
A wide range of queries were executed, including:

- **Basic queries**
- **Filtering queries**
- **Aggregations**
- **Top/Bottom analysis**
- **Subqueries**

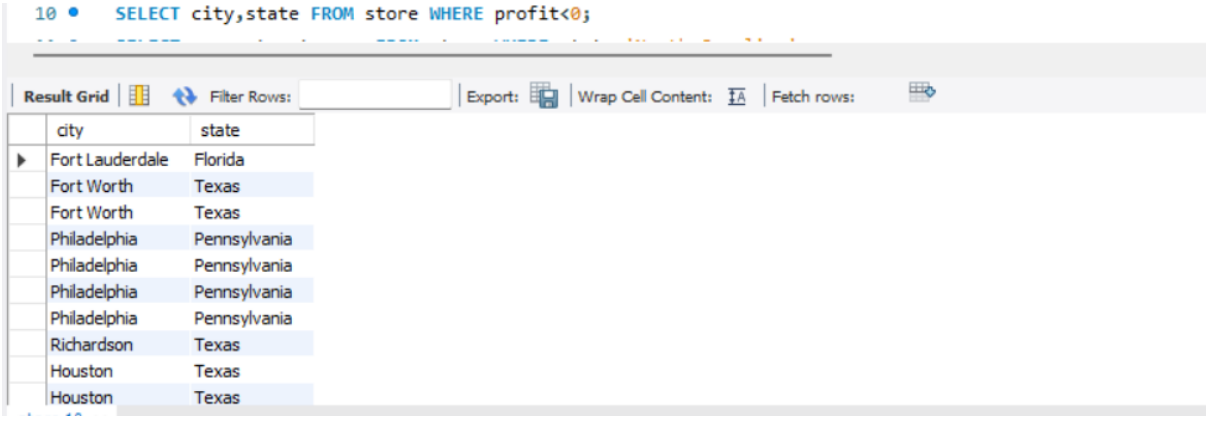
IV. **Results & Insights:**
The outcomes of these queries were studied carefully to derive **business insights** that can help in understanding sales trends, profit distribution, customer preferences and regional performance.

3. Queries and Outputs display:

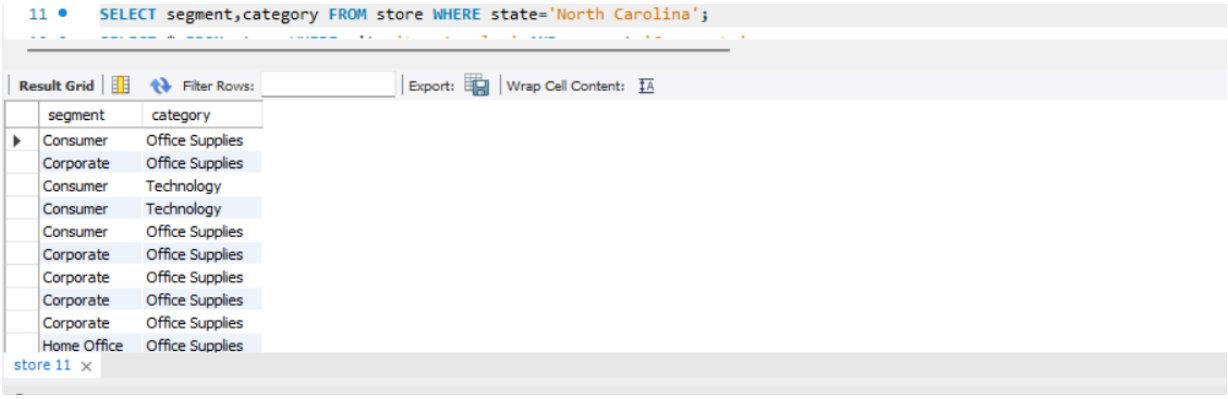
1. List all the unique categories of products.



2. Write a query to display the city and state where the profit is negative.



3. Query to display segment, category list present in North Carolina.



4. Write a query to display all the details of store where city in Los Angeles and buy orders for corporate segment.

```
14
15 • SELECT * FROM store WHERE city='Los Angeles' AND segment='Corporate';
```

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

Ship_mode	Segment	Country	City	State	Postal_Code	Region	Category	Sub_Category	Sales	Quantity	Discount	Profit
Second Class	Corporate	United States	Los Angeles	California	90036	West	Office Supplies	Labels	14.62	2	0	6.8714
Standard Class	Corporate	United States	Los Angeles	California	90049	West	Office Supplies	Storage	77.88	2	0	3.894
Standard Class	Corporate	United States	Los Angeles	California	90036	West	Office Supplies	Art	20.1	3	0	6.633
Standard Class	Corporate	United States	Los Angeles	California	90036	West	Technology	Phones	73.584	2	0.2	8.2782
Standard Class	Corporate	United States	Los Angeles	California	90036	West	Office Supplies	Paper	6.48	1	0	3.1104
Standard Class	Corporate	United States	Los Angeles	California	90045	West	Office Supplies	Art	9.32	4	0	2.7028
Standard Class	Corporate	United States	Los Angeles	California	90045	West	Office Supplies	Envelopes	15.25	1	0	7.015
Standard Class	Corporate	United States	Los Angeles	California	90008	West	Technology	Phones	95.76	6	0.2	7.182
Second Class	Corporate	United States	Los Angeles	California	90036	West	Furniture	Chairs	190.72	1	0.2	11.92
First Class	Corporate	United States	Los Angeles	California	90036	West	Office Supplies	Binders	37.44	4	0.2	11.7

store 32

5. Display Sub category and sales list where profit is more than 10 and sales range of 200 to 400.

```
16
17 • SELECT Sub_Category,Sales FROM store WHERE Profit>10 AND sales BETWEEN 200 AND 400;
```

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

Sub_Category	Sales
Bookcases	261.96
Phones	213.48
Phones	371.168
Storage	208.56
Appliances	208.16
Envelopes	200.984
Chairs	301.96
Accessories	339.96
Storage	226.56
Storage	243.992

store 1

6.Display profit in each region where sales quantity like 2,4,7 and profit should be in positive.

```
18
19 • SELECT Profit, Region FROM store WHERE Quantity in(2,4,7) AND Profit>0;
20
```

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

Profit	Region
41.9136	South
6.8714	West
2.5164	South
14.1694	West
1.9656	West
68.3568	West
9.99	West
2.4824	West
7.384	West
5.0596	Central

tore 2

7. Display ship mode and category details of the market sales where the region having 7 letters and category starts with T.

```
21 •  SELECT Ship_mode, Category FROM store WHERE Region LIKE '_______' AND Category LIKE 'T%';
22
```

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

Ship_mode	Category
First Class	Technology
Standard Class	Technology
Standard Class	Technology
First Class	Technology
Standard Class	Technology
Standard Class	Technology
Standard Class	Technology
Standard Class	Technology
Standard Class	Technology
Standard Class	Technology

store 3 ×

8. Show sales list and quantity of the product where discount should be zero.

```
22
23 •  SELECT Sales, Quantity FROM store WHERE Discount=0;
24
```

esult Grid | Filter Rows: | Export: | Wrap Cell Content: | Fetch rows:

Sales	Quantity
261.96	2
731.94	3
14.62	2
48.86	7
7.28	4
114.9	5
665.88	6
55.5	2
8.56	2
19.46	7

9. Display number of products which is present in each category.

```
24
25 •  SELECT Category,count(*) FROM store GROUP BY Category;
26
```

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

Category	count(*)
Furniture	2121
Office Supplies	6026
Technology	1847

10. Find average profit in the super market sales in each sales excluding the quantity of 3 and state start with C.

```
27 •  SELECT AVG(Profit),Sales FROM store WHERE Quantity!=3 AND State LIKE 'C%' GROUP BY Sales;
28
```

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

AVG(Profit)	Sales
6.8713999999999995	14.62
7.5733	48.86
2.3478	7.28
90.7152	907.152
34.47	114.9
85.3092	1706.184
68.3568	911.424
3.395466666666667	8.56
8.5768	22.72
4.2224	11.648

11. Fetch total sales per region and display profit in each region only profitable ones.

```
28
29 •  SELECT Region,sum(Sales),sum(profit) FROM store group by Region having sum(Profit)>0 order by sum(Profit) desc;
30
```

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

Region	sum(Sales)	sum(profit)
West	725457.8245000006	108418.44890000018
East	678781.2399999979	91522.78000000026
South	391721.9050000003	46749.430300000065
Central	501239.8908000005	39706.36249999998

12. Display state list and total sales where state's sales greater than the sales in 'Kentucky'.

```
30
31 •  SELECT State, sum(Sales) FROM store group by State having sum(sales)>(select sum(Sales) from store where state='Kentucky');
32
```

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

State	sum(Sales)
California	457687.631500001
Florida	89473.708
North Carolina	55603.16399999997
Washington	138641.26999999993
Texas	170188.04580000002
Pennsylvania	116511.91400000003
Illinois	80166.10099999986
Michigan	76269.61400000002
Indiana	53555.36
New York	310876.2709999998

13. Display sub categories with their profit where profit greater than any sub category in ‘Furniture’.

```
33 • SELECT Sub_Category, Profit From store where Profit>ANY (Select Profit from store where Category='Furniture');
34
```

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

Sub_Category	Profit
Bookcases	41.9136
Chairs	219.582
Labels	6.8714
Tables	-383.031
Storage	2.5164
Furnishings	14.1694
Art	1.9656
Phones	90.7152
Binders	5.7825
Appliances	34.47

14. Show postal code, sub category and sales where all sales greater than city ‘Madison’.

```
34
35 • SELECT Postal_code,Sub_Category,Sales FROM store where Sales>ALL(SELECT Sales from store where city='Madison');
36
```

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

Postal_code	Sub_Category	Sales
19140	Bookcases	3083.43
78207	Machines	8159.952
92037	Accessories	3347.37
77036	Machines	3059.982
10024	Machines	3991.98
10009	Binders	4355.168
30318	Binders	6354.95
59405	Copiers	2999.95
27217	Machines	7999.98
48205	Machines	3059.982

15. Find out the 3rd highest sales in east region.

Limit to 1000 rows

```
37 • SELECT MAX(sales)
38   FROM store
39   WHERE sales < (SELECT MAX(sales) FROM store
40         WHERE sales < (SELECT MAX(sales)
41               FROM store
42               WHERE region = 'East'
43           )
44   );
45
```

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

MAX(sales)
9892.74

16. List all states from east and west regions.

```
45
46 •  SELECT state
47    FROM store
48    WHERE region = 'East'
49    UNION
50    SELECT state
51    FROM store
52    WHERE region = 'West';
53
```

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

state
Pennsylvania
Delaware
New York
Ohio
Connecticut
New Jersey
Massachusetts
Rhode Island
New Hampshire
Maryland

17. Display ship mode, category, discount where discount is more than 0.2 and quantity of product more than 5.

```
53
54 •  SELECT Ship_mode, Category, Discount from store where Discount > 0.2 and Quantity>5;
55
```

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

Ship_mode	Category	Discount
Standard Class	Furniture	0.5
Standard Class	Office Supplies	0.7
Standard Class	Furniture	0.5
Standard Class	Technology	0.4
Standard Class	Furniture	0.3
Second Class	Furniture	0.3
Standard Class	Technology	0.7
Standard Class	Office Supplies	0.7
Standard Class	Furniture	0.6
Second Class	Technology	0.4

18. Display sub category list which is ending with S and profit less than 0 (loss).

```
55
56 •  SELECT sub_category, profit
57     FROM store
58     WHERE sub_category LIKE '%s' AND profit < 0;
59
```

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

sub_category	profit
Tables	-383.031
Appliances	-123.858
Binders	-3.816
Chairs	-1.0196
Bookcases	-1665.0522
Binders	-7.0532
Binders	-5.715
Furnishings	-147.963
Bookcases	-46.9764
Chairs	-15.147

19. Ship modes with atleast 100 orders, sorted by total quantity.

```
59
60 •  SELECT ship_mode, COUNT(*) AS total_orders, SUM(quantity) AS total_quantity
61     FROM store
62     GROUP BY ship_mode
63     HAVING COUNT(*) >= 100
64     ORDER BY total_quantity DESC;
65
```

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

ship_mode	total_orders	total_quantity
Standard Class	5968	22797
Second Class	1945	7423
First Class	1538	5693
Same Day	543	1960

20. Find the top 3 most profitable cities in each region.

```
65
66 •  SELECT region, city, SUM(profit)
67     FROM store
68     GROUP BY region, city
69     HAVING SUM(profit) > 0
70     ORDER BY region, Sum(Profit) DESC
71     LIMIT 3;
```

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

region	city	SUM(profit)
Central	Detroit	13181.790800000002
Central	Lafayette	8976.097300000001
Central	Minneapolis	6824.584599999999

21. To know the length of category column.

```
72
73 •  SELECT length(Category) From store;
74
```

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

length(Category)
9
9
15
9
15
9
15
10
15
15

22. Query to join and display total quantity of product in each state.

```
74
75 •  SELECT CONCAT(State,'-',Quantity) FROM store;
76
```

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

CONCAT(State,'-',Quantity)
Kentucky-2
Kentucky-3
California-2
Florida-5
Florida-2
California-7
California-4
California-6
California-3
California-5

23. Query to separate the orders which are not belongs to Consumer segment.

```
76
77 •  SELECT segment, city, sales
78    FROM store
79    WHERE segment NOT IN('Consumer');
80
```

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

segment	city	sales
Corporate	Los Angeles	14.62
Home Office	Fort Worth	68.81
Home Office	Fort Worth	2.544
Corporate	Fremont	19.46
Corporate	Fremont	60.34
Home Office	Houston	29.472
Corporate	Richardson	1097.544
Corporate	Richardson	190.92
Home Office	Houston	113.328
Home Office	Houston	532.3992

24. Display region, city, sales and profit in south region where profit must in positive values and sales should be more than 1000.

```
80
81 •  SELECT Region, City, Sales, Profit
82    FROM store
83    WHERE Region = 'south'
84    AND (Profit > 0 OR Sales > 1000);
85
```

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

Region	City	Sales	Profit
South	Henderson	261.96	41.9136
South	Henderson	731.94	219.582
South	Fort Lauderdale	22.368	2.5164
South	Concord	15.552	5.4432
South	Melbourne	95.616	9.5616
South	Springfield	75.88	35.6636
South	Memphis	97.04	1.213
South	Decatur	208.16	56.2032
South	Decatur	16.74	8.0352
South	Durham	200.984	62.8075

25.List out sub-category list with profit going with loss sorted it by worst loss.

```
80
81 •  SELECT Region, City, Sales, Profit
82    FROM store
83    WHERE Region = 'south'
84    AND (Profit > 0 OR Sales > 1000);
85
```

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

Region	City	Sales	Profit
South	Henderson	261.96	41.9136
South	Henderson	731.94	219.582
South	Fort Lauderdale	22.368	2.5164
South	Concord	15.552	5.4432
South	Melbourne	95.616	9.5616
South	Springfield	75.88	35.6636
South	Memphis	97.04	1.213
South	Decatur	208.16	56.2032
South	Decatur	16.74	8.0352
South	Durham	200.984	62.8075

26. Region and category pairs with high sales, sorted by profit. Display region, category, total sales and total profit in each region.

```
92 •  SELECT region, category, SUM(sales), SUM(profit)
93    FROM store
94    GROUP BY region, category
95    HAVING SUM(sales) > 3000
96    ORDER BY SUM(sales) DESC;
```

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

region	category	SUM(sales)	SUM(profit)
East	Technology	264973.9810000003	47462.035099999935
West	Furniture	252612.7435000003	11504.9503
West	Technology	251991.83199999997	44303.64959999997
West	Office Supplies	220853.24900000007	52609.849000000155
East	Furniture	208291.20400000009	3046.1658000000034
East	Office Supplies	205516.0549999999	41014.57909999997
Central	Technology	170416.3119999999	33697.43199999999
Central	Office Supplies	167026.41500000027	8879.979899999993
Central	Furniture	163797.16380000004	-2871.049400000001
South	Technology	148771.9079999999	19991.831400000006

4. Conclusion:

Overall, the project demonstrated how SQL can be effectively used for data analysis and decision-making support. The insights gained can guide the retail store in improving sales strategies, optimizing discounts, and focusing on high-performing regions and categories to enhance overall profitability.

Submitted By:

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