

```
-- Data Exploration
```

```
Use FinalProjectNTI
```

```
-- Order status: 1 = Pending; 2 = Processing; 3 = Rejected; 4 = Completed
```

```
-- Production Schema
```

```
Select * from production.brands
```

```
select * from production.categories
```

```
select * from production.products
```

```
select * from production.stocks
```

```
-- sales Schema
```

```
Select * from sales.customers
```

```
-- This is normal to have missing values in the phone column, because not everybody  
will give you their phone #
```

```
Select
```

```
    *
```

```
from sales.customers s
```

```
Where s.phone Is NULL OR s.city Is NULL OR s.customer_id Is NULL OR s.email Is NULL  
      OR s.state Is NULL OR s.zip_code Is NULL
```

```
Select * from sales.order_items
```

```
-- there are some nulls in the ShippedDate Column, Let's see what are the reasons  
for that ???
```

```
Select * from sales.orders
```

```
/*
```

```
after we checked we saw Some Reasons why there is Missing Values in the  
ShippedDate Column, Here are some scenarios:
```

```
1- The Order Date is the Same as the Required date that's why there is no  
shipping Date.
```

```
2- The Customer Could have bought the bike and took it himself from the store  
and didn't need shipping
```

```
Because All those orders with null shippingDate Values have the Store and  
the Customer in the Same State.
```

```
Note:
```

```
1- We Could Just ask the Data Provider For the reason for that.
```

```
*/
```

-- First Way

```
Select
    Count(sales.orders.order_id)
from sales.orders
Where
    order_date = required_date AND
    shipped_date IS NULL
```

```
Select
    Count(order_id)
from sales.orders
where shipped_date IS NULL
```

-- Second Way

```
Select
    so.shipped_date,
    sc.state CustomerState,
    sc.city CustomerCity,
    ss.state StoreState,
    ss.city StoreCity
from sales.orders so JOIN sales.customers sc
    ON so.customer_id = sc.customer_id
    Join sales.stores ss
    ON ss.store_id = so.store_id
Where
    shipped_date IS NULL
```

```
Select * from sales.staffs
```

```
Select * from sales.stores
```

-- 1- Most Expensive bike and Why?

-- Most Expensive bike is from TREK company in the Road bike
-- Category, now let's see why Trek bike is the most expensive

```
Select
    TOP 1 pp.product_name,
    pc.category_name,
    Max(pp.list_price) MaxPrice
From production.products pp JOIN production.categories pc
    ON pp.category_id = pc.category_id
Group By pp.product_name,pc.category_name
ORDER BY Max(pp.list_price) Desc
```

-- TREK is considered a fancy company for making bikes,

-- we see here that thier average price for a bike is relatively higher than the other companies

-- Trek bikes are considered Pricey beacause of the quality, innovation, and reliability of thier bikes and most people that priortize those things

-- Buy trek bikes, so Trek Bikes are considered a good long term investement

-- 1) Brands price comparison

Select

pb.brand_name,
AVG(pp.list_price) AVGPrice

From production.products pp Join production.brands pb
On pp.brand_id = pb.brand_id

Group By pb.brand_name

ORDER BY

AVGPrice DESC

-- 2- How many total customers does BikeStore have?

/* Order status:

1 = Pending;
2 = Processing;
3 = Rejected;
4 = Completed

*/

Select

so.order_status,
Count(distinct so.customer_id) #OfCustomers

From sales.orders so

Group By

so.order_status

select * from sales.orders

-- 3) How many stores does BikeStore have?

Select

Count(Distinct ss.store_name) AS #OfStores

from

sales.stores ss

```
-----  
-- 4) What is the total price spent per order?  
-----
```

```
select  
    so.order_id,  
    (so.list_price*so.quantity*(1-so.discount)) OrderPrice  
from sales.order_items so  
Order BY OrderPrice DESC
```

```
-----  
-- 5) What's the sales/revenue per store?  
-----
```

```
select  
    FORMAT(sum(si.list_price*si.quantity*(1-si.discount)), 'N0') Revenue  
from  
    sales.order_items si JOIN sales.orders so  
                        ON si.order_id = so.order_id  
                        JOIN sales.stores ss  
                        ON so.store_id = ss.store_id  
  
-- Group BY ss.store_name  
-- ORDER BY sum(si.list_price*si.quantity*(1-si.discount)) DESC
```

```
select  
    -- ss.store_name,  
    FORMAT(sum(si.list_price*si.quantity*(1-si.discount)), 'N0') Revenue  
from  
    sales.order_items si JOIN sales.orders so  
                        ON si.order_id = so.order_id  
                        JOIN sales.stores ss  
                        ON so.store_id = ss.store_id  
  
-- Group BY ss.store_name  
-- ORDER BY sum(si.list_price*si.quantity*(1-si.discount)) DESC
```

```
-----  
-- 6) Which category is most sold?  
-----
```

```
SELECT TOP 1  
    c.category_name,  
    SUM(oi.quantity) AS TotalSoldQuantity  
FROM
```

```
production.categories c
JOIN
production.products p ON c.category_id = p.category_id
JOIN
sales.order_items oi ON p.product_id = oi.product_id
GROUP BY
c.category_name
ORDER BY
TotalSoldQuantity DESC;
```

```
-----
-- 7) Which category rejected more orders?
-----
```

```
SELECT TOP 1
    c.category_name,
    COUNT(DISTINCT o.order_id) AS RejectedOrdersCount
FROM
    production.categories c
JOIN
    production.products p ON c.category_id = p.category_id
JOIN
    sales.order_items oi ON p.product_id = oi.product_id
JOIN
    sales.orders o ON oi.order_id = o.order_id
WHERE
    o.order_status = 3 -- Rejected orders
GROUP BY
    c.category_name
ORDER BY
    RejectedOrdersCount DESC;
```

```
-----
-- 8) Which bike is the least sold?
-----
```

```
Select
    pp.product_name,
    Count(pp.product_name) #OfBikesSold
From
    production.products pp Join sales.order_items si
                                ON pp.product_id = si.product_id
Group BY
    PP.product_name
HAVING
    Count(pp.product_name) = 1
```

-- 9) What's the full name of a customer with ID 259?

```
select
    sc.customer_id,
    CONCAT(sc.first_name, ' ', sc.last_name) FullName
from
    sales.customers sc
Where
    sc.customer_id = 259
```

-- 10) What did the customer on question 9 buy and when? What's the status of
--this order?

```
select
    sc.customer_id,
    CONCAT(sc.first_name, ' ', sc.last_name) FullName,
    pp.product_name,
    so.order_date,
    so.required_date,
    so.order_status
from
    sales.customers sc JOIN sales.orders so
                        ON sc.customer_id = so.customer_id
    JOIN sales.order_items si
                        ON so.order_id = si.order_id
    JOIN production.products pp
                        ON si.product_id = pp.product_id
Where
    sc.customer_id = 259
```

-- 11) Which staff processed the order of customer 259? And from which store?

```
Select
    CONCAT(ssta.first_name, ' ', ssta.last_name) FullStaffName,
    ssto.store_name
from
    sales.orders so JOIN sales.staffs ssta
                    ON so.staff_id = ssta.staff_id
    JOIN sales.stores ssto
                    ON ssto.store_id = so.store_id
Where
    so.customer_id = 259
```

-- 12) How many staff does BikeStore have? Who seems to be the lead Staff at

```
--      BikeStore?
-----

select * from sales.staffs

Select
    COUNT(staff_id) #OfStaff
from
    sales.staffs

-- LEAD STAFF
Select
    *
From
    sales.staffs
Where
    manager_id IS NULL

-----

-- 13) Which brand is the most liked?
-----

SELECT
    TOP 1 b.brand_name,
    SUM(oi.quantity) AS TotalQuantitySold
FROM
    sales.order_items oi
JOIN
    production.products p ON oi.product_id = p.product_id
JOIN
    production.brands b ON p.brand_id = b.brand_id
GROUP BY
    b.brand_name
ORDER BY
    TotalQuantitySold DESC

-----

-- 14) How many categories does BikeStore have, and which one is the least
--      liked?
-----

Select Count(Distinct category_name) #OfCategories from production.categories

SELECT
    TOP 1 pc.category_name,
    SUM(oi.quantity) AS TotalQuantitySold
FROM
    sales.order_items oi JOIN production.products p
                        ON oi.product_id = p.product_id
                        JOIN production.categories pc
                        ON p.category_id = pc.category_id
GROUP BY
```

```
pc.category_name
ORDER BY
    TotalQuantitySold ASC
```

```
-----
-- 15) Which store still have more products of the most liked brand?
-----
```

```
SELECT TOP 1
    s.store_name,
    SUM(st.quantity) AS TotalStockQuantity
FROM
    production.stocks st
JOIN
    production.products p ON st.product_id = p.product_id
JOIN
    production.brands b ON p.brand_id = b.brand_id
JOIN
    sales.stores s ON st.store_id = s.store_id
WHERE
    b.brand_id = (
        SELECT TOP 1
            b1.brand_id
        FROM
            production.brands b1
        JOIN
            production.products p1 ON b1.brand_id = p1.brand_id
        JOIN
            sales.order_items oi1 ON p1.product_id = oi1.product_id
        GROUP BY
            b1.brand_id
        ORDER BY
            SUM(oi1.quantity) DESC
    )
GROUP BY
    s.store_name
ORDER BY
    TotalStockQuantity DESC;
```

```
-- another way to answer this question
```

```
SELECT TOP 1
    s.store_name,
    SUM(st.quantity) AS TotalStockQuantity
FROM
    production.stocks st
JOIN
    production.products p ON st.product_id = p.product_id
```



```
JOIN
    production.brands b ON p.brand_id = b.brand_id
JOIN
    sales.stores s ON st.store_id = s.store_id
WHERE
    b.brand_name = 'Electra'
GROUP BY
    s.store_name
ORDER BY
    TotalStockQuantity DESC;
```

```
-----
-- 16) Which state is doing better in terms of sales?
-----
```

```
select
    ss.state,
    FORMAT(sum(si.list_price*si.quantity*(1-si.discount)), 'N0') TotalSales
from
    sales.order_items si JOIN sales.orders so
                        ON si.order_id = so.order_id
                        JOIN sales.stores ss
                        ON so.store_id = ss.store_id
Group BY ss.state
ORDER BY sum(si.list_price*si.quantity*(1-si.discount)) DESC
```

```
-----
-- 17) What's the discounted price of product id 259?
```

```
-----  
  
select  
    product_id,  
    discount  
from  
    sales.order_items  
where product_id = 259  
  
-----
```

```
-- 18) What's the product name, quantity, price, category, model year and brand  
--     name of product number 44?  
-----
```

```
select  
    pp.*,  
    pc.category_name  
from  
    production.products pp JOIN production.categories pc  
                                ON pp.category_id = pc.category_id  
Where  
    pp.product_id = 44  
  
-----
```

```
--19) What's the zip code of CA?  
-----
```

```
select  
    state,  
    zip_code  
from  
    sales.stores  
where  
    State = 'CA'
```

```
-----  
-- 20) How many states does BikeStore operate in?  
-----
```

```
select  
    COUNT(state) #ofStates  
from  
    sales.stores
```

```
-----  
-- 21) How many bikes under the children category were sold in the last 8  
--     months?  
-----
```

```
SELECT
    SUM(oi.quantity) AS TotalChildrenBikesSold
FROM
    production.categories c
JOIN
    production.products p ON c.category_id = p.category_id
JOIN
    sales.order_items oi ON p.product_id = oi.product_id
JOIN
    sales.orders o ON oi.order_id = o.order_id
WHERE
    c.category_name = 'Children Bicycles'
    AND DATEDIFF(MONTH, o.order_date, GETDATE()) <= 8 -- Last 8 months
    AND o.order_status = 4; -- Completed orders
```

```
-----
-- 22) What's the shipped date for the order from customer 523
-----
```

```
SELECT order_id, shipped_date
FROM sales.orders
WHERE customer_id = 523;
```

```
-----
-- 23) How many orders are still pending?
-----
```

```
SELECT COUNT(*) AS PendingOrders
FROM sales.orders
WHERE order_status = 1;
```

```
-----
-- 24) What's the names of category and brand does "Electra white water 3i -
--      2018" fall under?
-----
```

```
SELECT
    c.category_name,
    b.brand_name
FROM
    production.products p
JOIN
    production.categories c ON p.category_id = c.category_id
JOIN
    production.brands b ON p.brand_id = b.brand_id
WHERE
    p.product_name = 'Electra white water 3i - 2018';
```