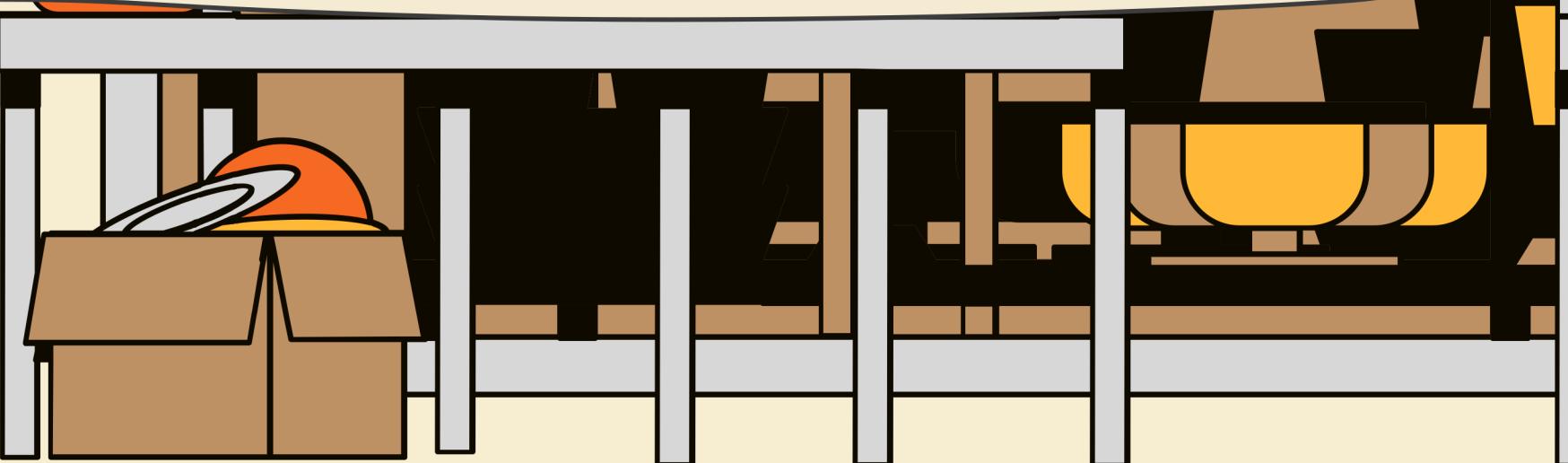


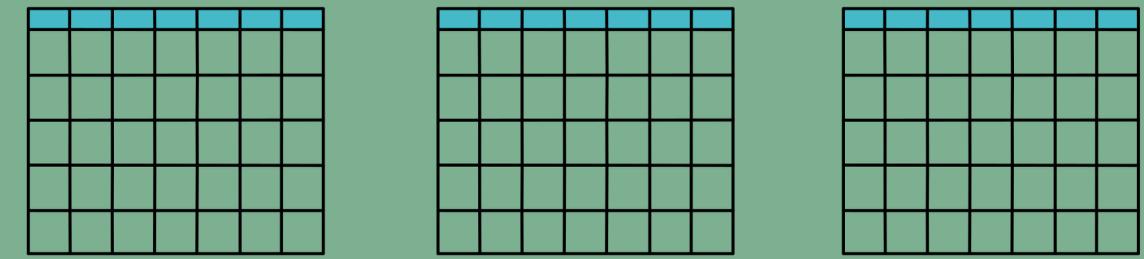
GROCERY STORE MANAGEMENT



TOPIC OUTLINE



INTRODUCTION



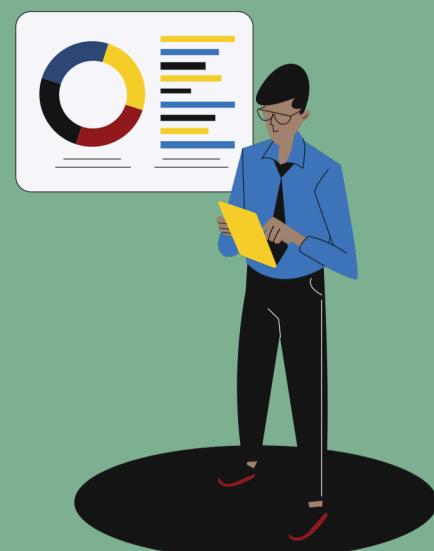
DATA BASE OVERVIEW



PROBLEM STATEMENT



QUERIES



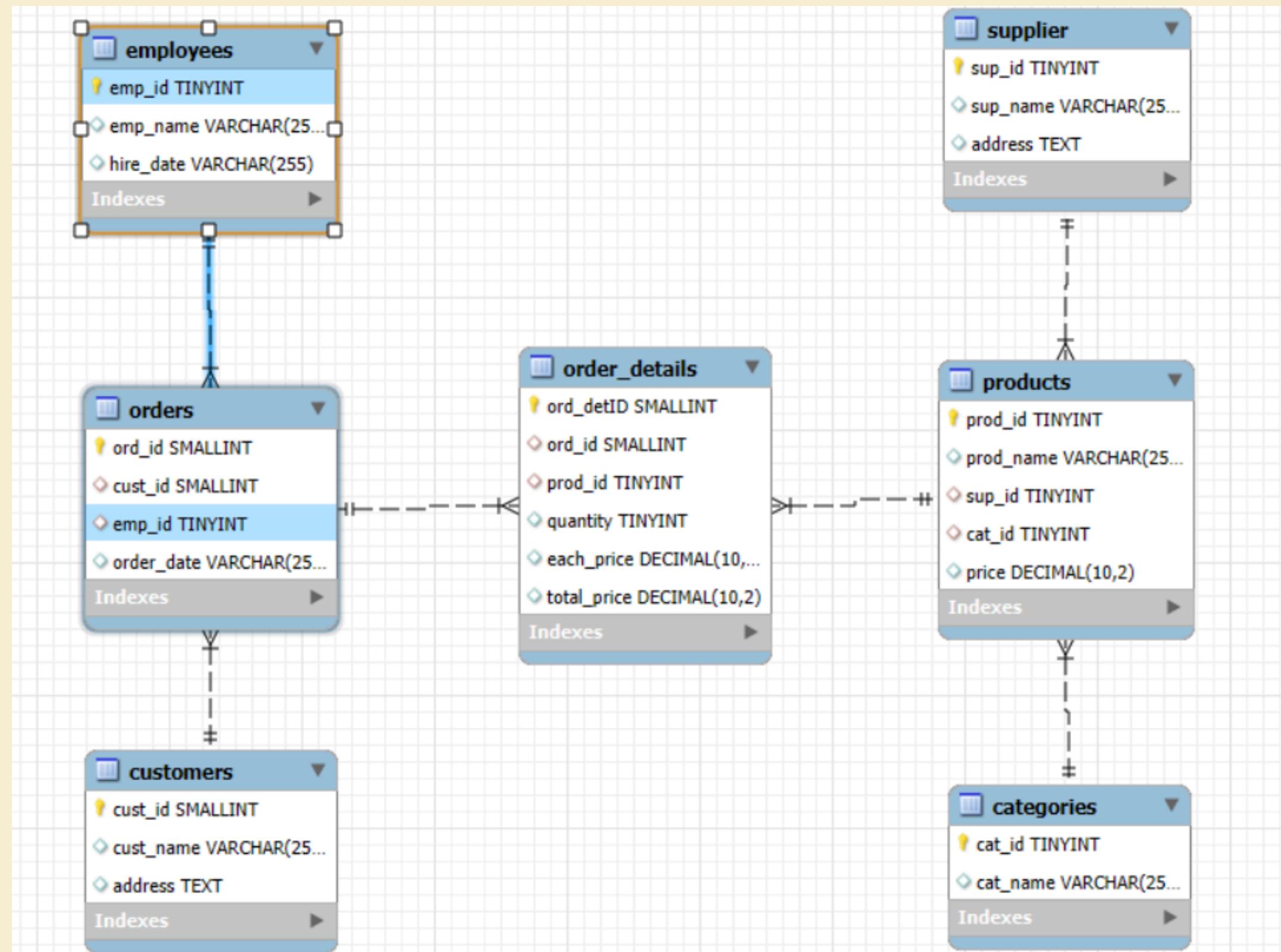
INSIGHTS

INTRODUCTION

- Retail/Grocery domain needs efficient inventory, supplier, order, and employee management.
 - Data handling helps track sales, stock, and business performance.
 - This project simulates a mini grocery store database.
 - Entities include products, orders, customers, order details, employees suppliers, and categories.
 - Students use SQL for data extraction and transformation.
- Objective: Gain insights to improve decision-making and efficiency.



DATABASE OVERVIEW



Which customers have placed the highest number of orders?

```
SELECT c.cust_name, COUNT(ord_id) AS orders_count  
FROM customers c  
JOIN orders o ON c.cust_id = o.cust_id  
GROUP BY c.cust_name  
ORDER BY orders_count DESC  
LIMIT 5;
```

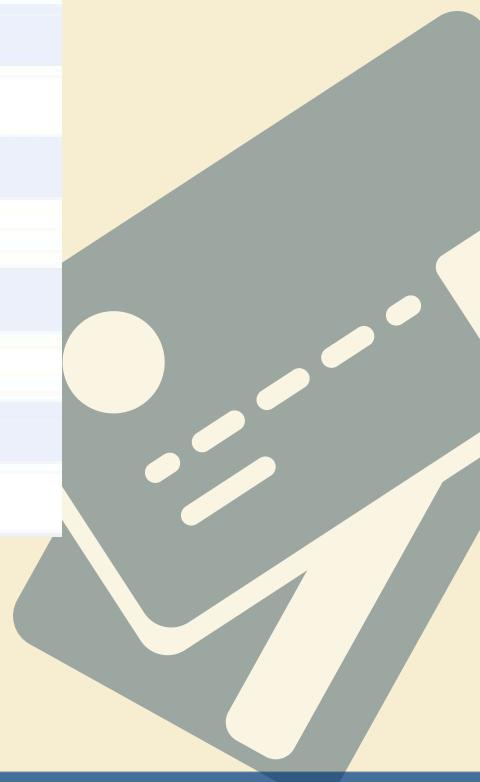


cust_name	orders_count
Chetan Naidu	10
Chetan Rao	9
Kiran Iyer	8
Hari Naidu	8
Chetan Iyer	7

What is the total and average purchase value per customer?

```
SELECT  
    c.cust_name,  
    SUM(od.total_price) AS total_purchase_value,  
    AVG(od.total_price) AS avg_purchase_value  
FROM  
    customers c  
    JOIN  
    orders o ON c.cust_id = o.cust_id  
    JOIN  
    order_details od ON o.ord_id = od.ord_id  
GROUP BY c.cust_name  
ORDER BY total_purchase_value DESC;
```

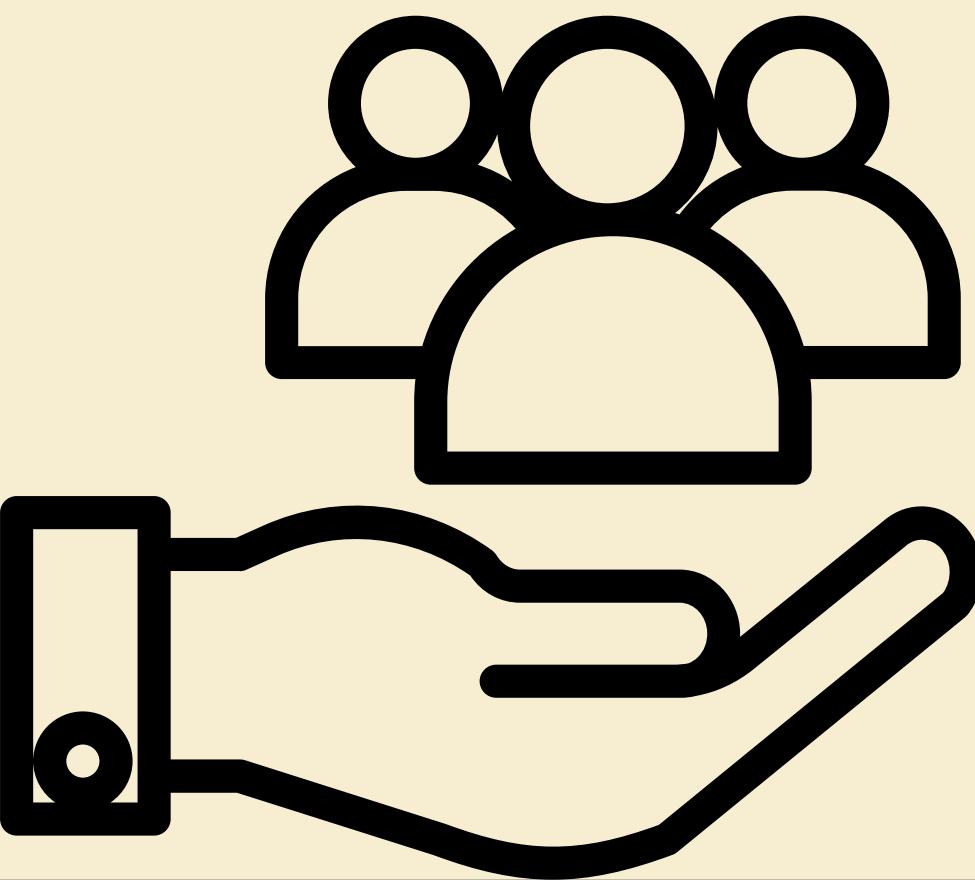
cust_name	total_purchase_value	avg_purchase_value
Chetan Naidu	19055.23	1120.895882
Gita Menon	17799.38	936.809474
Chetan Iyer	17518.60	1094.912500
Eshwar Rao	16679.82	877.885263
Hari Naidu	15468.21	814.116316
Eshwar Shetty	14743.97	982.931333
Chetan Gowda	13361.68	890.778667
Jaya Nair	13071.29	1005.483846
Chetan Rao	13044.59	767.328824
Deepa Reddy	12915.63	1076.302500
Hari Rao	12288.11	819.207333
Isha Shetty	11561.07	1156.107000
Kapila	11099.51	1109.951000
Bala Naidu	11035.39	1103.539000
Aditi Rao	10812.63	831.740769
Eshwar Menon	9614.28	874.025455
Isha Rao	9220.22	1152.527500
Eshwar Iyer	9188.45	656.317857
Preeti Malhotra	8496.65	944.072222
Amit Saxena	8266.34	1180.905714
Jyotika	8228.92	632.993846



Who are the top 5 customers by total purchase amount?



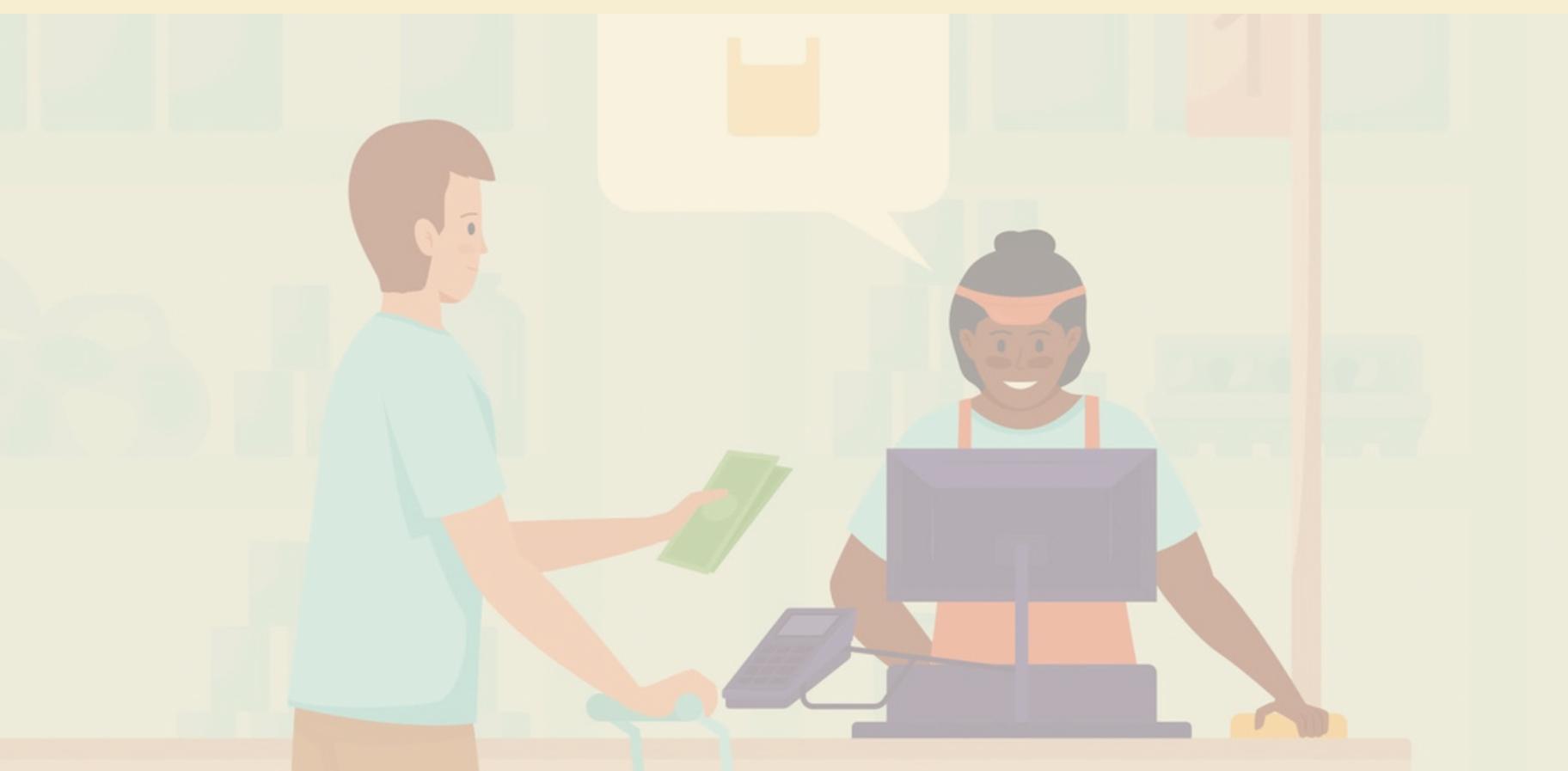
```
SELECT c.cust_name, SUM(od.total_price) AS total_purchase_amount  
FROM customers c  
JOIN orders o ON c.cust_id = o.cust_id  
JOIN order_details od ON o.ord_id = od.ord_id  
GROUP BY c.cust_name  
ORDER BY total_purchase_amount DESC  
LIMIT 5;
```



cust_name	total_purchase_amount
Chetan Naidu	19055.23
Gita Menon	17799.38
Chetan Iyer	17518.60
Eshwar Rao	16679.82
Hari Naidu	15468.21

What is the average price of products by category?

```
SELECT c.cat_name, AVG(p.price) AS avg_price  
FROM categories c  
JOIN products p ON c.cat_id = p.cat_id  
GROUP BY c.cat_name  
ORDER BY c.cat_name;
```

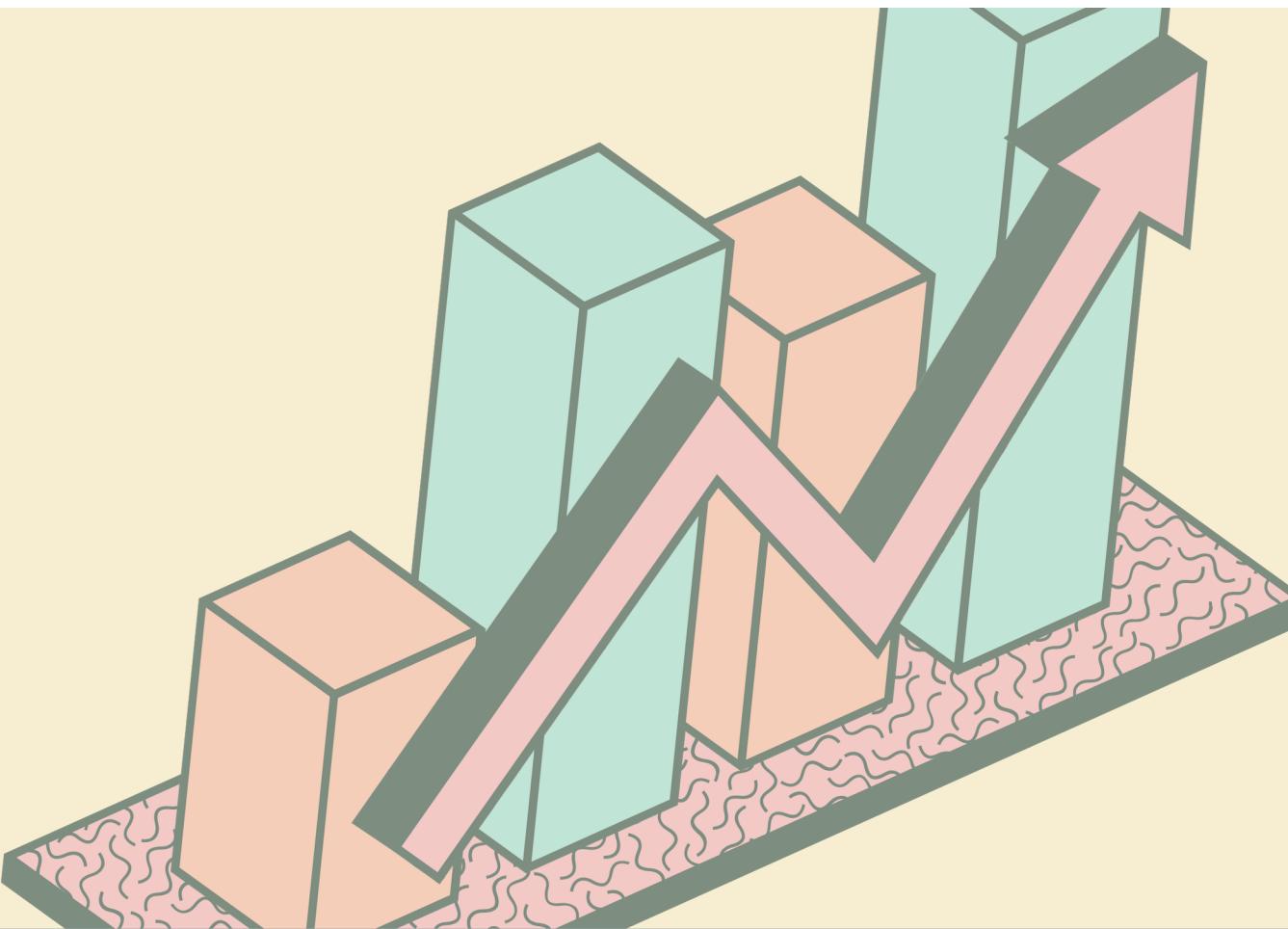


cat_name	avg_price
Beverages	242.220000
Dairy Products	344.425000
Grains & Cereals	313.876250
Personal Care	373.425000
Snacks & Confectioneries	276.627826

Which products have the highest total sales volume (by quantity)?

#Best sellers

```
SELECT prod_name, SUM(quantity) As total_quantity_sold  
FROM products p  
JOIN order_details od ON p.prod_id = od.prod_id  
GROUP BY prod_name  
ORDER BY total_quantity_sold DESC  
LIMIT 5;
```



prod_name	total_quantity_sold
Bath Soap	60
Hand Sanitizer	56
Dishwashing Soap	54
Biscuits	54
Potato Chips	54



What is the total revenue generated by each product?

```
SELECT prod_name, SUM(total_price) AS total_revenue  
FROM products p  
JOIN order_details od ON p.prod_id = od.prod_id  
GROUP BY prod_name  
ORDER BY total_revenue DESC;
```



prod_name	total_revenue
Hand Sanitizer	27787.76
Biscuits	20995.92
Moong Dal	19695.02
Toothpaste	19688.95
Mustard Seeds	19516.68
Cashews	18561.92
Butter	18548.40
Cheese Slices	18519.61
Turmeric Powder	17784.29
Soya Sauce	16985.38
Toilet Cleaner	16776.90
White Bread	16576.21
Paneer	15980.84
Detergent Powder	14848.72
Brown Bread	14538.04
Mouth wash	14537.15
Chocolate Bar	14278.18
Bath Soap	14113.00
Ghee	13161.31
Basmati Rice	11487.49
Tomato Ketchup	11283.92

How do product sales vary by category and supplier?

SELECT

```
c.cat_name AS Category,  
s.sup_name AS Supplier,  
SUM(od.quantity) AS Total_Quantity_Sold,  
SUM(od.total_price) AS Total_Revenue  
FROM  
    order_details od  
JOIN  
    products p ON od.prod_id = p.prod_id  
JOIN  
    categories c ON p.cat_id = c.cat_id  
JOIN  
    supplier s ON p.sup_id = s.sup_id  
GROUP BY  
    c.cat_name, s.sup_name  
ORDER BY  
    Total_Revenue DESC;
```

Category	Supplier	Total_Quantity_Sold	Total_Revenue
Personal Care	Aarya	205	69378.41
Snacks & Confectioneries	Suresh	238	61776.82
Snacks & Confectioneries	Aarya	203	60937.66
Snacks & Confectioneries	Karthik	193	53084.81
Grains & Cereals	Aarya	130	45712.30
Personal Care	Sai	90	42263.89
Dairy Products	Sai	89	36203.45
Dairy Products	Aarya	104	34826.43
Grains & Cereals	Suresh	101	29779.21
Snacks & Confectioneries	Aarav Sharma	82	26948.15
Personal Care	Karthik	86	22767.59
Snacks & Confectioneries	Sai	72	19592.94
Beverages	Aarya	27	10283.03
Personal Care	Suresh	28	10132.75
Grains & Cereals	Sai	38	9709.00
Beverages	Aarav Sharma	34	6104.70
Grains & Cereals	Karthik	17	6009.56
Beverages	Sai	35	5819.23

On which dates were the most orders placed?

```
SELECT order_date, dayname(STR_TO_DATE(order_date, '%m/%d/%Y')) AS day_name,  
COUNT(*) AS order_count  
FROM orders  
GROUP BY order_date  
ORDER BY order_count DESC limit 5;
```



order_date	day_name	order_count
9/10/2022	Saturday	4
3/30/2022	Wednesday	4
12/5/2022	Monday	3
1/14/2022	Friday	3
4/22/2022	Friday	3

What are the monthly trends in order volume and revenue?

SELECT

```
MONTHNAME(STR_TO_DATE(o.order_date, '%m/%d/%Y')) AS month_name,  
COUNT(DISTINCT o.ord_id) AS total_orders_per_month,  
SUM(od.total_price) AS total_revenue_per_month  
  
FROM  
orders o  
JOIN  
order_details od ON o.ord_id = od.ord_id  
GROUP BY month_name ORDER BY total_revenue_per_month DESC;
```

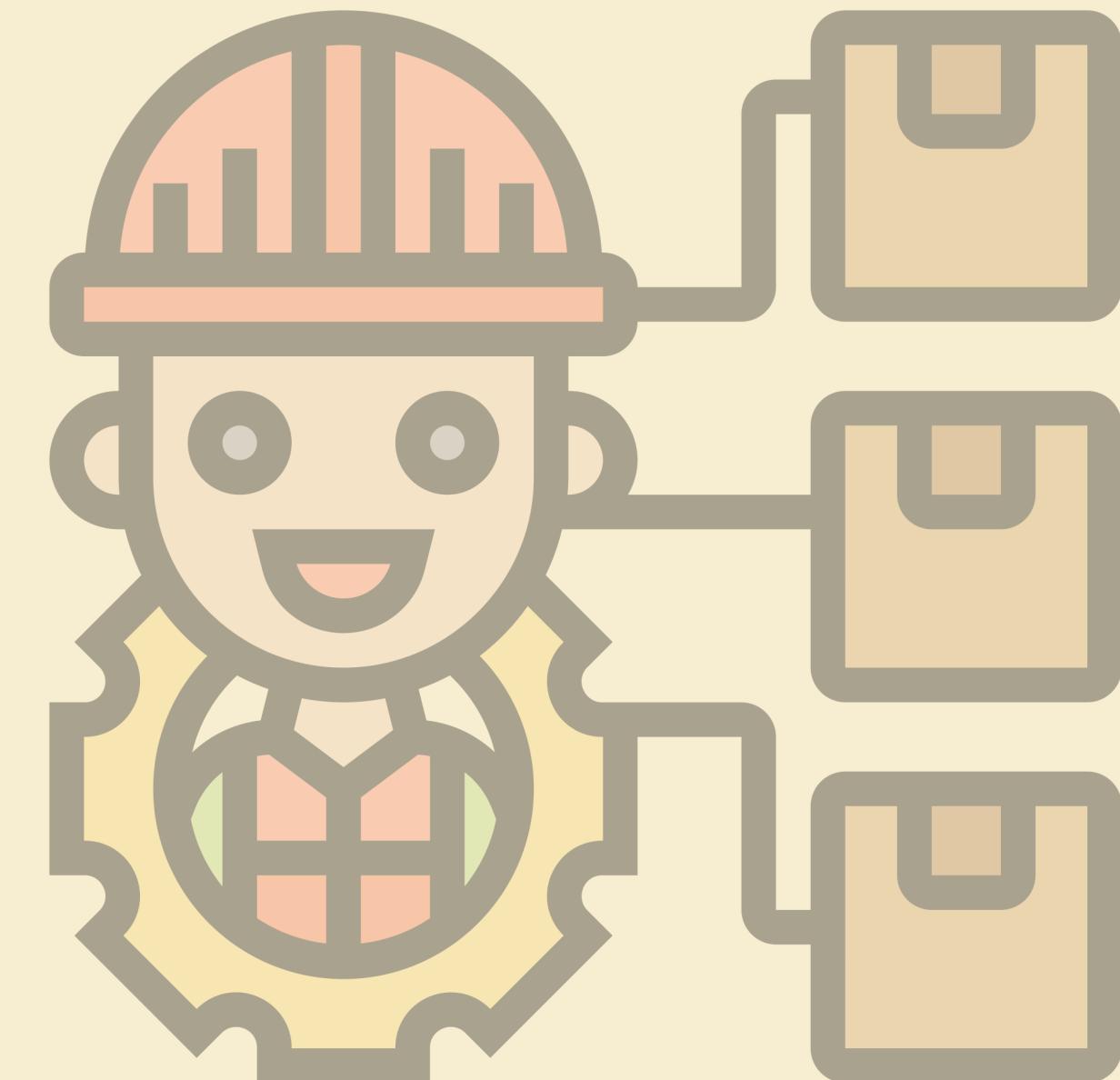


month_name	total_orders_per_month	total_revenue_per_month
January	30	70312.45
February	28	66929.42
December	32	60903.12
September	23	52626.61
July	21	48674.66
November	19	46141.33
March	27	45977.16
May	19	41305.62
August	20	36045.01
April	11	29118.54
June	14	27378.69
October	12	25917.32

Which supplier provides the most products?

```
SELECT  
    s.sup_id,  
    s.sup_name,  
    COUNT(p.prod_id) product_count_per_supplier  
FROM  
    supplier s  
        JOIN  
    products p ON s.sup_id = p.sup_id  
GROUP BY s.sup_id , s.sup_name  
ORDER BY product_count_per_supplier DESC  
LIMIT 1;
```

sup_id	sup_name	product_count_per_supplier
3	Aarya	18



Which suppliers contribute the most to total product sales (by revenue)?

```
SELECT
    s.sup_id,
    s.sup_name,
    SUM(od.total_price) AS total_sales_by_revenue
FROM
    supplier s
        JOIN
    products p ON s.sup_id = p.sup_id
        JOIN
    order_details od ON p.prod_id = od.prod_id
group by s.sup_id,
    s.sup_name order by total_sales_by_revenue desc;
```



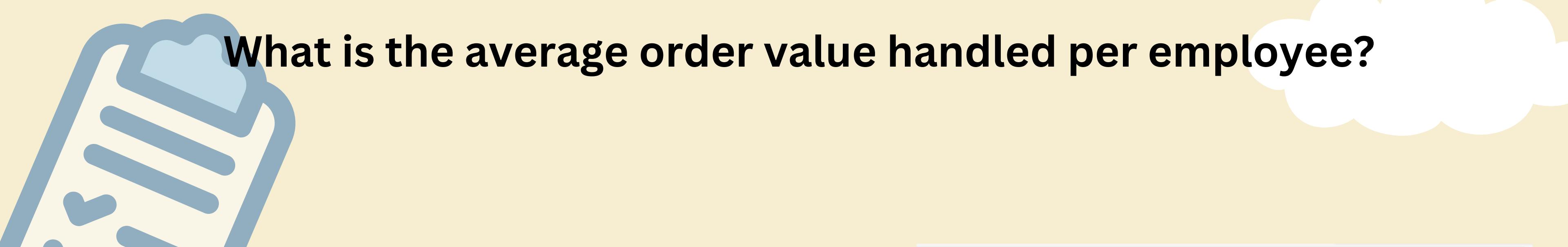
sup_id	sup_name	total_sales_by_revenue
3	Aarya	221137.83
2	Sai	113588.51
4	Suresh	101688.78
5	Karthik	81861.96
1	Aarav Sharma	33052.85

Which employees have handled the most orders?

```
SELECT  
    e.emp_id, e.emp_name, COUNT(o.ord_id) AS order_count  
FROM  
    employees e  
        JOIN  
    orders o ON e.emp_id = o.emp_id  
GROUP BY e.emp_id , e.emp_name  
ORDER BY order_count DESC  
LIMIT 5;
```



emp_id	emp_name	order_count
8	Diya Sharma	38
2	Aditya Singh	37
9	Arjun Kumar	32
3	Pari Kumar	31
5	Pari Sharma	31



What is the average order value handled per employee?

```
SELECT
    e.emp_id,
    e.emp_name,
    SUM(od.total_price) / COUNT(DISTINCT o.ord_id) AS avg_order_value
FROM
    employees e
        JOIN
    orders o ON e.emp_id = o.emp_id
        JOIN
    order_details od ON o.ord_id = od.ord_id
GROUP BY e.emp_id , e.emp_name
ORDER BY avg_order_value DESC;
```

emp_id	emp_name	avg_order_value
1	Aarav Kumar 1	2768.572632
6	Zara Verma 1	2650.472593
2	Aditya Singh 1	2330.949706
3	Pari Kumar 1	2227.279667
7	Vihaan Singh 1	2112.081739
9	Arjun Kumar 1	2077.627308
8	Diya Sharma 1	2037.631818
10	Arjun Verma 1	1835.842000
5	Pari Sharma 1	1833.373636
4	Aditya Verma 1	1554.750455

What is the relationship between quantity ordered and total price?

```
SELECT DISTINCT  
    quantity,  
    SUM(total_price) AS total_price,  
    MIN(total_price),  
    MAX(total_price)  
FROM  
    order_details  
GROUP BY quantity  
ORDER BY SUM(total_price) DESC;
```



quantity	total_price	MIN(total_price)	MAX(total_price)
5	177526.53	447.59	2497.85
4	140553.75	358.07	1998.28
3	123960.76	268.56	1498.71
2	69698.85	179.04	999.14
1	39590.04	89.87	499.57

What is the average quantity ordered per product?

```
SELECT  
    p.prod_id,  
    p.prod_name,  
    ROUND(AVG(quantity)) AS avg_quantity_ordered  
FROM  
    products p  
    JOIN  
    order_details od ON p.prod_id = od.prod_id  
GROUP BY prod_id , prod_name  
ORDER BY avg_quantity_ordered DESC;
```



prod_id	prod_name	avg_quanti
40	Butter	5
31	Toothpaste	4
42	Tomato Ketchup	4
46	Potato Chips	4
1	Basmati Rice	3
2	Wheat Flour	3
3	Moong Dal	3
48	Biscuits	3
49	Instant Noodles	3
6	Ghee	3
7	Paneer	3
9	Mango Pickle	3
11	Almonds	3
12	Cashews	3
13	Green Tea	3
14	Masala Tea	3
16	Sugar	3
17	Jaggery	3
18	Salt	3
19	Turmeric Powder	3
20	Red Chili Powder	3
21	Cumin Seeds	3

How does the unit price vary across products and orders?

SELECT

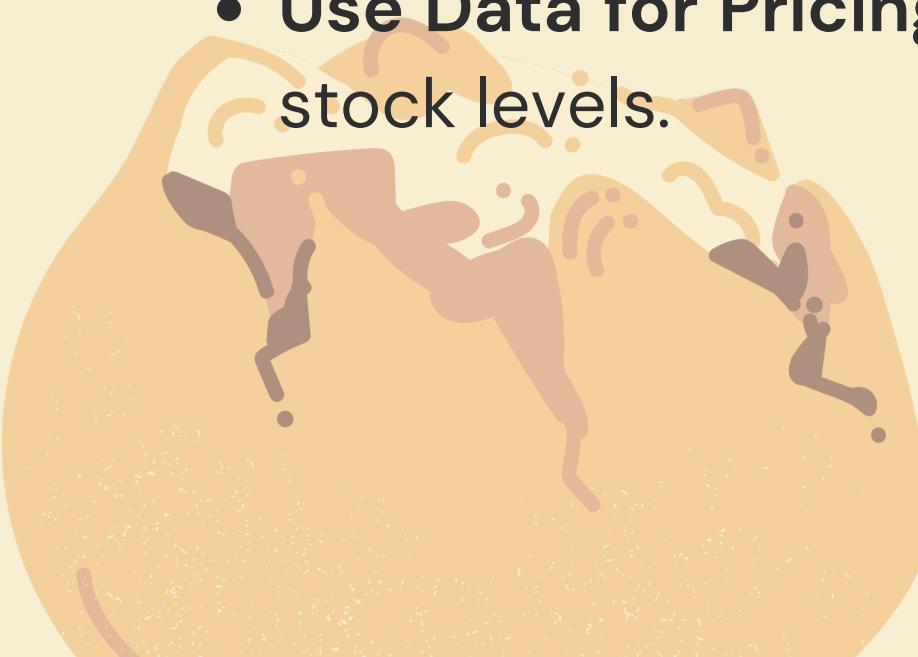
```
p.prod_name AS Product,  
od.each_price AS Unit_Price,  
COUNT(od.ord_id) AS Order_Count  
FROM products p  
JOIN order_details od ON p.prod_id = od.prod_id  
GROUP BY p.prod_name, od.each_price  
ORDER BY p.prod_name DESC;
```

Product	Unit_Price	Order_Count
Yogurt	111.61	7
White Bread	436.22	15
Wheat Flour	255.50	15
Turmeric Powder	456.01	14
Toothpaste	447.48	12
Tomato Ketchup	322.40	10
Toilet Cleaner	479.34	15
Sugar	409.62	5
Soybean Oil	172.81	11
Soya Sauce	499.57	14
Shampoo	361.88	11
Salt	219.36	8
Red Chili Powder	218.77	13
Potato Chips	169.93	15
Pasta	166.73	4
Paneer	484.27	11
Mustard Seeds	433.70	13
Mouth wash	454.29	10
Moong Dal	386.18	15
Mixed Vegetabl...	133.51	7
Mayonnaise	258.15	16
Masala Tea	380.85	10
Mango Pickle	182.50	11
Jaggery	200.85	12
Instant Noodles	89.52	11
Hand Sanitizer	496.21	19
Green Tea	166.26	11
Ghee	487.46	8



INSIGHTS AND ACTIONS

- **Reward Top Customers** – Launch loyalty programs and personalized discounts for frequent or high-value buyers.
- **Boost Best Sellers** – Stock more of high-demand items and bundle with slow movers to increase sales.
- **Optimize Supplier Deals** – Strengthen relationships with top suppliers and diversify low-performing ones.
- **Plan for Peak Sales** – Align inventory and staff with high-order dates and monthly trends.
- **Revamp Low Sellers** – Run promotions or revise pricing for underperforming products.
- **Enhance Employee Productivity** – Reward top performers and train others based on order handling data.
- **Use Data for Pricing & Bulk Offers** – Analyze quantity-price trends to offer smart discounts and set stock levels.



**thank
you!**

By :
Sai Sivaram Neelakantam
Ajit Reddy
Mohammad Afshan