



Ecommerce Analysis for an online pet supply company

By Anita Durg

CONTENTS

- Number of Transactions by Year
- Top 5 customers based on the transaction year
- Top 5 customers irrespective of year
- Products with more returns
- Top 5 states for revenue
- Top 5 cities for revenue growth
- Most frequently bought products
- Associated Products
- Net Sales Calculation

Number of transactions by Year

```
1 select count(*) as total_sales, year from tbl_clean
2
3
```

| total_sales | year |
|---------------|---------------|
| abc Filter... | abc Filter... |
| 1580 | 2020 |
| 22824 | 2021 |

Get top 5 customers using Stored Procedures.

1 `CALL getTop5CustomerTrans(2021);`

| customer_id | year_of_transact... | total_sales | ranks_sales |
|-------------|---------------------|-------------|-------------|
| 15098 | 2021 | 43164 | 1 |
| 14646 | 2021 | 24362.64 | 2 |
| 17450 | 2021 | 24324.06 | 3 |
| 17511 | 2021 | 16971.48 | 4 |
| 18102 | 2021 | 16743.96 | 5 |

1 `CALL getTop5CustomerTrans(2020);`

| customer_id | year_of_transact... | total_sales | ranks_sales |
|--------------|---------------------|-------------|-------------|
| 15061 | 2020 | 6908.4 | 1 |
| 16210 | 2020 | 5271.12 | 2 |
| 18102 | 2020 | 5047.68 | 3 |
| GUEST_539750 | 2020 | 4504.56 | 4 |
| GUEST_538877 | 2020 | 2992.32 | 5 |

Created a procedure which takes the argument for the year of transaction and gives the result.

Overall Munchy's Top 5 customers

```
1  -- top 5 customers
2  with all_transactions as
3  (select customer_id, round(sum(sales),2) as total_sales
4   from tbl_clean_sales
5   where 1=1
6   group by customer_id
7   order by total_sales desc),
8   ranking_sales as
9   (
10  select *, rank() over(order by total_sales desc) as ranks_sales from all_transactions
11  )
12  select * from ranking_sales where ranks_sales < 6;
```

tion: with 2020_transa...

MyFirstSqlConnection: with 2021_transa...

MyFirstSqlConnection: -- top 5 custome...


| customer_id | total_sales | ranks_sales | |
|--|--|--|--|
| <input type="text" value="abc"/> Filter... | <input type="text" value="abc"/> Filter... | <input type="text" value="abc"/> Filter... | |
| 15098 | 43164 | 1 | |
| 14646 | 24417.84 | 2 | |
| 17450 | 24324.06 | 3 | |
| 18102 | 21791.64 | 4 | |
| 17511 | 18232.2 | 5 | |




Top 5 products with highest sales

```
1  -- Top 5 products with highest sales
2  with cte1 as (
3  select stock_code, round(sum(sales),2) as total_sales
4  from tbl_clean_sales
5  group by stock_code)
6  select cte1.*, p.prod_desc from cte1, tbl_clean_products p where cte1.stock_code = p.s
7  order by total_sales desc limit 5;
8
```

New Connection: select state, re...

 New Connection: -- Top 5 product...

 New Connection: -- Top 5 product...

| stock_code | total_sales | prod_desc |
|--|---|---|
|  Filter... |  Filter... |  Filter... |
| 22423 | 270364.38 | Taste of the Wild High Prairie Grain-Free Dry Dog Food 40lb |
| 47566 | 127641.96 | Memory Foam Pet Beds for Small, Medium, and Large Dogs and Cats |
| 85123A | 122812.8 | Dog and Puppy Pads |
| 85099B | 109288.98 | Earth Rated Dog Poop Bags |
| 22086 | 73287 | Litter Slide Multi-Cat Scented Clumping Clay Cat Litter |

Products with more returns

```
1 with cte_returns as
2 (select tbl_clean_products.stock_code, round(SUM(inv.sales),2) as total_returns
3 from tbl_no_invoice inv, tbl_clean_products
4 where inv.stock_code = tbl_clean_products.stock_code and sales != 0 group by stock_code)
5
6 select cte_returns.stock_code, prod_desc, total_returns
7 from cte_returns left join tbl_clean_products on (cte_returns.stock_code = tbl_clean_
8 where 1=1;
9
```

| stock_code | prod_desc | total_returns |
|------------|---|---------------|
| 85123A | Dog and Puppy Pads | -6479.7 |
| 22423 | Taste of the Wild High Prairie Grain-Free Dry Dog Food 40lb | -6130.8 |
| 85099B | Earth Rated Dog Poop Bags | -1802.76 |
| 23284 | Purina Pro Plan Adult Sensitive Skin | -1484.82 |
| 22086 | Litter Slide Multi-Cat Scented Clumping Clay Cat Litter | -1106.4 |



We see that the product Dog and Puppy pads is the highest in returns. Munchy's need to investigate on that product and see if it is defective.

Top 5 states with highest sales

```
1 select c.state, round(sum(sales),2) as total_sales
2 from tbl_clean_sales join tbl_clean_customers c on (c.customer_id = tbl_clean_sales.cu
3 group by c.state
4 order by total_sales desc
5
6
7
```

California State seems to be the highest in bringing the revenue to the Pet Store

New Connection: -- Top 5 product... New Connection: -- Top 5 product... New Connection: select c.state, ... X

| state | total_sales | |
|--|---|--|
|  Filter... |  Filter... | |
| CA | 172697.76 | |
| FL | 107522.7 | |
| TX | 97361.04 | |
| MA | 88279.68 | |
| NJ | 66961.92 | |

Which state in the East region has highest sales?

```
1 select state, region, round(sum(sales),2) as total_sales ,
2 max(round(sum(sales),2)) over(partition by region) as max_sales
3 from tbl_clean_sales,tbl_clean_customers
4 where tbl_clean_sales.customer_id = tbl_clean_customers.customer_id
5 group by region , state
6 order by region asc, state asc, total_sales desc
7 ;
8
```

| state | region | total_sales | max_sales |
|-------|--------|-------------|-----------|
| CT | East | 9831.54 | 107522.7 |
| DC | East | 2230.26 | 107522.7 |
| DE | East | 9138.9 | 107522.7 |
| FL | East | 107522.7 | 107522.7 |
| GA | East | 28127.52 | 107522.7 |
| MA | East | 88279.68 | 107522.7 |

CONSOLE

RE-RUN QUERY

EXPORT

OPEN

1-50 of 55

Florida has the highest sales in East Region with 107522.7.

Among the four regions, West region has the highest sales.

Top 5 Cities which brings good revenues to Munchy's Store

```
1 CALL getTop5cityRevenues();
```

New Connection: CALL getTop5city... X

| region | state | city | total_sales | city_revenue_ra... |
|---------------|---------------|---------------|---------------|--------------------|
| abc Filter... | abc Filter... | abc Filter... | abc Filter... | abc Filter... |
| East | MA | West Newton | 43164 | 1 |
| Central | IL | Chicago | 29721.48 | 2 |
| Central | TX | Austin | 25230.9 | 3 |
| West | CA | Los Angeles | 22501.5 | 4 |
| West | WA | Shoreline | 21791.64 | 5 |

Note: Created a stored procedure in the ecommerce database and called that procedure in Visual studio

Most frequently bought products

```
1 select stock_code, prod_desc, count(*) as frequency from tbl_clean_sales
2 group by prod_desc ,stock_code
```

| stock_code | prod_desc | frequency |
|------------|---|-----------|
| 85123A | Dog and Puppy Pads | 2282 |
| 85099B | Earth Rated Dog Poop Bags | 2098 |
| 22423 | Taste of the Wild High Prairie Grain-Free Dry Dog Food 40lb | 2003 |
| 47566 | Memory Foam Pet Beds for Small, Medium, and Large Dogs and Cats | 1690 |
| 20725 | Pet Grooming Brush | 1568 |
| 84879 | Pet Odor Eliminator | 1468 |
| 22197 | Sheba Perfect Portions Pat Wet Cat Food | 1401 |
| 22720 | UltraSound Dog Barking Deterrent | 1390 |
| 23203 | Pet Hair Remover | 1232 |
| 22386 | Milk-Bone MaroSnacks Dog Treats with Real Bone | 1220 |

Top seller is Dog and Puppy Pads.

We need to see what other product is frequently sold with Dog and Puppy pads.

Associated Products (products bought together)

```
1 with order_item as
2 (
3   select distinct ts.invoice_no, ts.customer_id, ts.prod_desc, ts.stock_code, ts.transac
4   from tbl_clean_sales ts
5 )
6 select a.prod_desc, b.prod_desc, count(*) as frequency
7 from order_item a inner join order_item b on (a.invoice_no = b.invoice_no and a.stock_
8 group by a.prod_desc, b.prod_desc
9 order by count(*) desc
```

| a.prod_desc | b.prod_desc | frequency |
|--|--|-----------|
| Milk-Bone MaroSnaacks Dog Treats with Real... | Earth Rated Dog Poop Bags | 825 |
| Pet Grooming Brush | Earth Rated Dog Poop Bags | 579 |
| Pet Hair Remover | Earth Rated Dog Poop Bags | 577 |
| Purina ONE SmartBlend Natural Adult Chick... | Memory Foam Pet Beds for Small, Medium, and Lar... | 483 |
| Earth Rated Dog Poop Bags | Dog and Puppy Pads | 451 |
| Sheba Perfect Portions Pat Wet Cat Food | Earth Rated Dog Poop Bags | 400 |
| Taste of the Wild High Prairie Grain-Free Dry... | Memory Foam Pet Beds for Small, Medium, and Lar... | 395 |
| Memory Foam Pet Beds for Small, Medium, ... | Dog and Puppy Pads | 390 |
| UltraSound Dog Barking Deterrent | Rechargeable Pet Nail Grinder | 380 |
| Taste of the Wild High Prairie Grain-Free Dry... | Dog and Puppy Pads | 357 |

From the results, we can see that
Milk-bone snacks + Earth Related
Dog poop bags

Pet Grooming Brush + Earth
Related

Pet Hair remover + Earth related

Purina One smartblend + memory
foam

Dog and puppy Pads + Earth
Related Dog Poop Bags

Net Sales Calculation

1CALL getNetSalesData('14299');

CALL getNetSales...

New Connection: CALL getNetSales...

New Connection: CALL getNetSales... X

🔍 📄 📑 ⋮

| c... | st... | t... | tot... | prod_desc | total_re... | total_ret... | net_qty | net_sales |
|----------|----------|----------|----------|-----------------------|-------------|--------------|-------------|-------------|
| 🔍 Filter | 🔍 Filter | 🔍 Filter | 🔍 Filter | 🔍 Filter... | 🔍 Filter... | 🔍 Filter... | 🔍 Filter... | 🔍 Filter... |
| 14299 | 22197 | 12 | 61.2 | Sheba Perfect Por... | NULL | NULL | 12 | 61.2 |
| 14299 | 22423 | 13 | 864.9 | Taste of the Wild ... | -591.3 | -9 | 4 | 273.6 |
| 14299 | 22720 | 2 | 59.4 | UltraSound Dog ... | NULL | NULL | 2 | 59.4 |
| 14299 | 22960 | 2 | 51 | Rechargeable Pet... | NULL | NULL | 2 | 51 |
| 14299 | 84879 | 10 | 101.4 | Pet Odor Eliminat... | NULL | NULL | 10 | 101.4 |
| 14299 | 85123A | 2 | 35.4 | Dog and Puppy P... | -17.7 | -1 | 1 | 17.7 |

CONSOLE

RE-RUN QUERY

EXPORT

OPEN

1-6 of 6

1CALL getNetSalesData(null);

CALL getNetSales...

New Connection: CALL getNetSales...

New Connection: CALL getNetSales... X

🔍 📄 📑 ⋮

| custo... | st... | total_... | tota... | prod_desc | total |
|-------------|----------|-------------|----------|---|----------|
| 🔍 Filter... | 🔍 Filter | 🔍 Filter... | 🔍 Filter | 🔍 Filter... | 🔍 Filter |
| 12347 | 22423 | 4 | 306 | Taste of the Wild High Prairie Grain-Free Dry Dog Food 40lb | |
| 12347 | 23084 | 14 | 153.84 | Templation Soft Cat Treats | |
| 12349 | 22423 | 1 | 76.5 | Taste of the Wild High Prairie Grain-Free Dry Dog Food 40lb | |
| 12349 | 22720 | 1 | 29.7 | UltraSound Dog Barking Deterrent | |

CONSOLE

RE-RUN QUERY

EXPORT

OPEN

1-50 of 14291

The SQL procedure here will subtract total returns (the returns had all the negative values for quantity and sales) from the total sales for each product. Client wanted to know what products got returned by each customer and compare that with their purchase of that item. Here we notice that the customer 14299, bought 13 quantity of Taste of the wild product and apid 864.9 but looks like the customer returned 9 units of that and got back 591.3. So net profit for the company for that product by that customer is **273.6**

If I send null, I see the entire result with 14291 records for all the customers and their purchases.