

Object Explorer SQLQuery2.sql - LA_8CG1\varshith (54)* SQLQuery1.sql - LA_8CG1\varshith (55)

```
***** Script for SelectTopNRows command from SSMS *****
SELECT TOP (1000) [Order_ID]
    ,[Order_Date]
    ,[Region]
    ,[Category]
    ,[Sub_Category]
    ,[Product_Name]
    ,[Units_Sold]
    ,[Sales]
    ,[Cost]
    ,[Inventory_Days]
    ,[Season]
FROM [RetailDB].[dbo].[retail_business_data]
```

Results

Category	total_sale
Clothing	76873
Electronics	98746
Furniture	104447

Object Explorer SQLQuery2.sql - LA_8CG1\varshith (54)* SQLQuery1.sql - LA_8CG1\varshith (55)

```
    ,[Product_Name]
    ,[Units_Sold]
    ,[Sales]
    ,[Cost]
    ,[Inventory_Days]
    ,[Season]
FROM [RetailDB].[dbo].[retail_business_data]
```

-- Before Cleaning the dataset

```
select * from retail_business_data;
```

Results

Order_ID	Order_Date	Region	Category	Sub_Category	Product_Name	Units_Sold	Sales	Cost	Inventory_Days	Season
1	2024-05-08	West	Furniture	Tables	Tables Model 6	16	1815	1237	21	Festive
2	2024-05-17	West	Furniture	Tables	Tables Model 6	14	2367	2152	70	Winter
3	2024-05-17	East	Clothing	Jeans	Jeans Model 3	18	4056	3034	34	Winter
4	2024-05-17	East	Clothing	Jeans	Jeans Model 3	18	2197	1627	110	Winter
5	2024-02-01	West	Furniture	Sofas	Sofas Model 1	14	3336	1285	76	Summer
6	2024-11-27	West	Furniture	Sofas	Sofas Model 6	6	3002	305	52	Winter
7	2024-09-13	East	Furniture	Chairs	Chairs Model 5	9	2581	1933	118	Winter
8	2024-10-03	North	Clothing	Jackets	Jackets Model 7	7	4007	771	109	Festive
9	2024-01-01	East	Furniture	Tables	Tables Model 2	2	3156	2115	44	Festive
10	2024-12-12	North	Electronics	Laptops	Laptops Model 4	16	3272	2019	94	Winter
11	2024-04-14	East	Clothing	Jeans	Jeans Model 9	17	3257	1993	21	Festive
12	2024-03-02	North	Electronics	Phones	Phones Model 2	16	1530	828	63	Summer
13	2024-09-18	South	Electronics	Laptops	Laptops Model 7	13	1916	333	95	Summer
14	2024-12-09	East	Furniture	Sofas	Sofas Model 5	3	3710	2916	52	Summer
15	2024-03-21	East	Electronics	Phones	Phones Model 3	17	2678	832	69	Festive
16	2024-08-07	North	Electronics	Laptops	Laptops Model 6	8	3722	3148	11	Winter
17	2024-07-07	South	Clothing	Tables	Tables Model 1	19	4068	3753	77	Festive

/*Clean Data (SQL) Data Cleaning*/

```
DELETE FROM retail_business_data
WHERE Sales IS NULL
OR Cost IS NULL
OR Units_Sold IS NULL;
```

select * from retail_business_data

Order_ID	Order_Date	Region	Category	Sub_Category	Product_Name	Units_Sold	Sales	Cost	Inventory_Days	Season
1	2024-05-05	West	Furniture	Tables	Tables Model 0	18	1915	1237	21	Festive
2	2024-05-17	West	Furniture	Tables	Tables Model 0	14	2367	2182	70	Winter
3	2024-05-01	East	Clothing	Jeans	Jeans Model 7	12	4983	996	44	Winter
4	2024-05-17	East	Clothing	Jeans	Jeans Model 3	18	2197	1027	110	Winter
5	2024-05-21	West	Furniture	Sofas	Sofas Model 1	14	3336	1285	76	Summer
6	2024-11-27	West	Furniture	Sofas	Sofas Model 6	6	3002	305	52	Winter
7	2024-09-13	East	Furniture	Chairs	Chairs Model 5	9	2581	1933	118	Winter
8	2024-10-03	North	Clothing	Jackets	Jackets Model 7	7	4007	771	109	Festive
9	2024-01-01	East	Furniture	Tables	Tables Model 2	2	3156	2115	44	Festive
10	2024-12-12	North	Electronics	Laptops	Laptops Model 4	16	3272	2019	94	Winter
11	2024-09-18	East	Clothing	Jeans	Jeans Model 17	17	3221	1993	21	Festive
12	2024-09-09	South	Electronics	Phones	Phones Model 2	19	1939	1153	63	Summer
13	2024-09-18	South	Electronics	Laptops	Laptops Model 7	13	1916	333	95	Summer
14	2024-12-09	East	Furniture	Sofas	Sofas Model 5	3	3710	2916	52	Summer
15	2024-05-21	East	Electronics	Phones	Phones Model 3	17	2678	832	69	Festive
16	2024-05-07	North	Electronics	Laptops	Laptops Model 6	8	3722	3148	11	Winter
17	2024-07-07	South	Furniture	Tables	Tables Model 1	18	4056	3733	27	Festive
18	2024-05-18	East	Clothing	Jackets	Jackets Model 6	5	2346	1792	119	Winter
19	2024-09-27	South	Electronics	Accessories	Accessories M...	19	971	847	56	Festive
20	2024-02-22	West	Clothing	Shirts	Shirts Model 3	16	3496	806	103	Summer
21	2024-07-10	North	Clothing	Jackets	Jackets Model 4	5	2861	367	93	Summer

Query executed successfully.

--Use SQL to calculate profit margins by category and sub-category.

```
select Category,sum(sales - cost) as total_sale
from retail_business_data
group by Category
```

Category	total_sale
Clothing	76873
Electronics	95746
Furniture	104447

Query executed successfully.

```
[1]   from google.colab import files
       uploaded = files.upload()

      Choose File: retail_business_data.csv
      retail_business_data.csv (text/csv) - 15299 bytes, last modified: 12/22/2025 - 100% done
      Saving retail_business_data.csv to retail_business_data.csv

[2] 0s
      import pandas as pd
      df = pd.read_csv('retail_business_data.csv')

[3] 0s
      print(df)

      Order_ID Order_Date Region Category Sub_Category \
      0 1 2024-05-08 West Furniture Tables
      1 2 2024-06-17 West Furniture Tables
      2 3 2024-05-01 East Clothing Jeans
      3 4 2024-12-17 East Clothing Jeans
      4 5 2024-02-01 West Furniture Sofas
      ... ...
      195 196 2024-02-03 North Furniture Tables
      196 197 2024-07-28 West Electronics Laptops
      197 198 2024-06-05 East Clothing Jeans
      198 199 2024-06-01 North Electronics Accessories
      199 200 2024-05-23 East Electronics Phones

      Product_Name Units_Sold Sales Cost Inventory_Days Season
      0 Tables Model 8 16 1815 1237 21 Festive
      1 Tables Model 6 14 2367 2152 70 Winter
      2 Jeans Model 7 12 4083 996 44 Winter
      3 Jeans Model 3 18 2197 1027 110 Winter
      4 Sofas Model 1 14 3336 1285 76 Summer
      ... ...

      print(df.head())

      Order_ID Order_Date Region Category Sub_Category Product_Name \
      0 1 2024-05-08 West Furniture Tables Tables Model 8
      1 2 2024-06-17 West Furniture Tables Tables Model 6
      2 3 2024-05-01 East Clothing Jeans Jeans Model 7
      3 4 2024-12-17 East Clothing Jeans Jeans Model 3
      4 5 2024-02-01 West Furniture Sofas Sofas Model 1

      Units_Sold Sales Cost Inventory_Days Season
      0 16 1815 1237 21 Festive
      1 14 2367 2152 70 Winter
      2 12 4083 996 44 Winter
      3 18 2197 1027 110 Winter
      4 14 3336 1285 76 Summer

#Use Python (Pandas) to run correlation between inventory days and profitability
df['Profit'] = df['Sales'] - df['Cost']

      # Verify
      print(df[['Sales', 'Cost', 'Profit']].head())

      Sales Cost Profit
      0 1815 1237 578
      1 2367 2152 215
      2 4083 996 3087
      3 2197 1027 1170
      4 3336 1285 2051
```