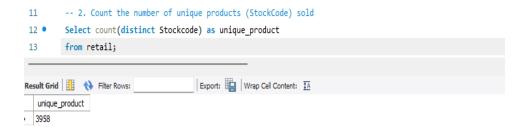
#### SQL PROJECT

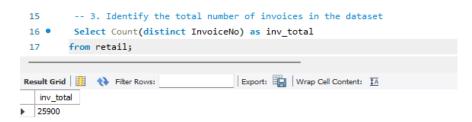
## **Basic Analysis**

1. Find the total revenue (sum of Quantity \* Unit Price) generated from all invoices.

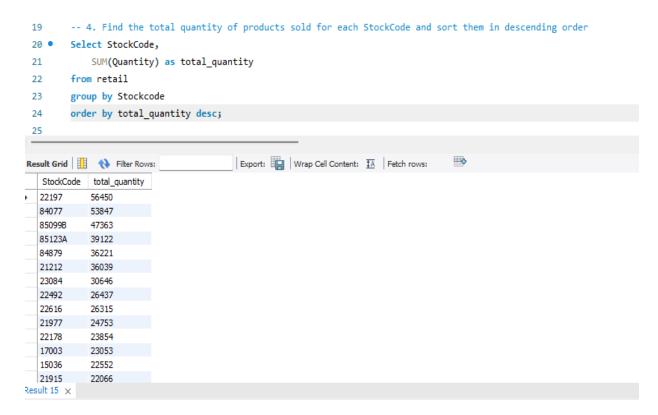
2. Count the number of unique products (Stock Code) sold.



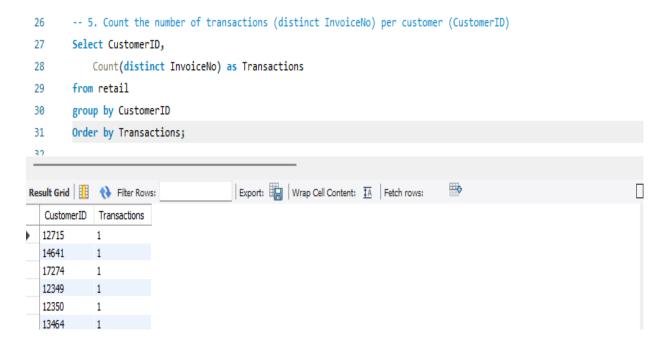
3. Identify the total number of invoices in the dataset



4. Find the total quantity of products sold for each Stock Code and sort them in descending order.



5. Count the number of transactions (distinct Invoice No) per customer (Customer ID)

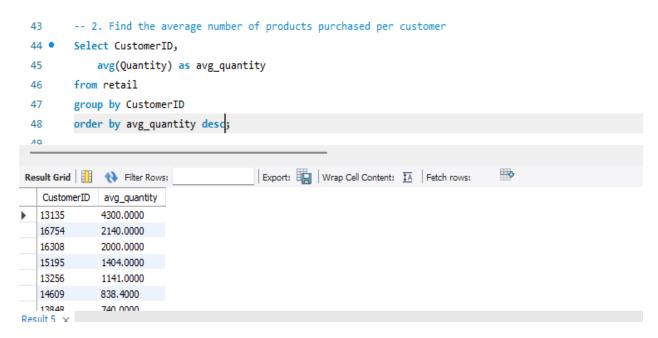


# **Customer Analysis**

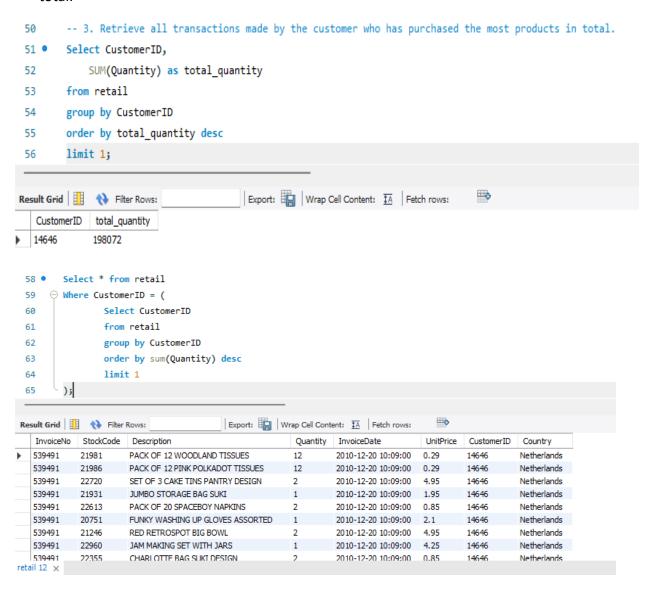
1. Identify the top 5 customers who have generated the highest revenue

```
/* Customer Analysis */
 33
 34
        -- 1. Identify the top 5 customers who have generated the highest revenue
        SELECT CustomerID,
 36 •
            SUM(Quantity * UnitPrice) as total_revenue
 37
 38
        from retail
        group by CustomerID
        Order by total_revenue desc
 40
 41
        limit 5;
Export: Wrap Cell Content: 🔼 Fetch rows:
   CustomerID total_revenue
             282038.7394294441
  18102
             272390.59846553206
  17450
             187523.77097034454
            147375.14925409108
  14911
  14156
             126339.51951554418
```

2. Find the average number of products purchased per customer.



3. Retrieve all transactions made by the customer who has purchased the most products in total.



4. Identify the country with the highest number of unique customers.

```
67
         -- 4. Identify the country with the highest number of unique customers.
 68 •
         Select Country,
                  Count(distinct CustomerID) as unique_customer
 69
 70
         from retail
         group by Country
 72
         order by unique_customer desc
 73
         Limit 1;
Result Grid
                                           Export: Wrap Cell Content: A Fetch rows:
             Filter Rows:
   Country
                 unique_customer

    United Kingdom

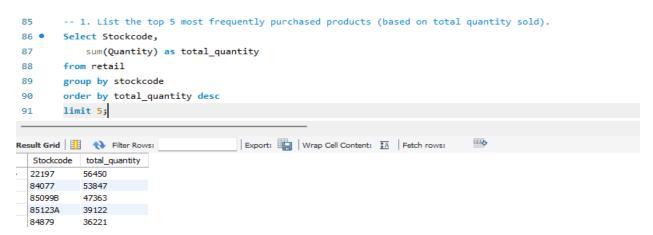
                4084
```

5. Find the customer who made the maximum number of transactions

```
-- 5. Find the customer who made the maximum number of transactions
 76 •
        Select CustomerID,
 77
             Count(distinct InvoiceNo) as Transactions
        from retail
 78
        group by CustomerID
 79
        order by Transactions desc
 80
 81
        limit 1;
                                          Export: Wrap Cell Content: TA Fetch rows:
             Filter Rows:
Result Grid
   CustomerID
             Transactions
 14911
             279
```

## **Product-Based Analysis**

1. List the top 5 most frequently purchased products (based on total quantity sold).



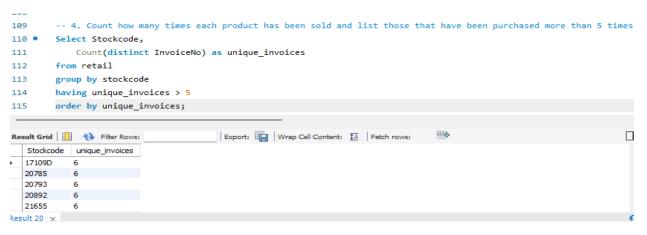
2. Find the product that generated the highest revenue

```
93
         -- 2. Find the product that generated the highest revenue
        Select stockcode,
            sum(Quantity * UnitPrice) as total_revenue
 95
        from retail
        group by stockcode
 97
        order by total_revenue desc
 99
        limit 1;
Export: Wrap Cell Content: TA Fetch rows:
   stockcode total_revenue
▶ DOT
            206245,48028597236
```

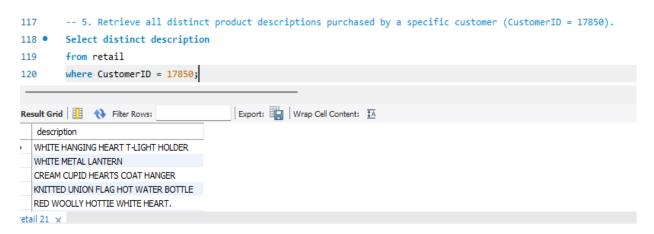
Identify products that have been sold in exactly 10 or more different invoices.

```
-- 3. Identify products that have been sold in exactly 10 or more different invoices.
102 •
        Select stockcode,
103
            Count(distinct InvoiceNo) as unique_invoices
104
        from retail
105
        group by stockcode
106
        Having unique_invoices >= 10
        order by unique invoices;
                                         Export: Wrap Cell Content: TA Fetch rows:
Result Grid 🔠 💎 Filter Rows:
  stockcode unique_invoices
  16162M 10
  17012E
            10
  17090A 10
  20778
```

4. Count how many times each product has been sold and list those that have been purchased more than 5 times



5. Retrieve all distinct product descriptions purchased by a specific customer (Customer ID = 17850).



## Time-Based Analysis

1. Find the total revenue generated per month.

```
-- Time-Based Analysis
123
124
         -- 1. Find the total revenue generated per month
        Select
             Year(InvoiceDate) as invoice_year,
126
            Month(InvoiceDate) as invoice_month,
127
            sum(Quantity * UnitPrice) as total_revenue
128
129
         from retail
130
         group by invoice_year, invoice_month;
Export: Wrap Cell Content: TA
   invoice_year invoice_month total_revenue
  2010
              12
                          748957.0380319059
   2011
             1
                        560000.2885112464
   2011
                           498062.648327291
             3
   2011
                          683267.0775260255
   2011
                           493207.1188206653
Result 24 ×
```

2. Identify the hour of the day when the highest number of transactions occurred.

```
132
        -- 2. Identify the hour of the day when the highest number of transactions occurred.
133 •
        Select
           hour(InvoiceDate) as invoice_hour,
134
           Count(Distinct InvoiceNO) as transactions
       from retail
136
        group by invoice_hour
       order by transactions desc
       limit 1;
139
                                                                              4
                                      Export: Wrap Cell Content: 🚻 Fetch rows:
invoice hour
             transactions
```

3. Count the number of invoices generated per day

```
141
         -- 3. Count the number of invoices generated per day
142 •
        Select
            Date(InvoiceDate) as invoice_date,
            Count(distinct InvoiceNo) as num_invoices
144
145
        from retail
146
         group by invoice_date;
Export: Wrap Cell Content: IA
             num_invoices
   invoice_date
   2010-12-01
  2010-12-02 167
  2010-12-03
             108
  2010-12-05 95
  2010-12-06
             133
Result 30 ×
```

4. Identify the date when the highest number of products were sold.

```
-- 4. Identify the date when the highest number of products were sold.
148
         Select
149 •
             Date(InvoiceDate) as invoice_date,
150
             sum(quantity) as total_qty
151
         from retail
152
         group by invoice date
153
         order by total qty desc
154
         limit 1;
155
156
                                           Export: Wrap Cell Content: TA Fetch rows:
Result Grid
              Filter Rows:
   invoice_date
               total_qty
  2011-10-05
              46161
```

5. Find the number of transactions that happened before 12 PM vs. after 12 PM

