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Analysis of Sales Data

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Driven Insights using Advance MySQL

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Table of content

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Problem Statement

As a data analyst at Jenson USA, the goal is to utilize data analytics to gain insights into customer behavior, staff performance, inventory management, and store operations. By analyzing data through MySQL, the aim is to identify trends, optimize processes, and make informed decisions that enhance overall business performance.

About Jenson USA

Jenson USA is a leading retailer specializing in bicycles, cycling gear, and accessories. Known for its extensive product range and commitment to customer satisfaction, Jenson USA serves a diverse clientele of cycling enthusiasts. The company leverages both its online presence and physical stores to deliver high-quality products and services. By analyzing customer interactions, sales data, and operational metrics, Jenson USA seeks to maintain its position as a top choice for cyclists.

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Let’s Uncover the insights using Advance MySQL

MySQL™

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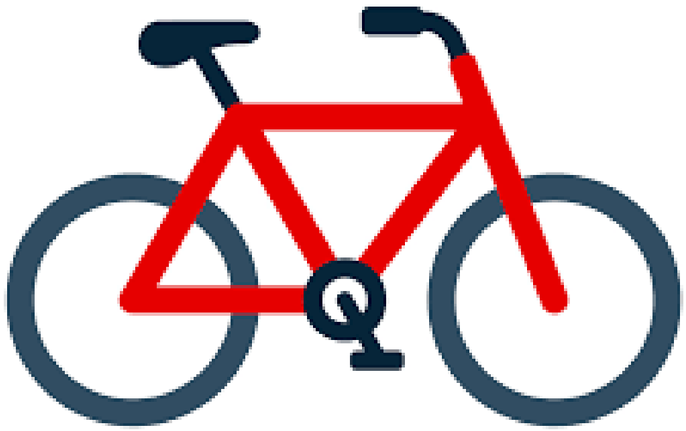
- **Find the total number of products sold by each store along with the store name**



```
SELECT
    stores.store_name,
    SUM(order_items.quantity) AS total_No_Of_product
FROM
    stores
        INNER JOIN
    orders ON stores.store_id = orders.store_id
        INNER JOIN
    order_items ON orders.order_id = order_items.order_id
GROUP BY stores.store_name;
```

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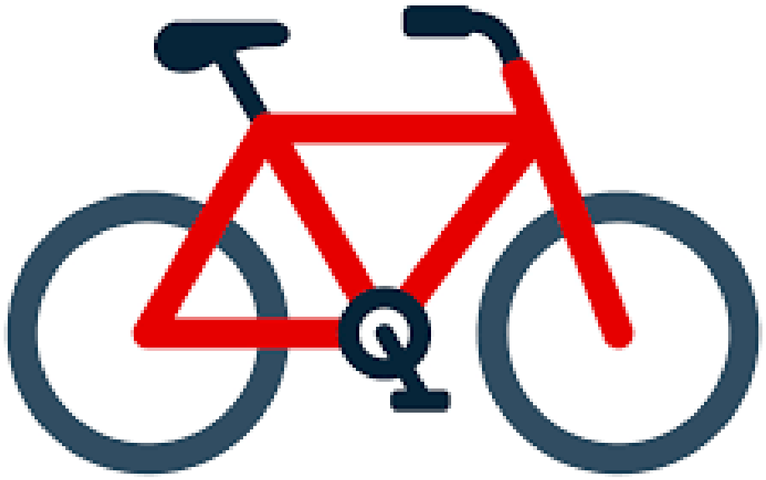
- **Calculate the cumulative sum of quantities sold for each product over time.**

```
with a as (
select order_items.product_id, orders.order_date,
 sum(order_items.quantity) quantity from orders
inner join order_items on orders.order_id=order_items.order_id
group by order_items.product_id, orders.order_date)

select product_id, order_date, sum(quantity)
over(partition by product_id order by order_date) as cumulative_sum_quantity from a;
```



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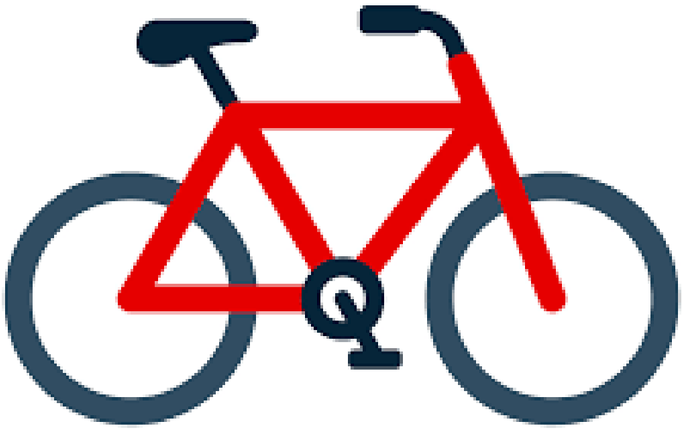
- **Find the product with the highest total sales (quantity * price) for each category.**

```
with a as (select products.product_name,categories.category_name,
sum((order_items.quantity)*(order_items.list_price-order_items.discount))
as total_sales
from products inner join order_items    on
products.product_id=order_items.product_id
inner join categories on
products.category_id=categories.category_id
group by  products.product_name,categories.category_name)
select  product_name,category_name, total_sales from
(select product_name,category_name, total_sales, rank()
over(partition by category_name order by total_sales desc) as rnk from a) b
where rnk=1;
```



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- **Find the customer who spent the most money on orders.**

```
with a as (select concat(customers.first_name,' ',customers.last_name) full_name,
sum((order_items.quantity)*(order_items.list_price-order_items.discount))
 as spent_amt from customers inner join orders
 on customers.customer_id=orders.customer_id inner join order_items
 on order_items.order_id=orders.order_id group by concat(customers.first_name,' ',customers.last_name) )
 select full_name,spent_amt from
 (select *, rank() over(order by spent_amt desc) as rnk from a) b where rnk=1;
```

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- **Find the highest-priced product for each category name.**

```
with a as
(select products.product_name,categories.category_name,products.list_price
from products inner join categories
on products.category_id=categories.category_id)
select * from
(select *,rank() over(partition by category_name order by list_price desc) as rnk from a) b
where rnk=1;
```

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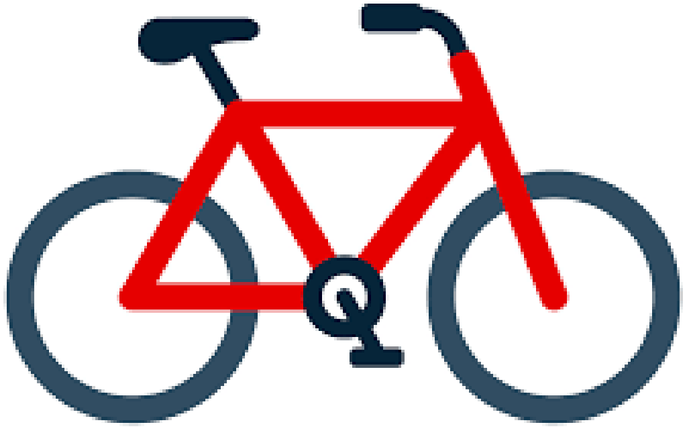
Find the total number of orders placed by each customer per store

```sql
select orders.store_id,stores.store_name, concat(customers.first_name,' ',customers.last_name)
cus_fullname, count(orders.order_id) as total_order_count from
orders inner join customers on
customers.customer_id=orders.customer_id inner join stores
on stores.store_id=orders.store_id
group by orders.store_id,stores.store_name, concat(customers.first_name,' ',customers.last_name)
```



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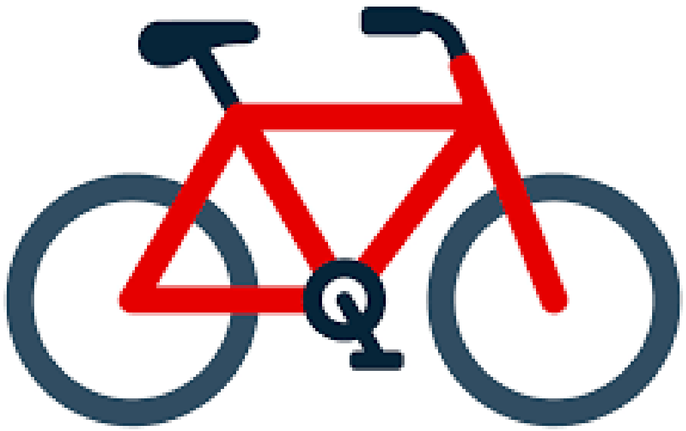
Find the names of staff members who have not made any sales

```
select staffs.store_id,concat(staffs.first_name,' ',staffs.last_name)
 as staffmember_full_name from staffs
where not exists(select orders.staff_id from orders
 where staffs.staff_id=orders.staff_id);
```



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Find the top 3 most sold products in terms of quantity.


```sql
select product_name from
(select products.product_name,sum(order_items.quantity) total_quantity,
rank() over(order by sum(order_items.quantity) desc) rnk
from products
inner join order_items on products.product_id=order_items.product_id
group by  products.product_name) a
where rnk<=3;
```

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Find the median value of the price list

```
with a as(
select list_price, row_number() over(order by list_price) rn,
 count(list_price) over() cn from order_items)
select
case when cn%2=0 then (select avg(list_price) from a
 where rn in(cn/2,(cn/2)+1))
else (select list_price from a where rn=(cn+1)/2)
end as median from a limit 1;
```

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List all products that have never been ordered.(use Exists)

```
select products.product_id, products.product_name from products
where not exists(select product_id from order_items
 where products.product_id=order_items.product_id);
```

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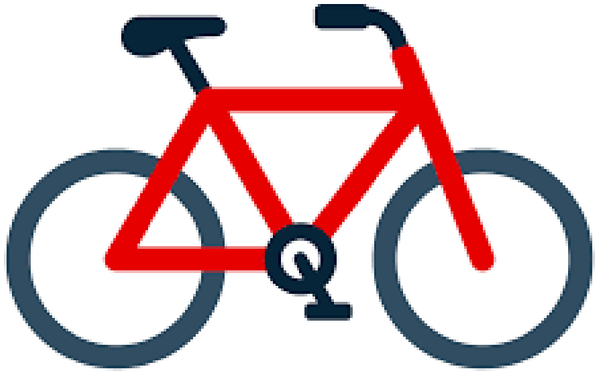
List the names of staff members who have made more sales than the average number of sales by all staff members.

```sql
select staffs.staff_id, coalesce(sum(order_items.quantity*(order_items.list_price-order_items.discount)),0) as sales
from staffs left join orders
on staffs.staff_id=orders.staff_id
left join order_items on
orders.order_id=order_items.order_id
group by staffs.staff_id
having sum(order_items.quantity*(order_items.list_price-order_items.discount))>
(select avg(sales)
from
(select staffs.staff_id, coalesce(sum(order_items.quantity*(order_items.list_price-order_items.discount)),0) as sales
from staffs left join orders
on staffs.staff_id=orders.staff_id
left join order_items on
orders.order_id=order_items.order_id
group by staffs.staff_id) as a);
```



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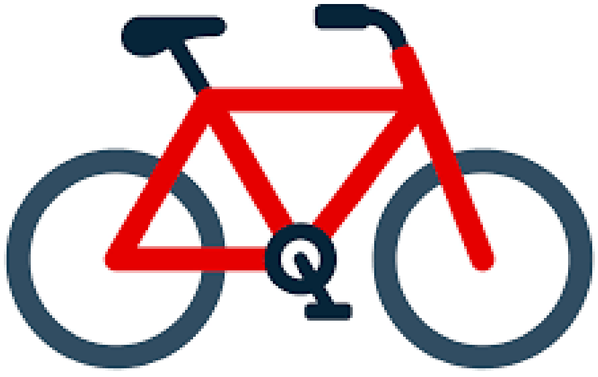
Identify the customers who have ordered all types of products (i.e., from every category).

```
select customers.customer_id from customers  join orders
on customers.customer_id=orders.customer_id join
order_items on orders.order_id=order_items.order_id
join products p on p.product_id=order_items.product_id
group by customers.customer_id
having count(distinct p.category_id)=(select count(category_id) from categories);
```



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CONCLUSION

Customer Behavior: Targeted marketing can boost sales by focusing on high-value customers and converting occasional buyers into repeat customers.

Staff Performance: Training and incentives for staff can enhance service quality and increase sales.

Inventory Management: Better inventory forecasting will reduce stockouts and excess inventory, improving cash flow.

Store Operations: Optimizing store layouts and checkout processes can enhance the shopping experience and increase revenue.

By acting on these insights, Jenson USA can improve customer satisfaction and drive business growth.

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