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## Project Abstract

Welcome to my immersive SQL-driven *Paytm Mall Epurchase Data Analysis project* done as part of my Data Analyst Internship with PSYLIQ, where the fusion of data science and healthcare opens doors to a realm of possibilities! This program is a gateway to unlocking the potential of SQL in dissecting and comprehending healthcare data. As an MSc grad in Physics passionate about software development and Data Analytics, this internship promises an invaluable opportunity to wield my skills and broaden my horizons. Throughout this enriching journey, we embark on an exploration of a multifaceted dataset encompassing pivotal elements such as Paytm Mall Epurchase (S#no, Name, Shipping\_city, Category\_Grouped, Category, Sub\_category, Product\_Gender, Segment, Class, Family, Brand, Brick, Item\_NM, Color, Size, Sale\_Flag, Payment\_Method, coupon\_money\_effective, Coupon\_Percentage, Quantity, Cost\_Price, Item\_Price, Special\_Price\_effective, paid\_pr\_effective, Value\_CM1, Value\_CM2, Special\_price, Paid\_pr). This comprehensive real-world dataset mirrors the intricacies of healthcare data, serving as a robust platform to sharpen your SQL prowess.

## Paytm Mall Epurchase Data Assessment Details

**1. What does the "Category\_Grouped" column represent, and how many unique categories are there?**

```
SELECT COLUMN_NAME
FROM INFORMATION_SCHEMA.COLUMNS
WHERE TABLE_NAME = 'purchase';
```

**2. Can you list the top 5 shipping cities in terms of the number of orders?**

```
SELECT TOP 5 Shipping_city, COUNT(*) AS OrdersCount
FROM Purchase
GROUP BY Shipping_city
ORDER BY OrdersCount DESC;
```

**3. Show me a table with all the data for products that belong to the "Electronics" category.**

```
SELECT *
FROM Purchase
WHERE Category_Grouped = 'Electronics';
```

**4. Filter the data to show only rows with a "Sale\_Flag" of 'Yes'.**

```
SELECT *
FROM Purchase
WHERE Category_Grouped = 'Electronics' AND Sale_Flag = 'Yes';
```

**5. Sort the data by "Item\_Price" in descending order. What is the most expensive item?**

```
SELECT TOP 1 *
FROM Purchase
ORDER BY Item_Price DESC;
```

**6. Apply conditional formatting to highlight all products with a "Special\_Price\_effective" value below \$50 in red.**

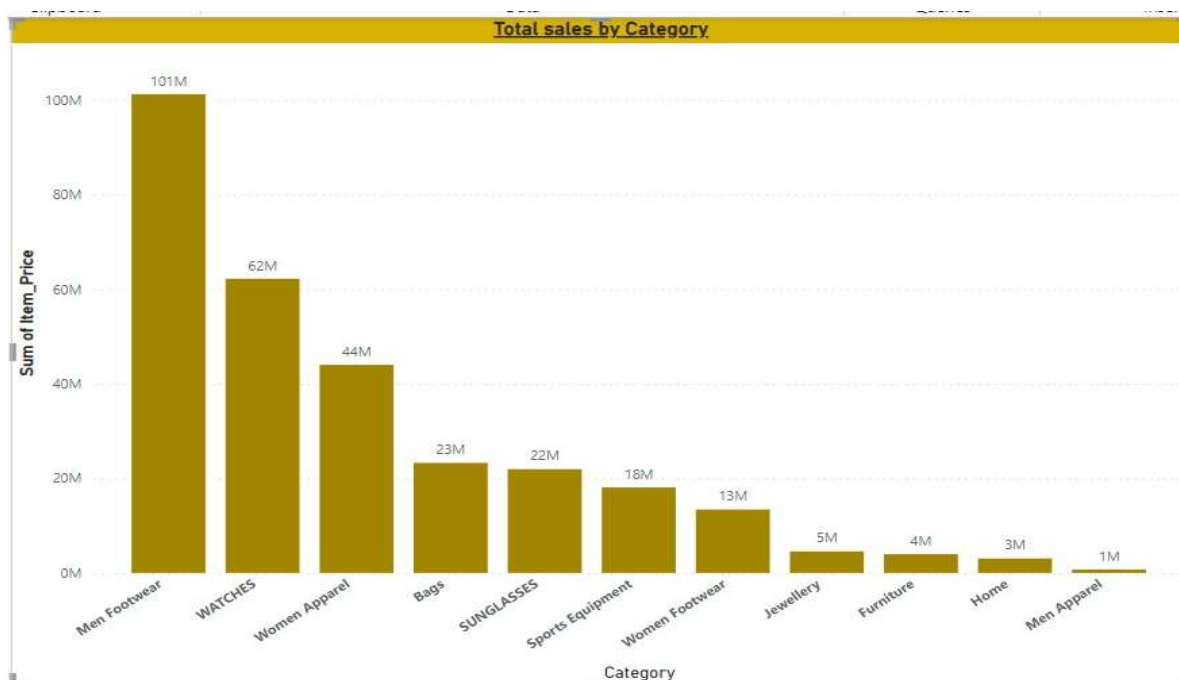
```
SELECT TOP 1 *
FROM Purchase
ORDER BY Item_Price DESC;

SELECT *,
CASE
    WHEN Special_Price_effective < 50 THEN 'Below $50'
    ELSE 'Above $50'
END AS Price_Category
FROM Purchase;
```

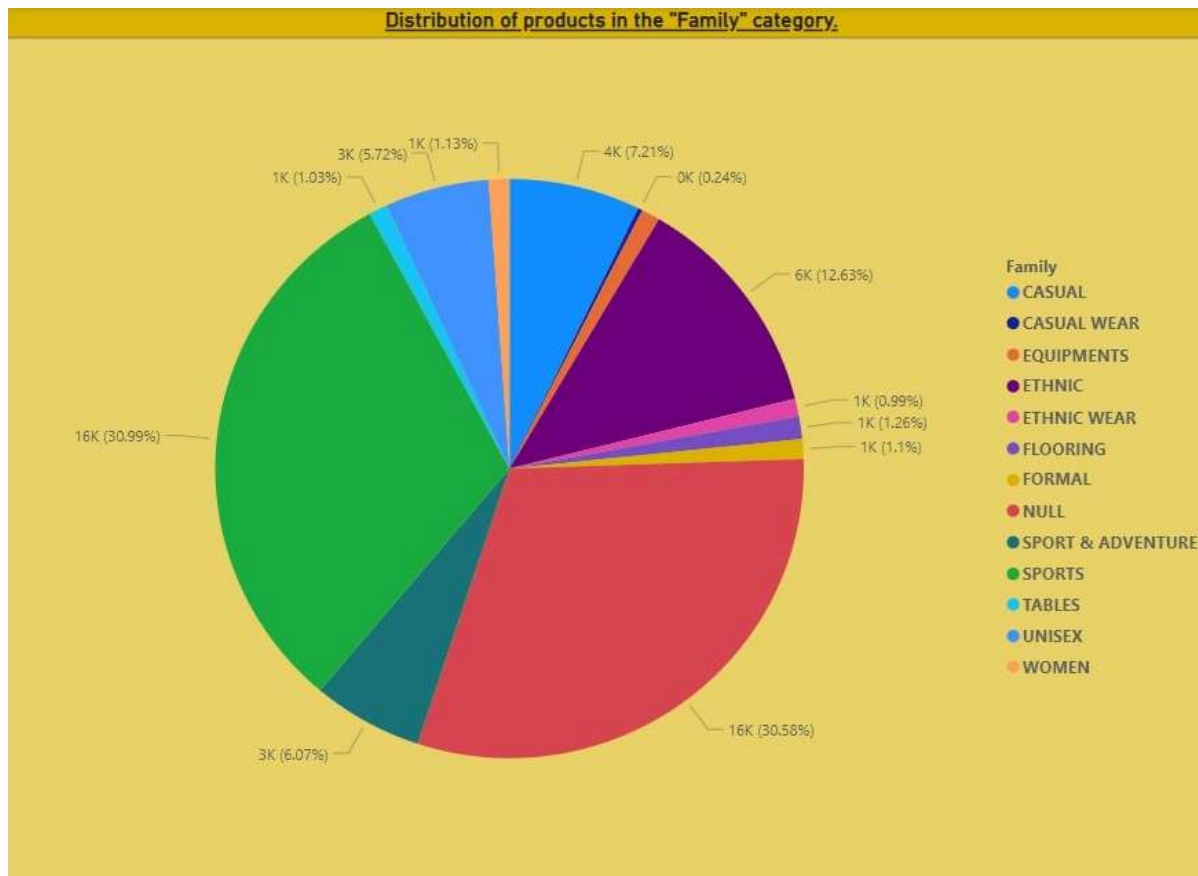
**7. Create a pivot table to find the total sales value for each category.**

```
SELECT Category_Grouped, SUM(Item_Price) AS TotalSalesValue
FROM Purchase
GROUP BY Category_Grouped;
```

**8. Create a bar chart to visualize the total sales for each category.**



9. Create a pie chart to show the distribution of products in the "Family" category.



10. Ensure that the "Payment\_Method" column only contains valid payment methods (e.g., Visa, MasterCard).

```
UPDATE Purchase
SET Payment_Method =
CASE
    WHEN Payment_Method NOT IN ('Visa', 'MasterCard') THEN NULL --
    ELSE Payment_Method
END;
```

### 11. Calculate the average "Quantity" sold for products in the "Clothing" category, grouped by "Product\_Gender."

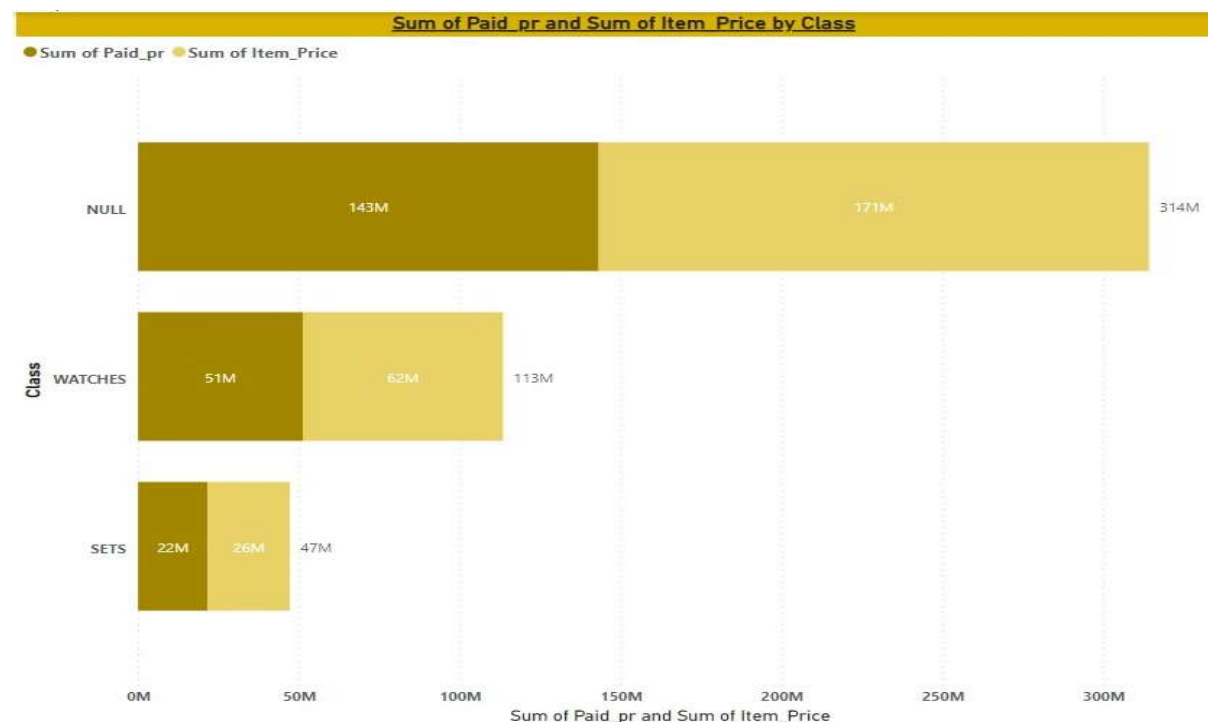
```
SELECT Product_Gender, AVG(Quantity) AS AverageQuantitySold
FROM Purchase
WHERE Category_Grouped = 'Clothing'
GROUP BY Product_Gender;
```

### 12. Find the top 5 products with the highest "Value\_CM1" and "Value\_CM2" ratios. Create a chart to visualize this data.

```
SELECT TOP 5 *,
       Value_CM1 / NULLIF(Value_CM2, 0) AS Ratio_Value_CM1_to_CM2
FROM Purchase
WHERE Value_CM2 <> 0
ORDER BY Ratio_Value_CM1_to_CM2 DESC;
```

### 13. Identify the top 3 "Class" categories with the highest total sales. Create a stacked bar chart to represent this data.

```
SELECT TOP 3 Class, SUM(Item_Price) AS TotalSales
FROM Purchase
GROUP BY Class
ORDER BY TotalSales DESC;
```



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**14. Use VLOOKUP or INDEX-MATCH to retrieve the "Color" of a product with a specific "Item\_NM."**

```
SELECT Color
FROM Purchase
WHERE Item_NM = 'your_specific_Item_NM';
```

**15. Calculate the total "coupon\_money\_effective" and "Coupon\_Percentage" for products in the "Electronics" category.**

```
SELECT
    SUM(coupon_money_effective) AS TotalCouponMoney,
    SUM(Coupon_Percentage) AS TotalCouponPercentage
FROM Purchase
WHERE Category_Grouped = 'Electronics';
```

**16. Perform a time series analysis to identify the month with the highest total sales.**

```
--SELECT top 1
--    DATEPART(month, YourDateColumn) AS SalesMonth,
--    SUM(Item_Price) AS TotalSales
--FROM Purchase
--GROUP BY DATEPART(month, YourDateColumn)
--ORDER BY TotalSales DESC
```

17. Calculate the total sales for each "Segment" and create a scatter plot to visualize the relationship between "Item\_Price" and "Quantity" in this data.



18. Use the AVERAGEIFS function to find the average "Item\_Price" for products that have a "Sale\_Flag" of 'Yes.'

```
SELECT AVG(Item_Price) AS AverageItemPrice
FROM Purchase
WHERE Sale_Flag = 'Yes';
```

19. Identify products with a "Paid\_pr" higher than the average in their respective "Family" and "Brand" groups.

```
SELECT *
FROM Purchase P1
WHERE Paid_pr > (
    SELECT AVG(Paid_pr)
    FROM Purchase P2
    WHERE P1.Family = P2.Family AND P1.Brand = P2.Brand
);
```

---

**20. Create a pivot table to show the total sales for each "Color" within the "Clothing" category and use conditional formatting to highlight the highest sales.**

```
SELECT
    Color,
    SUM(Item_Price) AS TotalSales
FROM Purchase
WHERE Category_Grouped = 'Clothing'
GROUP BY Color;
```



## RESULTS from SQL Server

Object Explorer

Connect

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Databases

- System Databases
- master
- Tables
- System Tables
- External Tables
- Graph Tables
- dbo.data\_dictionary\$
- dbo.employee\_survey\_data
- dbo.GENERAL\_DATA
- dbo.manager\_survey\_data
- dbo.Pharma\_data
- Columns
- Distributor (nvarchar)
- Customer Name (nvar
- City (nvarchar(255), n
- Country (nvarchar(255
- Latitude (float, null)
- Longitude (float, null)
- Channel (nvarchar(255
- Sub-channel (nvarchar
- Product Name (nvarchar
- Product Class (nvarchar
- Quantity (float, null)
- Price (float, null)
- Sales (float, null)
- Month (nvarchar(255)
- Year (float, null)
- Name of Sales Rep (n
- Manager (nvarchar(255
- Sales Team (nvarchar
- Keys
- Constraints
- Triggers

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Results Messages

Column Name

- SIdno
- Name
- Shipping\_city
- Category\_Grouped
- Category
- Sub\_category
- Product\_Gender
- Segment

Shipping\_city OrdersCount

- New Delhi 4560
- Chennai 4254
- Bangalore 3974
- Mumbai 3159
- Hyderabad 2849

SIdno Name Shipping\_city Category\_Grouped Category Sub\_category Product\_Gender Segment Class Family Brand Brick Item\_NM Color Size Sale\_Flag Payment\_Method coupon\_money\_effective Coupon\_Percentage Quantity

SIdno Name Shipping\_city Category\_Grouped Category Sub\_category Product\_Gender Segment Class Family Brand Brick Item\_NM Color Size Sale\_Flag Payment\_Method coupon\_money\_effective Coupon\_Percentage Quantity

SIdno Name Shipping\_city Category\_Grouped Category Sub\_category Product\_Gender Segment Class Family Brand Brick Item\_NM Color Size Sale\_Flag Payment\_Method coupon\_money\_effective Coupon\_Percentage Quantity

1 2296 Deepak Srivasta Lucknow NULL Men Footwear Mens Footwear MEN MENS FOOTWEAR Class NULL SPORTS ADIDAS RUNNING SHOES Element Soul M Black Running Shoes BLACK 9 Not on Sale NULL 0

SIdno Name Shipping\_city Category\_Grouped Category Sub\_category Product\_Gender Segment Class Family Brand Brick Item\_NM Color Size Sale\_Flag Payment\_Method coupon\_money\_effective Coupon\_Percentage Quantity

- 2280 Suni Agrawal New Delhi Others Bags Bags WOMEN WOMEN NULL HIDESIGN HANDBAG Brown Handbag BROWN NULL Not on Sale NULL 0
- 2281 PRAKASH Bangalore Apparels Women Ethnic WOMEN WOMEN SETS ETH. SANGRIA SUIT SET Navy Blue Geo. NAVY NULL Not on Sale NULL 0
- 2282 vinod kumar Yadodara NULL Men F. MENS FOO. MEN MENS NULL SPO. PUMA CRICKET Irdium II Full S. WHITE 10 On Sale NULL 0
- 2283 Mahesh Wa. Nagpur NULL Men F. Mens Footr. MEN MENS NULL SPO. ADIDAS RUNNIN. Element Soul BLACK 9 Not on Sale NULL 0
- 2284 shalish shr. Indore Shoes Mens F. MEN MENS NULL SPO. NIKE RUNNIN. Nike LunarGL. GREY 7 On Sale NULL 0
- 2285 ajay mishra Bangalore NULL Men F. MENS FOO. MEN MENS NULL SPO. NIKE FOOTBA. Mercual Vel. BLUE 7 Not on Sale NULL 0
- 2286 Joseph Vidy. Secundera... Shoes Women. WOMEN WOMEN LADIES. RUNNIN. Lunarsw+ 4. BLACK 5 On Sale NULL 0
- 2287 Saravabh... Erode NULL Bags Bags WOMEN WOMEN NULL NULL HIDESIGN HANDBAG Black Leather... BLACK NULL Not on Sale NULL 1000

Query executed successfully

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Object Explorer

Connect

CRYPTOGRAPHIC-A\SQLEXPRESS (SQL Se

Databases

System Databases

master

Tables

System Tables

External Tables

Graph Tables

dbo.data\_dictionary\$

dbo.employee\_survey\_data

dbo.GENERAL\_DATA

dbo.manager\_survey\_data

dbo.Pharma\_data

Columns

Distributor (nvarchar)

Customer Name (nvar

City (nvarchar(255), n

Country (nvarchar(255

Latitude (float, null)

Longitude (float, null)

Channel (nvarchar(25

Sub-channel (nvarcha

Product Name (nvardc

Product Class (nvarch

Quantity (float, null)

Price (float, null)

Sales (float, null)

Month (nvarchar(255)

Year (float, rep)

Name of Sales Rep (n

Manager (nvarchar(25

Sales Team (nvarchar

Keys

Constraints

Triggers

SQLQuery1.sql - CR\_Cryptographic (691)\*

-vs9268.sql - CRYP...\_Cryptographic (64)\*

SQLQuery1 hr analy...sql - not connected\*

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Results

Messages

Category_Grouped	TotalSales/value
Apparels	56208837
Others	83734877
Shoes	68406549
NULL	85054962
Home	3051213

Product_Gender	AverageQuantitySold																
Sitro	Name	Shipping_city	Category_Grouped	Category	Sub_category	Product_Gender	Segment	Class	Family	Brand	Brick	Item_NM	Color	Size	Sale_Flag	Payment_Method	
1	2282	vind kumar	Vadodara	NULL	Men Footwear	MENS FOOTWEAR	MEN	MENS FOOTWEAR	NUL	SPORTS	PUMA	CRICKET	Iidium I Full Spike White Cricket Shoes	WHITE	10	On Sale	NULL
2	9708	PRANSH..	Ambikapur	Others	WATCHES	WATCHES	MEN	MENS ACCESSO..	WA..	NULL	GIO..	CHRO..	Gordano Black Chronograph Watches	BLACK	N.	On Sale	NULL
3	9780	annachal..	Nagercoil	Others	WATCHES	WATCHES	MEN	MENS ACCESSO..	WA..	NULL	GIO..	CHRO..	Gordano Black Chronograph Watches	BLACK	N.	On Sale	NULL
4	1304	SANTOSH..	BALLIA	Others	WATCHES	WATCHES	MEN	MENS ACCESSO..	WA..	NULL	GIO..	CHRO..	Gordano Black Chronograph Watches	BLACK	N.	On Sale	NULL
5	1578	Srinivas R..	Mumbai	NULL	Men Footwear	MENS FOOTWEAR	MEN	MENS FOOTWEAR	NULL	SPORTS	PUMA	CRICKET	Iidium I Full Spike White Cricket Shoes	WHITE	10	On Sale	NULL

Class	TotalSales
1 NULL	170960090
2 WATCHES	62213793
3 SETS	25529167

Color	
TotalCouponMoney	TotalCouponPercentage
1 NULL	NULL

AverageltemPrice
1 NULL

Sitro	Name	Shipping_city	Category_Grouped	Category	Sub_category	Product_Gender	Segment	Class	Family	Brand	Brick	Item_NM	Color	Size	Sale	
1	2281	PRAKASH REDDY	Bangalore	Apparels	Women Apparel	Ethnic	WOMEN	WOMENS WEAR	SETS	ETHNIC	SANGRIA	SUIT SET	Navy Blue Georgette Brocade Neck & Dupatta Suit...	NAVY BLUE	NULL	Not
2	2284	shailesh shiva	Indore	Shoes	Men Footwear	Mens Footho...	MEN	MENS FOOTW...	NULL	SPOR..	NIKE	RUNN...	Nike Lunarglider+ 4 Grey Running Shoes	GREY	7	On t
3	2287	Selpaprabu C	Erode	NULL	Bags	WOMEN	WOMEN	WOMEN	NULL	NULL	HIDESI...	HANDC...	Black Leather Handbag	BLACK	NULL	Not
4	2288	SHAFIQUE ALAM	Nagpur	Shoes	Men Footwear	Mens Footho...	MEN	MENS FOOTW...	NULL	SPOR..	PUMA	SNEAK...	Puma Sneakers Black	BLACK	9	Not
5	2290	ANKET KADU	Nagar	NULL	Bags	WOMEN	WOMEN	WOMEN	NULL	NULL	HIDESI...	HANDC...	Durning Street 04 Blue Handbag	BLUE	NULL	Not
6	2292	SHAMBHU SHU..	Rapur	NULL	SUNGGLASSES	SUNGGLASS	WOMEN	SUNGGLASSES	OVAL	WOM..	RAY BAN	OVAL	Rb 4153 710 Green Oval	GREEN	62	Not
7	2293	ALOK XIAMR	Bhubanesh..	Others	SUNGGLASSES	SUNGGLASS..	UNISEX	SUNGGLASSES	AVIAL	UNISEX	RAY BAN	AVIATOR	Grey Sunglasses	GREY	55	Not
8	2295	manisha treani	New Delhi	Shoes	Men Footwear	Mens Footho...	MEN	MENS FOOTW...	NULL	SPOR..	NIKE	RUNN...	Free 3.0 Grey Running Shoes	GREY	9	Not

Query executed successfully.

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