We use default.retail - data on transactions of the British online store in the period from December 1, 2010 to December 9, 2011, with the following columns:

- `InvoiceNo` – transaction number
- `StockCode` – product Code
- `Description` – product description
- `Quantity` – number of units in the order
- `InvoiceDate` – transaction date
- `UnitPrice` – price per unit
- `CustomerID` – user id
- `Country` – country where the user lives

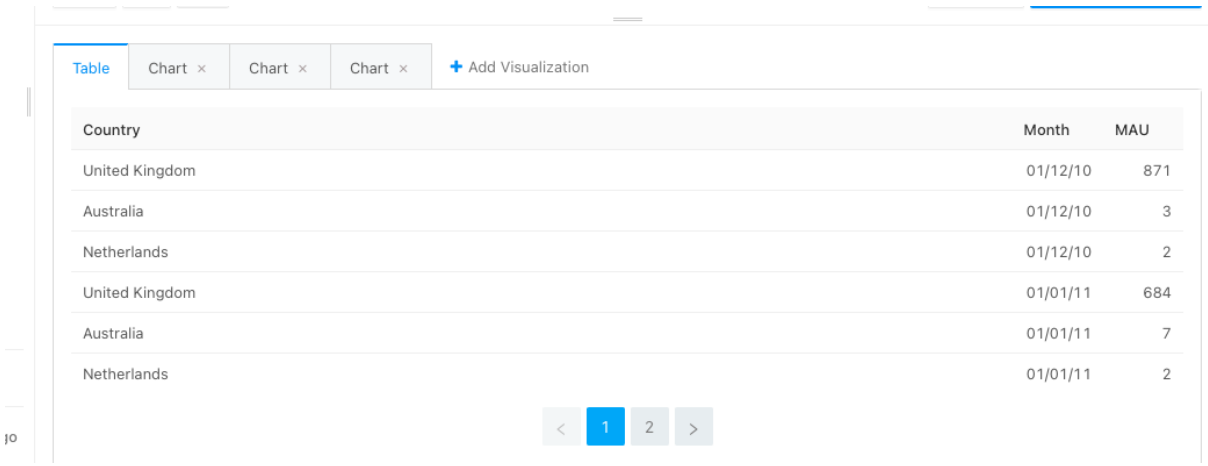
Let's find the countries with the highest number of unique users.

```
SELECT
COUNT(DISTINCT CustomerID ) AS UNIQUE_USERS,
Country
FROM
default.retail
GROUP BY Country
ORDER BY UNIQUE_USERS DESC
```

Let's look at the dynamics of changes in the number of active users per month in the UK, Australia and the Netherlands. The resulting table you get should look like: country - the number of unique users for a particular month

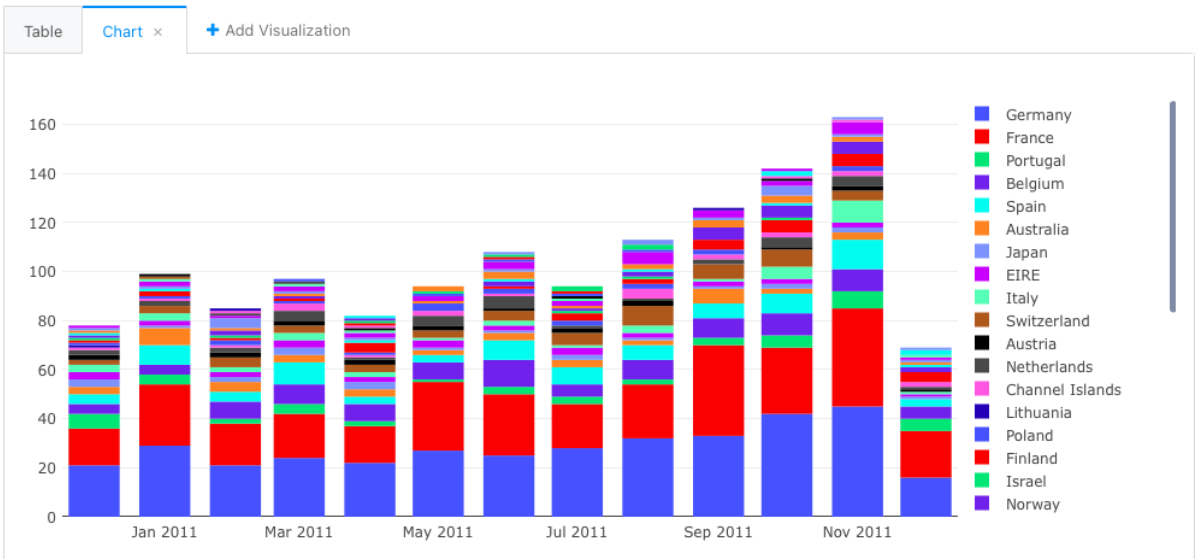
MAU (monthly active users) – number of unique users per month. Active users are those who made at least one order for the selected period of time (month)

```
SELECT
Country,
toStartOfMonth(InvoiceDate) AS Month,
COUNT(DISTINCT CustomerID) AS MAU
FROM
default.retail
WHERE Country  IN ('United Kingdom', 'Netherlands', 'Australia')
GROUP BY Country, Month
ORDER BY Month, MAU DESC
```

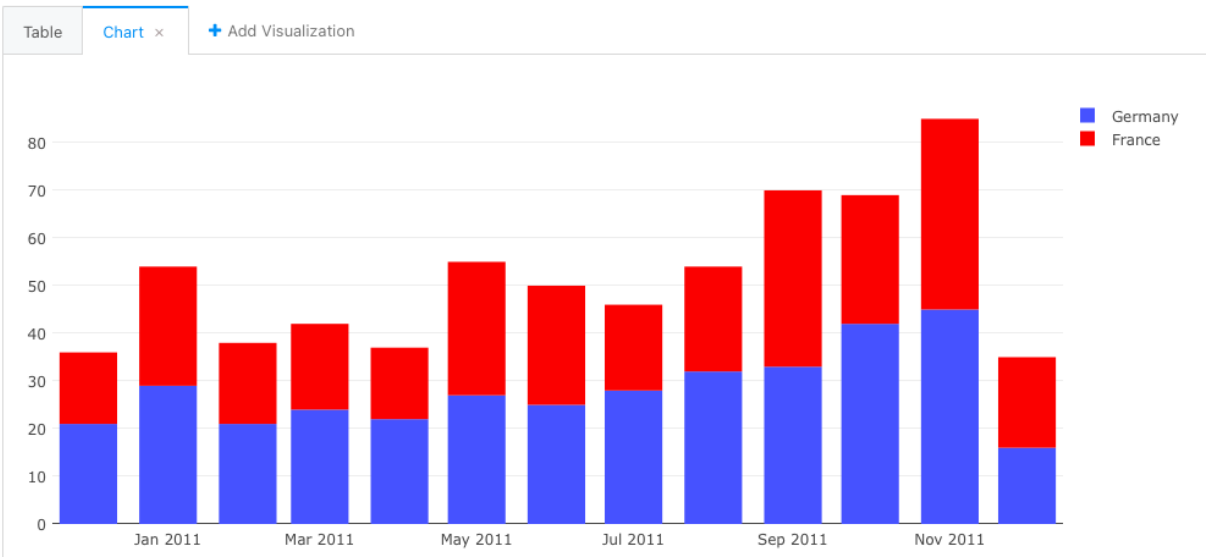


Let's look at the dynamics of changes in the number of active users per month for all countries except the UK.

```
SELECT
Country,
toStartOfMonth(InvoiceDate) AS Month,
COUNT(DISTINCT CustomerID) AS QTY
FROM
default.retail
WHERE Country  != 'United Kingdom'
GROUP BY Country, Month
ORDER BY Month, QTY DESC
```



In what months did France have more active users than Germany?
-Dec 2011, May 2011, Sept 2011



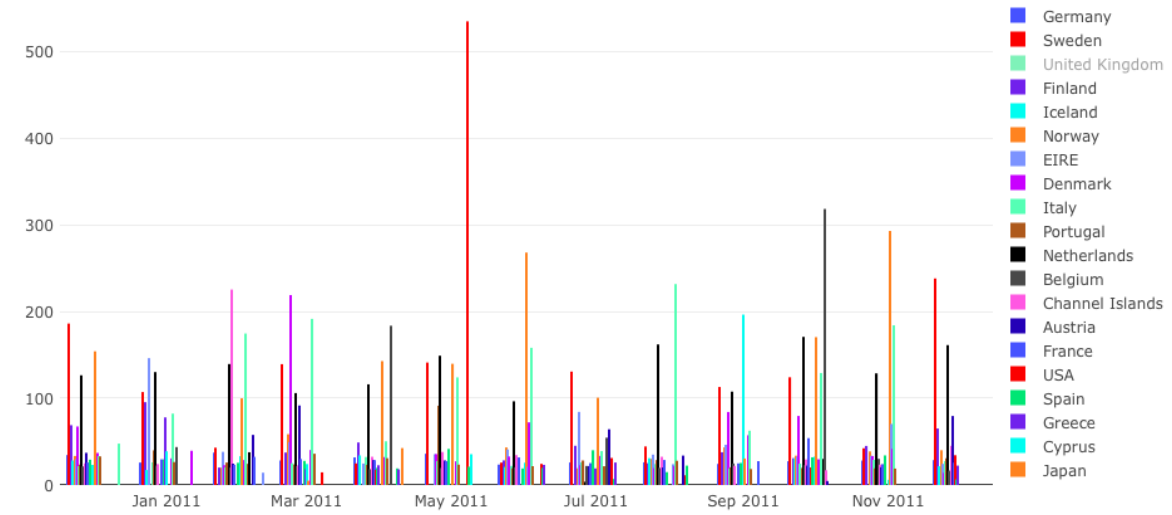
Now let's analyze the orders themselves. Calculate the average order value (AOV - average order value) in each country.

```
SELECT
Country,
Month,
AVG(ORDER) AS TTL
FROM
    (
    SELECT
    Country,
    toStartOfMonth(InvoiceDate) AS Month,
    Quantity,
    UnitPrice,
    InvoiceNo,
    (Quantity * UnitPrice) AS ORDER
    FROM
    default.retail
    WHERE Quantity > 0
    GROUP BY Country, Month, InvoiceNo, Quantity, UnitPrice
    ORDER BY Month DESC
    )
GROUP BY Country, Month
ORDER BY Month DESC
```

Country	Month	TTL
Germany	01/12/11	28.66
Sweden	01/12/11	238.00
United Kingdom	01/12/11	41.54
Finland	01/12/11	65.12
Iceland	01/12/11	21.64
Norway	01/12/11	40.09

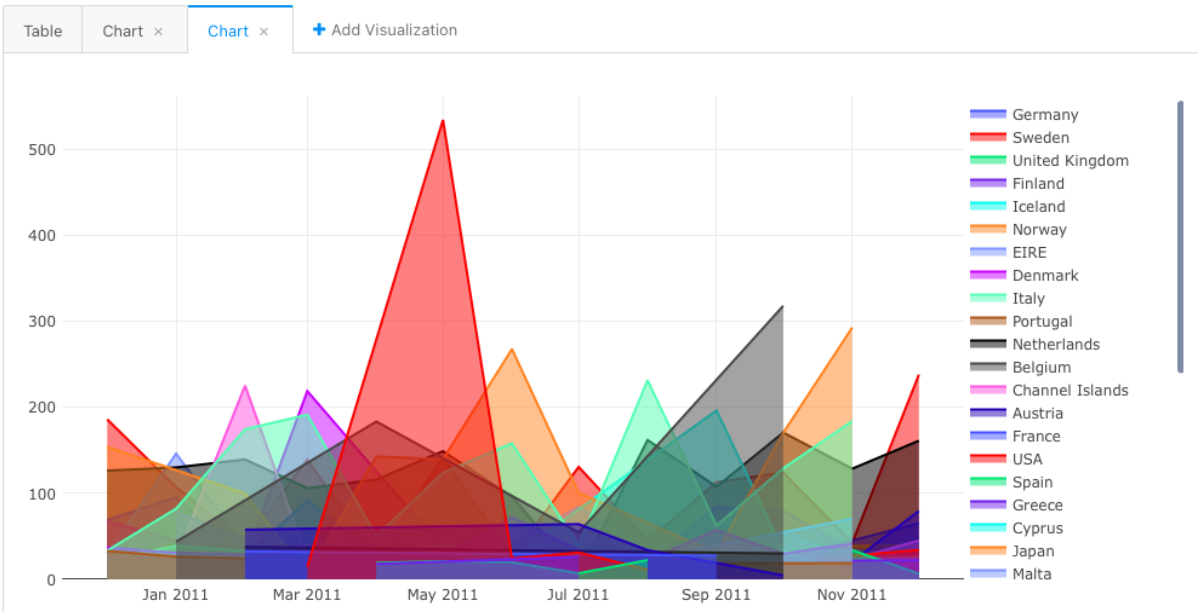
< 1 2 3 4 5 ··· 12 >

Table | Chart × | Chart × | + Add Visualization



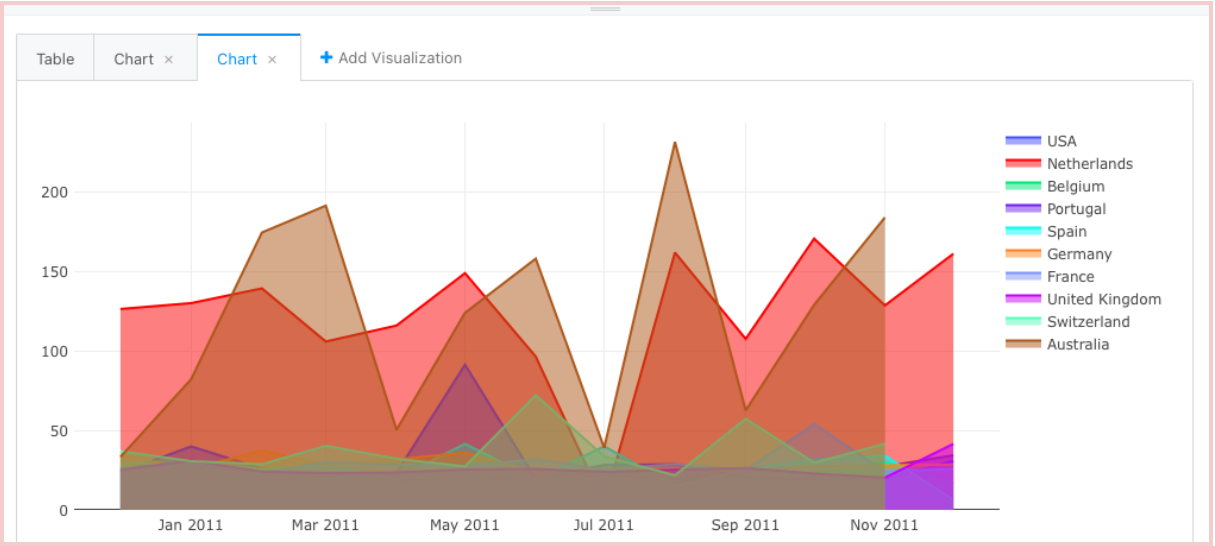
How did the average order amount change in different countries by month?

Table | Chart × | Chart × | + Add Visualization



Let's visualize dynamics for the United Kingdom, Germany, France, Spain, Netherlands, Belgium, Switzerland, Portugal, Australia, USA.

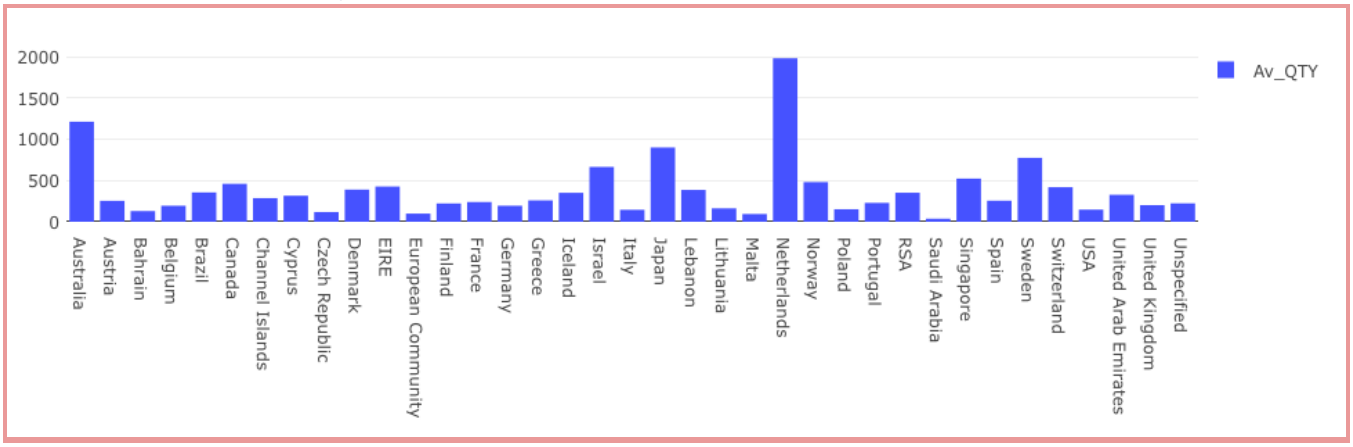
```
SELECT
Country,
Month,
AVG(ORDER) AS TTL
FROM
    (
   SELECT
    Country,
    toStartOfMonth(InvoiceDate) AS Month,
    Quantity,
    UnitPrice,
    InvoiceNo,
    (Quantity * UnitPrice) AS ORDER
    FROM
    default.retail
    WHERE Quantity > 0
    GROUP BY Country, Month, InvoiceNo, Quantity, UnitPrice
    ORDER BY Month DESC
    )
WHERE Country IN ('United Kingdom', 'Germany', 'France', 'Spain', 'Netherlands',
'Belgium', 'Switzerland', 'Portugal', 'Australia', 'USA')
GROUP BY Country, Month
ORDER BY Month DESC
```



How many items do users typically add to their shopping cart?

```
SELECT
Country,
AVG(QTY) AS Av_QTY
FROM
    (
    SELECT
    Country,
```

```
    SUM(Quantity) AS QTY,
    InvoiceNo
    FROM
    default.retail
    GROUP BY InvoiceNo, Country
    Order BY QTY DESC
    )
GROUP BY Country
```



The result in the previous step seemed strange to you, especially if you correlate the average basket size with the number of unique users in some countries.

Let's look at the Netherlands (Netherlands) in more detail.

```
SELECT
CustomerID,
SUM(Quantity) AS Quantity
FROM
default.retail
WHERE Country = 'Netherlands'
GROUP BY CustomerID
ORDER BY Quantity DESC
```

Table | Chart × | Chart × | Chart × | + Add Visualization

CustomerID	Quantity
14,646	196,719
12,759	902
12,775	853
12,778	824
12,802	302
12,787	261
12,790	166

One user added almost 200,000 items to their shopping cart.

Lets’ study what exactly he buys.

```
SELECT
CustomerID,
Description,
Quantity,
(Quantity * UnitPrice) AS TTL
FROM
default.retail
WHERE Country = 'Netherlands' AND CustomerID = '14646'
GROUP BY CustomerID, Description, Quantity, TTL
ORDER BY Quantity DESC
```