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In [ ]: # Septo_Inventry_Analysis Using Mysql+Jupyter Notebook

In [2]: %%load_ext sql
%%sql mysql:mysqlconnector://root:root@localhost/

In [4]: %%sql
use inventory;

* mysql:mysqlconnector://root:***@localhost/
0 rows affected.

Out[4]: []

In [ ]: #DATA EXPLORATION

In [33]: %%sql
select * from septo limit 10; #SAMPLE DATA

* mysql:mysqlconnector://root:***@localhost/
10 rows affected.

Out[33]: sku_id    Category    name    mrp    discountPercent    availableQuantity    discountedSellingPrice    weightInGms    outOfStock    quantity
1    Fruits & Vegetables    Onion    2500.00    16.00    3    2100.00    1000    0    1
2    Fruits & Vegetables    Tomato Hybrid    4200.00    16.00    3    3500.00    1000    0    1
3    Fruits & Vegetables    Tender Coconut    5100.00    15.00    3    4300.00    58    0    1
4    Fruits & Vegetables    Coriander Leaves    2000.00    15.00    3    1700.00    100    0    100
5    Fruits & Vegetables    Ladies Finger    1400.00    14.00    3    1200.00    250    0    250
6    Fruits & Vegetables    Potato    3500.00    17.00    3    2900.00    1000    0    1
7    Fruits & Vegetables    Lemon    7500.00    16.00    3    6300.00    200    0    200
8    Fruits & Vegetables    Watermelon    5800.00    15.00    3    4900.00    58    0    1
9    Fruits & Vegetables    Capsicum Green    2300.00    17.00    3    1900.00    250    0    250
10   Fruits & Vegetables    Chilli Green    1900.00    15.00    3    1600.00    100    0    100

In [27]: %%sql
select * from septo
where category is null
or
name is null
OR
mrp is null
or
discountPercent is null
or
availableQuantity is null
or
discountedSellingPrice is null
or
weightInGms is null
or
outOfStock is null
or
quantity is null; #CHECKING NULL

* mysql:mysqlconnector://root:***@localhost/
0 rows affected.

Out[27]: sku_id    Category    name    mrp    discountPercent    availableQuantity    discountedSellingPrice    weightInGms    outOfStock    quantity

In [28]: %%sql
select distinct category
from septo
order by category; #DIFFERENT PRODUCT CATEGORIES

* mysql:mysqlconnector://root:***@localhost/
14 rows affected.

Out[28]: category
Beverages
Biscuits
Chocolates & Candies
Cooking Essentials
Dairy, Bread & Batter
Fruits & Vegetables
Health & Hygiene
Home & Cleaning
Ice Cream & Desserts
Meats, Fish & Eggs
Munchies
Paan Corner
Packaged Food
Personal Care

In [29]: %%sql
select outOfStock,count(sku_id)
from septo
GROUP BY outOfStock; # PRODUCTS IN STOCK VS OUT OF STOCK

* mysql:mysqlconnector://root:***@localhost/
2 rows affected.

Out[29]: outOfStock    count(sku_id)
0    3274
1    453

In [30]: %%sql
select name,count(sku_id) as "Number Of Sku's"
from septo
group by name
having count(sku_id)
order by count(sku_id) desc limit 20 ; #PRODUCT NAMES PRESENT MULTIPLE TIME

* mysql:mysqlconnector://root:***@localhost/
20 rows affected.

Out[30]: name    Number Of Sku's
Arden Eggs White    10
Saffola Veggie Twist Masala Oats    10
Quaker Oats    10
Sunfeast Yippeel Pasta Treat - Sour Cream Onion    10
Sunfeast YIPPeel Magic Masala Noodles    10
Mother's Recipe Tamarind Paste    10
Amul Delicious Fat Spread - Cholesterol Free    10
Kellogg's Real Almond & Honey Corn Flakes    9
Amul Fresh Cream    8
ID Idli & Dosa Batter    7
Everest Garam Masala    6
Everest Chicken Masala    6
Everest Kilchen King Masala    6
Godrej Yummiez Chicken Nuggets    6
Zorabian Chicken Smoked Ham    6
Godrej Yummiez Chilli Chicken Sausages    6
Everest Tandoori Chicken Masala    6
Godrej Yummiez Chicken Punjabi Tikka    6
Maggi Magic Cubes Extra Chicken    6
Yummiez Chicken Garlic Fingers Pouch    6

In [21]: #DATA CLEANING

In [34]: %%sql
select * from septo
where mrp=0 or discountedSellingPrice=0; #PRODUCTS WITH PRICE=0

* mysql:mysqlconnector://root:***@localhost/
1 rows affected.

Out[34]: sku_id    Category    name    mrp    discountPercent    availableQuantity    discountedSellingPrice    weightInGms    outOfStock    quantity
3607    Home & Cleaning    Cherry Blossom Liquid Shoe Polish Neutral    0.00    0.00    1    0.00    75    0    75

In [35]: %%sql
delete from septo
where mrp=0;

* mysql:mysqlconnector://root:***@localhost/
1 rows affected.

Out[35]: []

In [36]: %%sql
update septo
set mrp=mrp/100.0,
discountedSellingPrice=discountedSellingPrice/100.0; #CONVERTING PAISE TO RUPEES

* mysql:mysqlconnector://root:***@localhost/
3721 rows affected.

Out[36]: []

In [37]: %%sql
select mrp,discountedSellingPrice from septo limit 10;

* mysql:mysqlconnector://root:***@localhost/
10 rows affected.

Out[37]: mrp    discountedSellingPrice
25.00    21.00
42.00    35.00
51.00    43.00
20.00    17.00
14.00    12.00
35.00    29.00
75.00    63.00
58.00    49.00
23.00    19.00
19.00    16.00

In [38]: #Q1.Find the top 10 best-value products based on the discount percentage.

%%sql
select distinct name,mrp,discountPercent
from septo
order by discountPercent desc
limit 10;

* mysql:mysqlconnector://root:***@localhost/
10 rows affected.

Out[38]: name    mrp    discountPercent
Dukes Waffly Chocolate Wafers    45.00    51.00
Dukes Waffly Orange Wafers    45.00    51.00
Dukes Waffly Strawberry Wafers    45.00    51.00
Ceres Foods Fish Mustard Instant Liquid Masala    220.00    50.00
Ceres Foods Laal Maas Instant Liquid Masala    220.00    50.00
Ceres Foods Nalli Nihan Instant Liquid Masala    220.00    50.00
Chef's Basket Durum Wheat Elbow Pasta    160.00    50.00
Chef's Basket Durum Wheat Fusilli Pasta    160.00    50.00
Chef's Basket Durum Wheat Penne Pasta    160.00    50.00
Dukes Waffly Chocolate Wafer Rolls    150.00    50.00

In [39]: #Q2.What are the Products with High MRP but out of Stock.

%%sql
select distinct name,mrp
from septo
where outOfStock=1 and mrp>300
order by name desc;

* mysql:mysqlconnector://root:***@localhost/
4 rows affected.

Out[39]: name    mrp
Patanjali Cow's Ghee    565.00
MamyPoko Pants Standard Diapers, Extra Large (12 - 17 kg)    399.00
Everest Kashmiri Lal Chilli Powder    310.00
Aashirvaad Atta With Multigrains    315.00

In [44]: #Q3.Calculate Estimated Revenue for each category.

%%sql
select category,
sum(discountedSellingPrice * availableQuantity) as Total_Revenue
from septo
group by category
order by Total_Revenue;

* mysql:mysqlconnector://root:***@localhost/
14 rows affected.

Out[44]: category    Total_Revenue
Fruits & Vegetables    10846.00
Meats, Fish & Eggs    20693.00
Biscuits    25007.60
Dairy, Bread & Batter    55051.00
Beverages    55051.00
Health & Hygiene    64180.00
Home & Cleaning    122661.00
Packaged Food    224385.00
Ice Cream & Desserts    224385.00
Chocolates & Candies    224385.00
Personal Care    270849.00
Paan Corner    270849.00
Cooking Essentials    337131.00
Munchies    337131.00

In [51]: #Q4.Find all products where MRP is greater than ₹500 and discount is less than 10%.

%%sql
select distinct name,mrp,discountPercent
from septo
where mrp>500 and discountPercent<10.00
order by mrp desc, discountPercent desc limit 10;

* mysql:mysqlconnector://root:***@localhost/
10 rows affected.

Out[51]: name    mrp    discountPercent
Dhara Kachi Ghani Mustard Oil Jar    1250.00    8.00
Saffola Gold (Jar)    1240.00    0.00
Dhara Filtered Groundnut Oil (Jar)    1050.00    1.00
Fortune Rice Bran Health Oil (Jar)    1050.00    1.00
Dhara Filtered Groundnut Oil (Jar)    1050.00    0.00
Fortune Soyabean Oil    1005.00    0.00
Fortune Sunlite Refined Sunflower (Jar)    925.00    0.00
Surf Excel Matic Powder Front Load    810.00    7.00
Surf Excel Matic Top Load    720.00    9.00
Pedigree Puppy Dry Dog Food Food Chicken & Milk    690.00    6.00

In [61]: #Q5.Identify the top 5 categories offering the highest average discount percentage.

%%sql
select category,
round(avg(discountPercent),2) as avg_discount
from septo
group by category
order by avg_discount desc
limit 5;

* mysql:mysqlconnector://root:***@localhost/
5 rows affected.

Out[61]: category    avg_discount
Fruits & Vegetables    15.46
Meats, Fish & Eggs    11.03
Chocolates & Candies    8.32
Ice Cream & Desserts    8.32
Packaged Food    8.32

In [73]: #Q6. Find the price per gram for products above 100g and sort by best value.

%%sql
select distinct name,weightInGms,discountedSellingPrice,
round(discountedSellingPrice/weightInGms,2) as price_per_gram
from septo
where weightInGms>100
order by price_per_gram
limit 10;

* mysql:mysqlconnector://root:***@localhost/
10 rows affected.

Out[73]: name    weightInGms    discountedSellingPrice    price_per_gram
Aashirvaad Iodised Salt    1000    19.00    0.02
Onion    1000    21.00    0.02
Onion    3000    57.00    0.02
Shubh kart - Nirmal sugandhi mogra wet dhoop zipper 20 sticks    1160    28.00    0.02
Tata Salt    1000    24.00    0.02
Vicks Cough Drops Menthol    1160    20.00    0.02
Baby Potato    500    16.00    0.03
Beetroot    500    13.00    0.03
Carrot    500    15.00    0.03
Potato    1000    29.00    0.03

In [80]: #Q7.Group the products into categories like Low, Medium, Bulk.

%%sql
select distinct name,weightInGms,
case when weightInGms<100 then 'low'
when weightInGms<500 then 'medium'
else 'bulk'
end as weight_category
from septo
limit 25;

* mysql:mysqlconnector://root:***@localhost/
25 rows affected.

Out[80]: name    weightInGms    weight_category
Onion    1000    medium
Tomato Hybrid    1000    medium
Tender Coconut    58    low
Coriander Leaves    100    low
Ladies Finger    250    low
Potato    1000    medium
Lemon    200    low
Watermelon    58    low
Capsicum Green    250    low
Chilli Green    100    low
Banana Robusta    348    low
Garlic Indian    100    low
Cauliflower    58    low
Ginger    200    low
Spinach    250    low
Muskmelon    58    low
Cabbage    250    low
Methi    58    low
Broccoli    500    low
Sapota    348    low
Onion    3000    medium
Potato    3000    medium
Orange Nagpur    232    low
Mint Leaves    100    low
Beans French    250    low

In [76]: #Q8.What is the Total Inventory Weight Per Category.

%%sql
select category,
sum(weightInGms * availableQuantity) as total_weight
from septo
group by category
order by total_weight;

* mysql:mysqlconnector://root:***@localhost/
14 rows affected.

Out[76]: category    total_weight
Meats, Fish & Eggs    48016
Biscuits    84431
Fruits & Vegetables    91794
Health & Hygiene    142904
Dairy, Bread & Batter    143735
Beverages    143735
Personal Care    348187
Paan Corner    348187
Home & Cleaning    373161
Packaged Food    490797
Ice Cream & Desserts    490797
Chocolates & Candies    490797
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