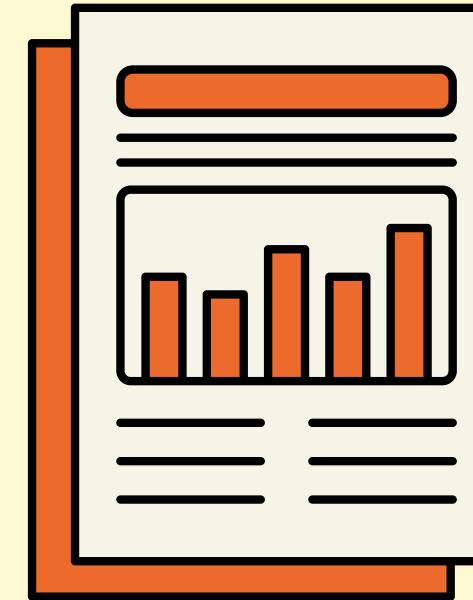
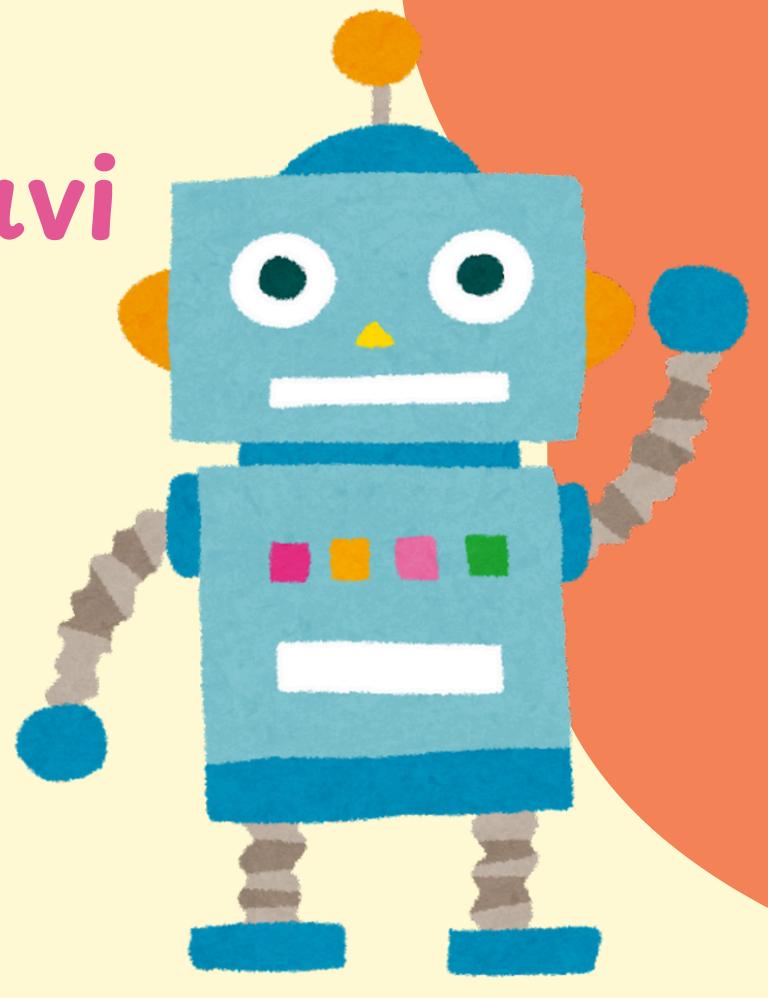


MAVEN TOYS SALES ANALYSIS



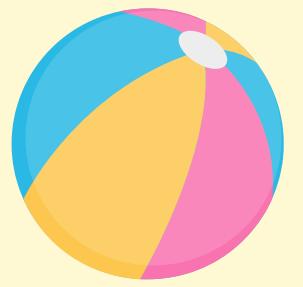
- by Fareen Maulavi



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- OBJECTIVES
- DATA EXPLORATION AND ANALYSIS
- DATABASE SCHEMA
- SOLUTIONS TO QUESTIONS
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INTRODUCTION

In this project, we aim to analyze toy sales data from a hypothetical retail company. The data is spread across four key tables: inventory, products, sales, and stores. Each table provides valuable information about the stock levels, product details, sales transactions, and store operations.

Through this analysis, we aim to help the company understand its sales trends, manage stock levels more effectively, and identify the best and worst-performing stores and products. Ultimately, this will assist in making data-driven decisions that will enhance overall operational efficiency.

OBJECTIVES



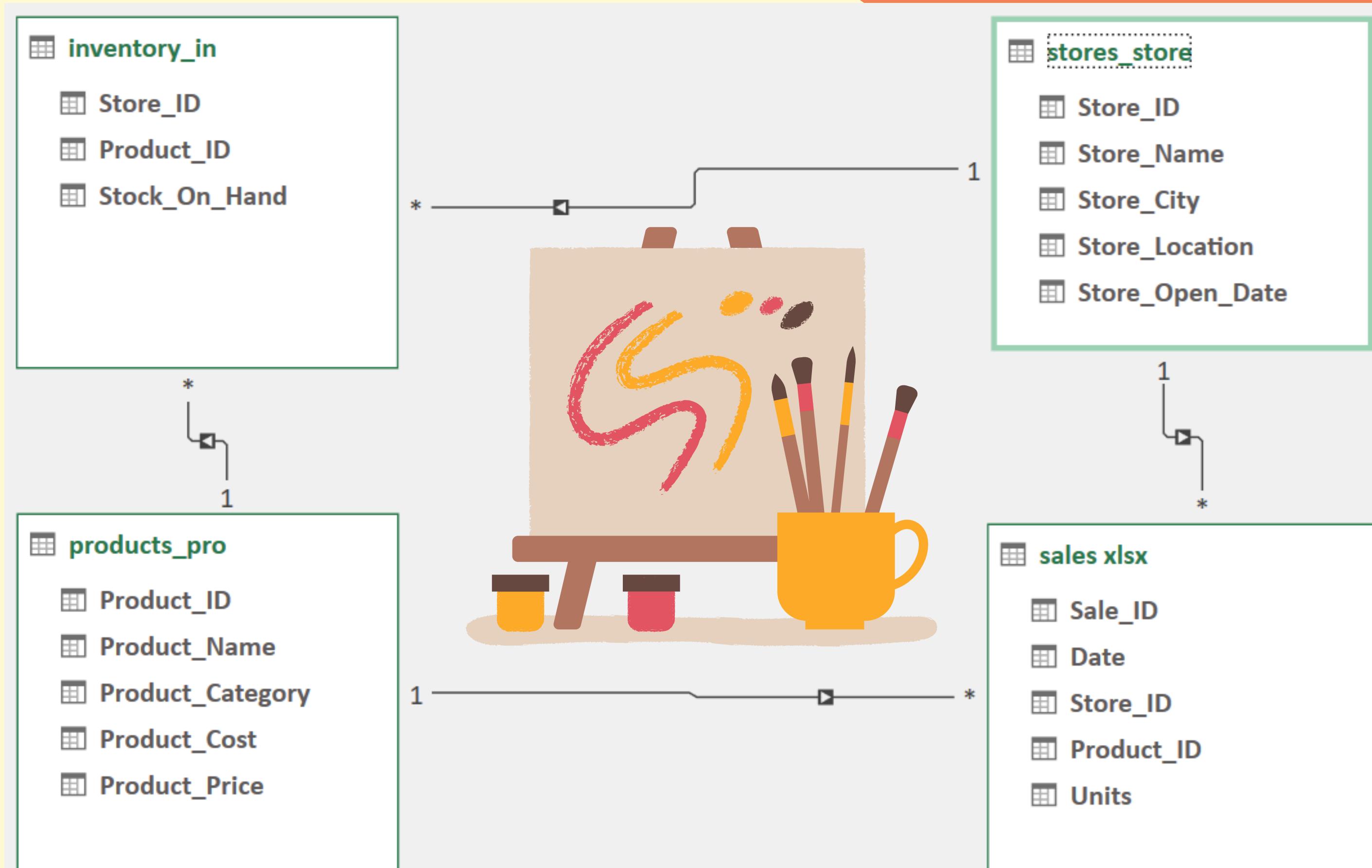
The primary objective of this project is to conduct a thorough analysis of the toy sales data to provide insights into various aspects of the business. Specifically, we aim to:

- Evaluate total sales revenue generated by each store.
- Identify top-selling products and measure their performance across different product categories.
- Analyze inventory levels and detect products that are out of stock or not.
- Track monthly sales trends across stores and sales growth over time.
- Determine the profit margin for each product by comparing sales and product costs.
- Assess store performance based on opening date.
- Compare sales performance to current stock levels .
- Evaluate how sales contributions are distributed across stores and product categories.

DATA EXPLORATION AND ANALYSIS

- Import data
- Find any missing values.
- use aggregate functions such as **avg**, **sum**, **count**
- use **Join clause** to fetch data from different tables, based on related column between them.
- use **round()** to round specific number of decimal, In my analysis it is 4.
- use conditional statement such as **where**.
- use **window function** such as **lag** for accessing the previous row of the data.
- group and sort data using **group by** and **order by** statement
- use **cte(Common Table Expression)** to store the results of the subquery, so we can reuse them throughout a larger query.
- use of **Limit** to display the number of rows we want in our result.

DATABASE SCHEMA



Lets walk through the SQL solutions to
answer key business questions.

1. What is the total sales revenue generated by each store?

```
SELECT  
    Stores.Store_Name,  
    SUM(Products.Product_Price * Sales.Units) AS Total_Revenue_$  
FROM  
    Stores  
        JOIN  
    Sales ON Stores.Store_ID = Sales.Store_ID  
        JOIN  
    Products ON Products.Product_Id = Sales.Product_Id  
GROUP BY Stores.Store_Name  
ORDER BY Total_Revenue_$ DESC;
```



| | Store_Name | Total_Revenue_\$ |
|---|-------------------------------|--------------------|
| ▶ | Maven Toys Ciudad de Mexico 2 | 188254.78999999166 |
| | Maven Toys Guadalajara 3 | 151058.51000000603 |
| | Maven Toys Ciudad de Mexico 1 | 150860.81000000058 |
| | Maven Toys Guadalajara 4 | 130931.02000001378 |
| | Maven Toys Toluca 1 | 124224.14000001283 |
| | Maven Toys Ciudad de Mexico 4 | 124163.75000001294 |
| | Maven Toys Monterrey 1 | 117294.46000000948 |
| | Maven Toys Monterrey 4 | 115669.86000000853 |
| | Maven Toys Monterrey 2 | 115304.26000001204 |
| | Maven Toys Hermosillo 3 | 115101.09000000858 |
| | Maven Toys Saltillo 1 | 112837.14000001203 |

2. Which products are the top-selling in terms of units sold?

SELECT

Products.Product_Name, SUM(Sales.Units) AS Unit_Sold

From

Products

Join

Sales ON Products.Product_Id = Sales.Product_Id

Group By Products.Product_Name

Order By Unit_Sold DESC

LIMIT 10;



| | Product_Name | Unit_Sold |
|---|----------------|-----------|
| ▶ | Colorbuds | 56903 |
| | Deck Of Cards | 31795 |
| | Splash Balls | 29420 |
| | PlayDoh Can | 28140 |
| | Action Figure | 27127 |
| | Lego Bricks | 18621 |
| | Animal Figures | 15330 |
| | Dart Gun | 14406 |
| | Rubik's Cube | 14277 |
| | Glass Marbles | 13010 |

3. What is the sales performance by product category?

SELECT DISTINCT

```
Product_Category,  
ROUND(SUM(Products.Product_Price * Sales.Units),  
4) AS Sales_$,  
SUM(Sales.Units) AS Units_Sold
```

From

Products

Join

```
Sales ON Products.Product_Id = Sales.Product_Id
```

Group By Product_Category

Order By Sales_\$ DESC;



| Product_Category | Sales_\$ | Units_Sold |
|-------------------|------------|------------|
| Toys | 1764930.48 | 94152 |
| Electronics | 1004574.58 | 62942 |
| Sports & Outdoors | 761618.84 | 61216 |
| Games | 745744.7 | 67530 |
| Art & Crafts | 440606.57 | 55143 |

4. What are the current inventory levels for each product at each store?

SELECT

```
Stores.Store_Name,  
Products.Product_Name,  
Inventory.Stock_On_Hand AS Current_Level
```

From

```
Products
```

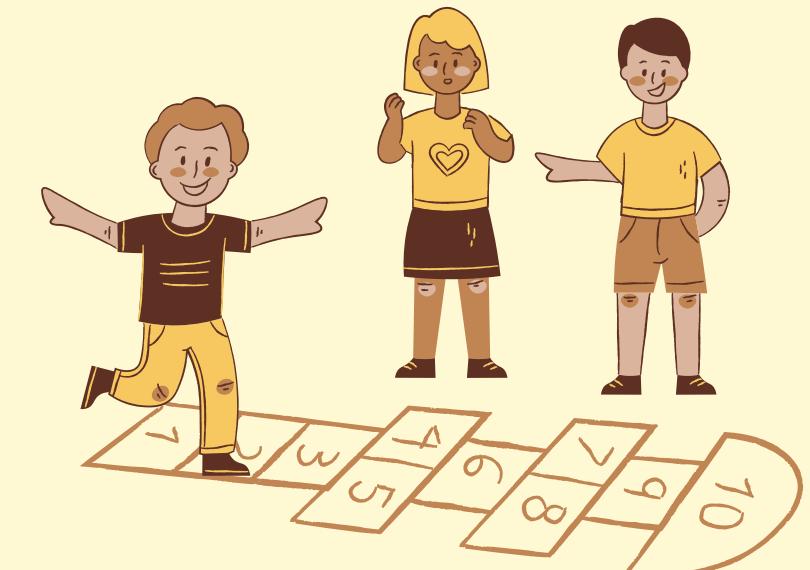
Join

```
Inventory ON Products.Product_Id = Inventory.Product_Id
```

Join

```
Stores ON Stores.Store_ID = Inventory.Store_ID
```

```
Order By Stores.Store_Name, Products.Product_Name;
```



| | Store_Name | Product_Name | Current_Level |
|---|-----------------------------|------------------|---------------|
| ▶ | Maven Toys Aguascalientes 1 | Action Figure | 11 |
| | Maven Toys Aguascalientes 1 | Animal Figures | 25 |
| | Maven Toys Aguascalientes 1 | Barrel O' Slime | 13 |
| | Maven Toys Aguascalientes 1 | Chutes & Ladders | 1 |
| | Maven Toys Aguascalientes 1 | Classic Dominoes | 4 |
| | Maven Toys Aguascalientes 1 | Colorbuds | 46 |
| | Maven Toys Aguascalientes 1 | Dart Gun | 15 |
| | Maven Toys Aguascalientes 1 | Deck Of Cards | 53 |
| | Maven Toys Aguascalientes 1 | Dino Egg | 19 |
| | Maven Toys Aguascalientes 1 | Dinosaur Figures | 19 |

5. How do monthly sales trends vary across different stores?

SELECT

```
MONTHNAME(Date) AS Month_Name,  
Stores.Store_Name,  
ROUND(SUM(Products.Product_Price * Sales.Units),2) as Sale_$  
From  
Sales  
Join  
Stores ON Stores.Store_ID = Sales.Store_ID  
Join Products on Products.Product_Id = Sales.Product_Id  
Group By Month_Name , Stores.Store_Name  
Order By FIELD(Month_Name,  
'January','February','March','April','May','June','July',  
'August','September','October','November','December') , Sale_$ DESC;
```

| | Month_Name | Store_Name | Sale_\$ |
|---|------------|-------------------------------|----------|
| ▶ | January | Maven Toys Ciudad de Mexico 1 | 22336.76 |
| | January | Maven Toys Ciudad de Mexico 2 | 18540.45 |
| | January | Maven Toys Guanajuato 1 | 15844.02 |
| | January | Maven Toys Guadalajara 4 | 15274.69 |
| | January | Maven Toys Toluca 1 | 14510.46 |
| | January | Maven Toys Guadalajara 3 | 14452.03 |
| | January | Maven Toys Mexicali 1 | 14098.09 |
| | January | Maven Toys Saltillo 1 | 14085.41 |
| | January | Maven Toys Guadalajara 2 | 14016.07 |
| | January | Maven Toys Monterrey 2 | 13854.03 |
| | January | Maven Toys Ciudad de Mexico 3 | 13560.32 |

TOY STORE



6.Which stores have the highest and lowest sales performance?

SELECT

```
Stores.Store_Name,  
ROUND(SUM(Products.Product_Price * Sales.Units),4) AS Highest_Sale_,$,  
SUM(Sales.Units) AS Highest_Unit_Sold
```

From

```
Products Join Sales ON Products.Product_Id = Sales.Product_Id  
Join Stores ON Stores.Store_ID = Sales.Store_ID
```

Group By Store_Name

Order By Highest_Sale_\$ DESC , Highest_Unit_Sold DESC

LIMIT 1;

SELECT

```
Stores.Store_Name,  
ROUND(SUM(Products.Product_Price * Sales.Units),4) AS Lowest_Sale_,$,  
SUM(Sales.Units) AS Lowest_Unit_Sold
```

From Products Join Sales ON Products.Product_Id = Sales.Product_Id

Join Stores ON Stores.Store_ID = Sales.Store_ID

Group By Store_Name

Order By Lowest_Unit_Sold , Lowest_Sale_\$

LIMIT 1;



| | Store_Name | Highest_Sale_\$ | Highest_Unit_Sold |
|---|-------------------------------|-----------------|-------------------|
| ▶ | Maven Toys Ciudad de Mexico 2 | 188254.79 | 14521 |

| | Store_Name | Lowest_Sale_\$ | Lowest_Unit_Sold |
|---|---------------------|----------------|------------------|
| ▶ | Maven Toys Oaxaca 1 | 61795.9 | 4410 |

7. What is the profit margin for each product?

SELECT

```
Products.Product_Name,  
ROUND(((SUM(Products.Product_Price * Sales.Units) -  
SUM(Products.product_cost * Sales.Units)) /  
SUM(Products.Product_Price * Sales.Units)) * 100,4)  
AS Profit_Margin_In_Percent
```

From

```
Products
```

```
Join
```

```
Sales ON Products.Product_Id = Sales.Product_Id
```

```
Group By Products.Product_Name
```

```
Order By Profit_Margin_In_Percent DESC;
```



| | Product_Name | Profit_Margin_In_Percent |
|---|----------------------|--------------------------|
| ▶ | Jenga | 70.0701 |
| | Mini Basketball Hoop | 64.0256 |
| | Plush Pony | 55.0275 |
| | Colorbuds | 53.3689 |
| | Barrel O' Slime | 50.1253 |
| | Uno Card Game | 50.0626 |
| | Mr. Potatohead | 50.0501 |
| | Glass Marbles | 45.4959 |
| | Deck Of Cards | 42.9185 |
| | Action Figure | 37.5235 |

8. How are sales distributed across different cities?

SELECT

```
    Stores.Store_City,  
    ROUND(SUM(Products.Product_Price * Sales.Units),  
        4) AS Sales_$
```

From

```
Products
```

Join

```
Sales ON Products.Product_Id = Sales.Product_Id
```

Join

```
Stores ON Stores.Store_ID = Sales.Store_ID
```

Group By Stores.Store_City

Order By Sales_\$ DESC;

| | Store_City | Sales_\$ |
|---|------------------|-----------|
| ▶ | Cuidad de Mexico | 562423.76 |
| | Guadalajara | 451809.6 |
| | Monterrey | 429599.13 |
| | Hermosillo | 295847.6 |
| | Guanajuato | 276206.39 |
| | Puebla | 248822.56 |
| | Toluca | 198965.34 |
| | Xalapa | 197197.28 |
| | Saltillo | 197194.91 |
| | Mexicali | 197044.78 |
| | Chihuahua | 171045.39 |

9.Which products are out of stock in each store?

SELECT

Stores.Store_Name, Products.Product_Name

From

Products

Join

Inventory **ON** Products.Product_Id = Inventory.Product_Id

Join

Stores **ON** Stores.Store_ID = Inventory.Store_ID

WHERE

Stock_On_Hand = 0

Group By Stores.Store_Name , Products.Product_Name

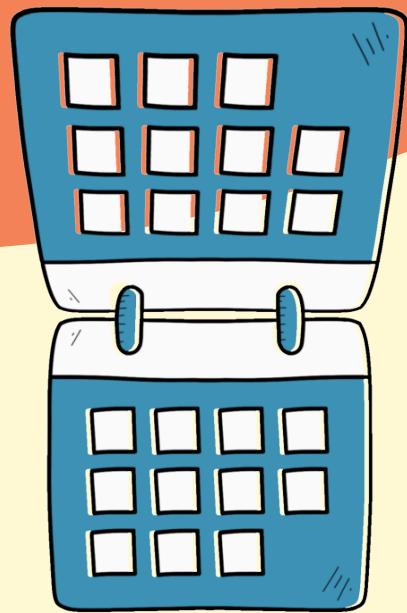
Order By Stores.Store_Name , Products.Product_Name;



| | Store_Name | Product_Name |
|---|-------------------------------|-----------------------|
| ▶ | Maven Toys Aguascalientes 1 | Foam Disk Launcher |
| | Maven Toys Aguascalientes 1 | Hot Wheels 5-Pack |
| | Maven Toys Aguascalientes 1 | Mini Ping Pong Set |
| | Maven Toys Aguascalientes 1 | Playfoam |
| | Maven Toys Chihuahua 2 | Foam Disk Launcher |
| | Maven Toys Chilpancingo 1 | Hot Wheels 5-Pack |
| | Maven Toys Ciudad de Mexico 3 | Mr. Potatohead |
| | Maven Toys Ciudad de Mexico 3 | Supersoaker Water Gun |
| | Maven Toys Ciudad de Mexico 4 | Dino Egg |
| | Maven Toys Ciudad de Mexico 4 | Playfoam |

10. How do sales vary by specific dates?

```
SELECT  
    Date,  
    ROUND(SUM(Products.Product_Price * Sales.Units),  
        4) AS Sales_$  
  
From  
    Sales  
        Join  
    Products ON Products.Product_Id = Sales.Product_Id  
  
GROUP BY Date  
  
ORDER BY Sales_$/
```



| | Date | Sales_\$ |
|---|------------|----------|
| ▶ | 2017-08-30 | 8177.15 |
| | 2017-08-15 | 10633.35 |
| | 2017-03-07 | 10910.23 |
| | 2017-08-08 | 10981.39 |
| | 2017-08-21 | 11514.29 |
| | 2017-01-16 | 11565.94 |
| | 2017-01-10 | 11709.4 |
| | 2017-01-03 | 11759.5 |
| | 2017-08-29 | 11966.37 |
| | 2017-01-26 | 12124.23 |

11.What is the average cost of products in each category?

SELECT

```
Products.Product_Category,  
ROUND(AVG(Products.Product_Cost), 4) AS Avg_Cost_Prod_$
```

From

```
Products
```

```
GROUP BY Products.Product_Category  
ORDER BY Avg_Cost_Prod_$ DESC;
```

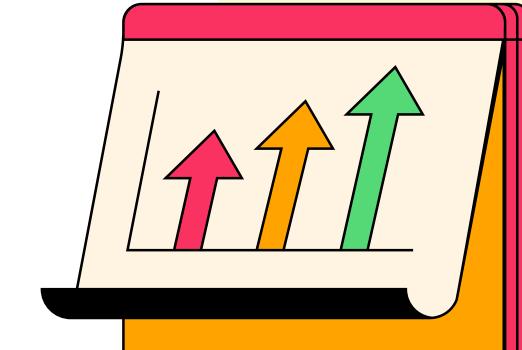


| | Product_Category | Avg_Cost_Prod_\$ |
|---|-------------------|------------------|
| ▶ | Electronics | 14.3233 |
| | Toys | 11.6567 |
| | Sports & Outdoors | 10.2757 |
| | Art & Crafts | 8.99 |
| | Games | 8.365 |

12.What is the sales growth over time for the entire company?

with a as

```
(SELECT monthname(Date) as Month_Name,  
ROUND(SUM(Products.Product_Price*Sales.Units),2) AS Monthly_Sale_,$,  
LAG(ROUND(SUM(Products.Product_Price*Sales.Units),2),1) OVER() AS Previous_Month_Sale_$  
FROM  
Products JOIN Sales ON Products.Product_Id = Sales.Product_Id  
GROUP BY Month_Name)  
  
SELECT  
a.Month_Name,  
a.Monthly_Sale_,$,  
ROUND(((a.Monthly_Sale_$ - a.Previous_Month_Sale_$) / a.Previous_Month_Sale_$) * 100,  
2) AS 'MOM_growth(%')  
  
From a;
```



| | Month_Name | Monthly_Sale_\$ | MOM_growth(%) |
|---|------------|-----------------|---------------|
| ▶ | January | 542554.91 | NULL |
| | February | 541351.65 | -0.22 |
| | March | 589485.19 | 8.89 |
| | April | 681072.98 | 15.54 |
| | May | 672369.9 | -1.28 |
| | June | 661980.22 | -1.55 |
| | July | 556034.23 | -16 |
| | August | 472626.09 | -15 |

13. How does the store open date affect sales performance?

SELECT

```
Store_Name,  
Store_Open_Date,  
ROUND(SUM(Products.Product_Price * Sales.Units),  
4) AS Sales_$,  
SUM(Sales.Units) AS Unit_Sold
```

FROM

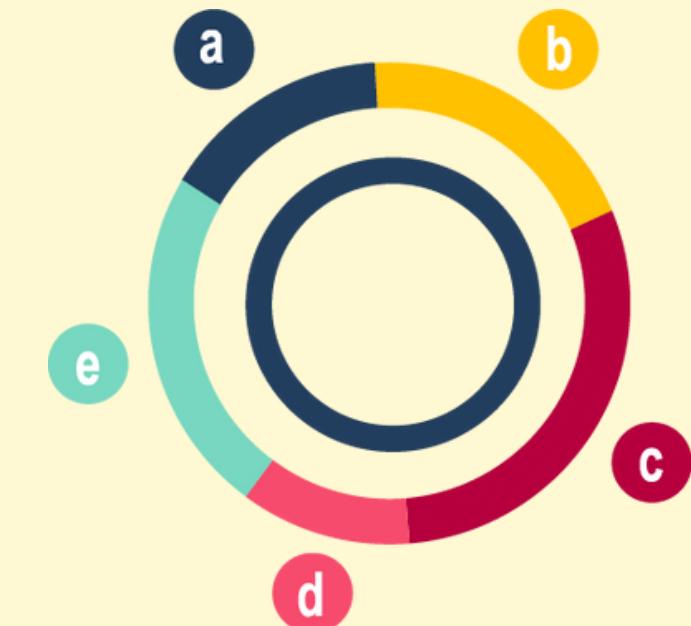
```
Products  
JOIN  
Sales ON Products.Product_Id = Sales.Product_Id  
JOIN  
Stores ON Stores.Store_ID = Sales.Store_ID  
GROUP BY Store_Name , Store_Open_Date  
ORDER BY Store_Open_Date;
```



| | Store_Name | Store_Open_Date | Sales_\$ | Unit_Sold |
|---|-------------------------------|-----------------|-----------|-----------|
| ▶ | Maven Toys Guadalajara 1 | 1992-09-18 | 78364.36 | 5764 |
| | Maven Toys Monterrey 1 | 1995-04-27 | 117294.46 | 7954 |
| | Maven Toys Guadalajara 2 | 1999-12-27 | 91455.71 | 7029 |
| | Maven Toys Saltillo 1 | 2000-01-01 | 112832.14 | 7986 |
| | Maven Toys La Paz 1 | 2001-05-31 | 64757 | 4600 |
| | Maven Toys Mexicali 1 | 2003-12-13 | 101105.17 | 7883 |
| | Maven Toys Monterrey 2 | 2003-12-25 | 115304.26 | 8374 |
| | Maven Toys Pachuca 1 | 2004-10-14 | 75142.29 | 5371 |
| | Maven Toys Ciudad de Mexico 1 | 2004-10-15 | 150860.81 | 10719 |
| | Maven Toys Campeche 1 | 2005-01-14 | 97238.09 | 7491 |
| | Maven Toys Cuernavaca 1 | 2005-04-10 | 60881.58 | 4742 |

14.What percentage of total sales does each store contribute?

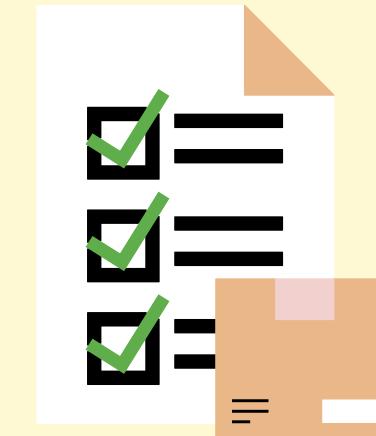
```
with a
as
(select Store_Name,
ROUND(SUM(Products.Product_Price*Sales.Units),4) as Store_Sale_$
From Products Join Sales
    on Products.Product_Id = Sales.Product_Id
Join Stores on Stores.Store_ID = Sales.Store_ID
Group By Store_Name
)
SELECT
a.Store_Name,
a.Store_Sale_$/,
ROUND(a.Store_Sale_$ * 100 / (SELECT SUM(Store_Sale_$)
FROM a),4) AS Store_Sale_Percentage
FROM a
ORDER BY Store_Sale_Percentage DESC;
```



| | Store_Name | Store_Sale_\$ | Store_Sale_Percentage |
|---|-------------------------------|---------------|-----------------------|
| ▶ | Maven Toys Ciudad de Mexico 2 | 188254.79 | 3.9906 |
| | Maven Toys Guadalajara 3 | 151058.51 | 3.2021 |
| | Maven Toys Ciudad de Mexico 1 | 150860.81 | 3.1979 |
| | Maven Toys Guadalajara 4 | 130931.02 | 2.7754 |
| | Maven Toys Toluca 1 | 124224.14 | 2.6333 |
| | Maven Toys Ciudad de Mexico 4 | 124163.75 | 2.632 |
| | Maven Toys Monterrey 1 | 117294.46 | 2.4864 |
| | Maven Toys Monterrey 4 | 115669.86 | 2.4519 |
| | Maven Toys Monterrey 2 | 115304.26 | 2.4442 |
| | Maven Toys Hermosillo 3 | 115101.09 | 2.4399 |
| | Maven Toys Saltillo 1 | 112832.14 | 2.3918 |

15. How do sales compare to current stock levels for each product?

```
SELECT  
    Product_Name,  
    Stock_On_Hand,  
    ROUND(SUM(products.Product_Price * sales.Units),  
        4) AS Sales_$  
  
FROM  
    Sales  
  
    JOIN  
        Inventory ON Sales.Product_Id = Inventory.Product_Id  
        AND Inventory.Store_ID = Sales.Store_ID  
  
    JOIN  
        Products ON Products.Product_Id = Sales.Product_Id  
  
GROUP BY Product_Name , Stock_On_Hand  
  
ORDER BY Sales_$ DESC;
```



| | Product_Name | Stock_On_Hand | Sales_\$ |
|---|---------------|---------------|----------|
| ▶ | Colorbuds | 18 | 63257.8 |
| | Colorbuds | 8 | 58940.68 |
| | Colorbuds | 65 | 56362.4 |
| | Colorbuds | 29 | 54488.65 |
| | Colorbuds | 11 | 49212.17 |
| | Lego Bricks | 21 | 48907.77 |
| | Colorbuds | 41 | 48582.59 |
| | Colorbuds | 32 | 46933.69 |
| | Lego Bricks | 9 | 46148.46 |
| | Lego Bricks | 8 | 45548.61 |
| | Action Figure | 0 | 44692.05 |

CONCLUSION

- **Top Revenue Store:** **Maven Toys Ciudad de Mexico 2** leads with the highest revenue.
- **Best-Selling Product:** **Colorbuds** is the top-selling product by units sold.
- **Key Revenue Categories:** **Toys** and **Electronics** drive the most revenue, warranting focused marketing, while underperforming categories may need adjustments.
- **Inventory Management:** Stock levels show whether stores can meet demand and avoid stockouts.
- **Sales Performance:** **Maven Toys Ciudad de Mexico 2** has the **highest sales (\$188,254.79)**, while **Maven Toys Oaxaca 1** has the **lowest sales (\$61,795.90)**.
- **Profit Margins:** **Jenga** offers the **highest profit margin**, while Dino Egg may need cost adjustments.
- **City Sales Distribution:** **Cuidad de Mexico** records the **highest sales** distribution.
- **Stock Shortages:** Addressing out-of-stock items can boost customer satisfaction and sales.
- **Sales Growth:** Positive overall sales growth indicates effective strategies, with declines signaling areas for improvement.
- **Top Sales Contributor:** **Maven Toys Ciudad de Mexico 2** contributes the **largest percentage** of total sales.



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 <https://www.github.com/fairy-the-analyst>

