# T. T Inc. Inventory Optimization: From Challenges to Solutions

# **SQL Capstone Project by Ifeoluwa Akinyelure**

--Q1 What is the total number of units sold per product SKU?

Select productid, sum(inventoryquantity) as total\_units\_sold

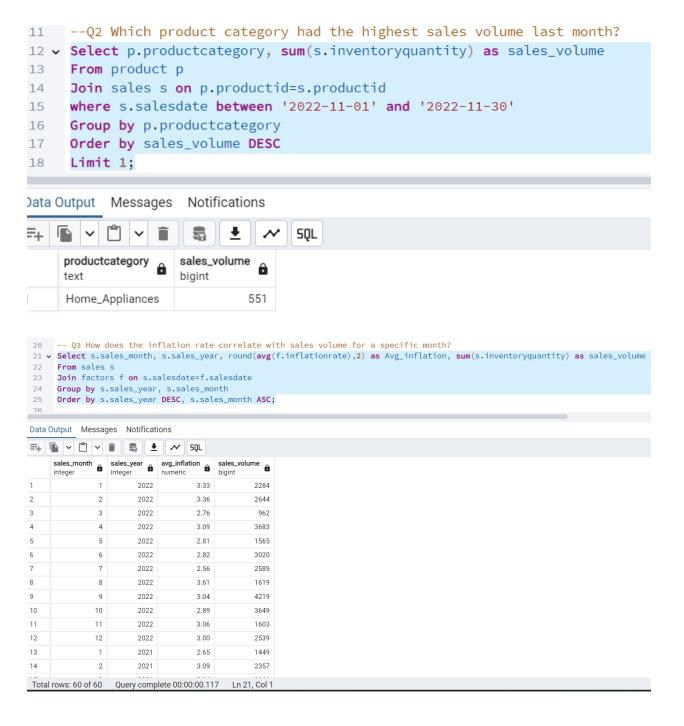
From sales

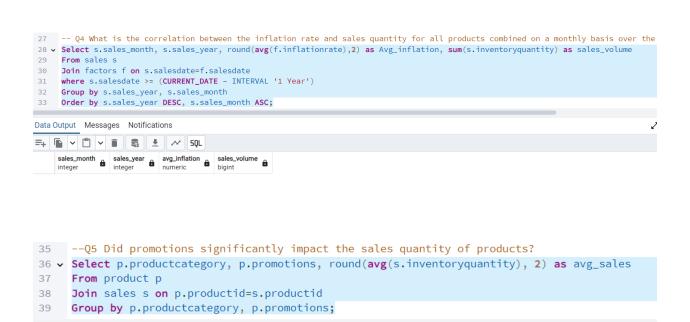
Group by (productid)

Order by total\_units\_sold DESC;

Data Output Messages Notifications

productid numeric     total_units_sold bigint       9806     210       2     3381     201       8486     188	
9806 210 2 3381 201 3 8486 188	
3381 201 8486 188	
8486 188	
8106 186	
3993 182	
9605 178	
9237 176	
6364 176	
3762 173	
0 4450 171	
1 7265 168	
2 5485 164	
3 8025 163	
4 3906 162	
5 3631 160	
6 7131 160 Total rows: 1000 of 1275 Quary complete 00:00:00 170	



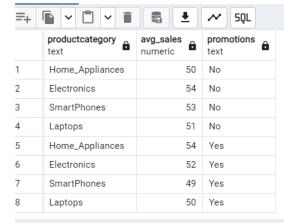


## Data Output Messages Notifications

=+ 🖺 🗸 🗂 🗸 🖺 👲 💉 SQL				
	productcategory text	promotions text	avg_sales numeric	
1	Laptops	Yes	49.64	
2	Electronics	No	53.63	
3	Home_Appliances	No	50.10	
4	Laptops	No	51.08	
5	SmartPhones	Yes	49.26	
6	Electronics	Yes	52.35	
7	Home_Appliances	Yes	54.13	
8	SmartPhones	No	52.70	

```
41 --OR
42 v Select p.productcategory, round(avg(s.inventoryquantity)) as avg_sales, p.promotions
43
     From product p
44
     Join sales s on p.productid=s.productid
     Where p.promotions = 'No'
45
     Group by p.productcategory, p.promotions
46
47
48
     Union All
49
50
     Select p.productcategory, round(avg(s.inventoryquantity)) as avg_sales, p.promotions
     From product p
51
52
     Join sales s on p.productid=s.productid
     Where p.promotions = 'Yes'
     Group by p.productcategory, p.promotions;
```

#### Data Output Messages Notifications



Total rows: 8 of 8 Query complete 00:00:00.100 Ln 42, Col 1

```
--Q6 What is the average sales quantity per product category?

Select p.productcategory, round(avg(s.inventoryquantity)) as Avg_sales_quantity

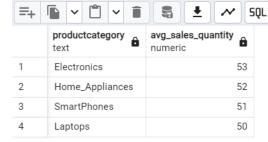
from product p

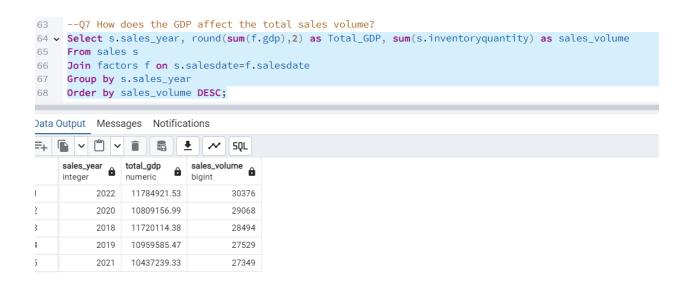
join sales s on p.productid=s.productid

Group by p.productcategory

Order by avg_sales_quantity DESC;
```

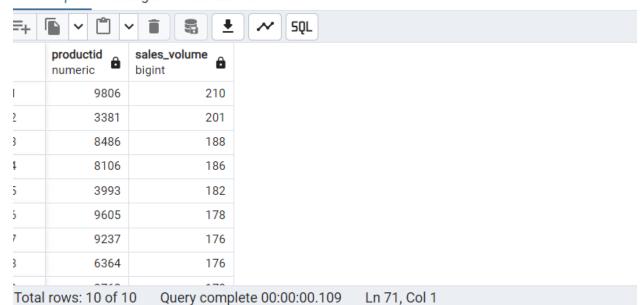
#### Data Output Messages Notifications

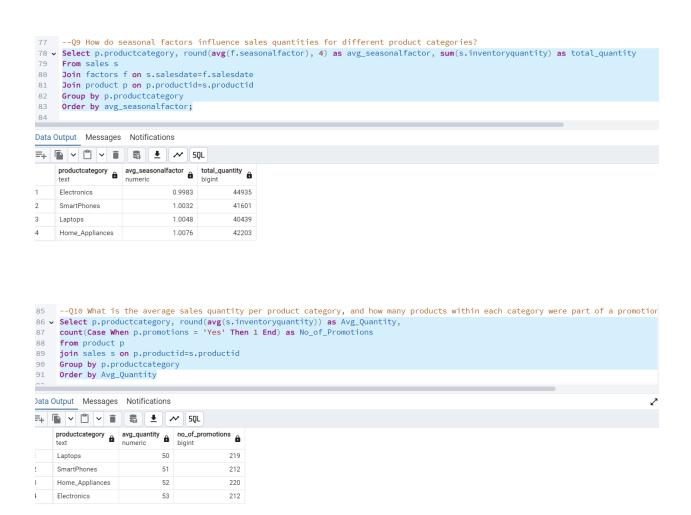




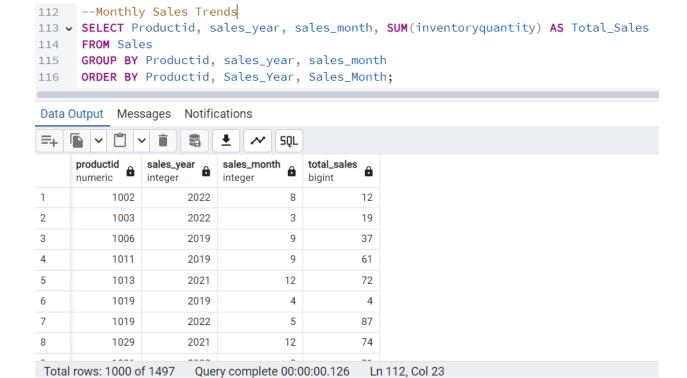


## Data Output Messages Notifications





```
--Average sales and variance for each product to optimize stock levels
103
       SELECT
L04
            productid,
L05
            AVG(inventoryquantity) AS Avg_Sales,
106
            STDDEV(inventoryquantity) AS Sales_Variance,
L07
            MIN(salesdate) AS First_Sale_Date,
            MAX(salesdate) AS Last_Sale_Date
0.8
L09
       FROM sales
110
       GROUP BY Productid:
Data Output Messages Notifications
                                          SQL
=+
                                                                    first_sale_date
                                                                                    last_sale_date
                  avg_sales
      productid
                                           sales_variance
               numeric
                                                                                     date
1
            4773
                      43.00000000000000000
                                                              [null]
                                                                    2020-04-29
                                                                                     2020-04-29
2
            5067
                      51.00000000000000000
                                                              [null]
                                                                    2019-07-15
                                                                                     2019-07-15
                                                                                     2018-10-06
            9515
                      64.000000000000000000
                                                              [null]
                                                                    2018-10-06
3
4
            8756
                      45.00000000000000000
                                               53.7401153701776119
                                                                    2019-03-14
                                                                                     2022-03-16
            9736
                      32.00000000000000000
                                                                    2020-11-03
                                                                                     2020-11-03
5
                                                              [null]
                      79.0000000000000000
                                                                                     2020-04-23
6
            3480
                                                              [null]
                                                                    2020-04-23
            9376
                      32.00000000000000000
                                                                    2019-01-18
                                                                                     2019-01-18
                                                              [null]
            2621
                      21.00000000000000000
                                                              [null]
                                                                    2021-11-15
                                                                                     2021-11-15
Total rows: 1000 of 1375
                          Query complete 00:00:00.137
                                                          Ln 102, Col 71
```



```
--Confirm stockout
128
129 V SELECT
           s.Productid,
130
           f.Salesdate,
131
132
           f.SeasonalFactor,
           COALESCE(SUM(s.InventoryQuantity), 0) AS Total_Sales
133
134
      FROM Factors f
      LEFT JOIN sales s ON s.Salesdate = f.Salesdate
135
      GROUP BY s.Productid, f.Salesdate, f.SeasonalFactor
136
      HAVING COALESCE(SUM(s.InventoryQuantity), 0) = 0;
137
138
Data Output Messages Notifications
                                     SQL
=+
                                          total_sales
     productid
                salesdate
                            seasonalfactor
     numeric
                date
                            numeric
                                          bigint
```

Total rows: 0 of 0 Query complete 00:00:00.075 Ln 128, Col 19

