How do I rank data in a report (Top 10 or Bottom 10)?

Suppose you only want to see the Top 10 products by revenue in your report, rather than seeing all products:

Product	Revenue
TrailChef Single Flame	$10,788,609.90
TrailChef Double Flame	$8,575,193.16
Firefly 4	$1,952,793.38
EverGlow Kerosene	$2,510,354.54
Glacier Deluxe	$3,843,791.24
Sun Shelter 15	$1,381,185.37
TrailChef Water Bag	$5,751,298.44
Firefly Extreme	$2,183,741.93
EverGlow Butane	$1,914,403.55
Mountain Man Analog	$11,155,662.21
Polar Sun	$53,129,289.68
Firefly Multi-light	$1,731,534.57
Husky Rope 100	$10,148,379.56
Husky Rope 200	$7,928,115.58
Granite Ice	$5,689,464.00
Granite Hammer	$3,891,745.64
Hailstorm Steel Irons	$12,655,931.79
Lady Hailstorm Titanium Woods Set	$16,463,899.47
Course Pro Umbrella	$2,584,972.12
Star Peg	$1,039,402.64

This document will demonstrate how to use the Rank function to return only the Top 10 items in a query:

| Product	Revenue	Rank
Cat Eye	$162,428,312.25	1
Capri	$55,975,219.60	2
Polar Sun	$53,129,289.68	3
Polar Sports	$48,535,984.63	4
Star Lite	$46,786,207.11	5
Star Gazer 2	$40,897,230.65	6
Bella	$36,079,380.00	7
Hailstorm Titanium Woods Set	$26,832,007.61	8
Canyon Mule Journey Backpack	$24,616,545.41	9
Star Dome	$23,672,845.61	10

Notes:

1. Some Rank numbers are skipped when a tie between rows occurs.
2. The following screen captures are from IBM Cognos Analytics 11.1.6.
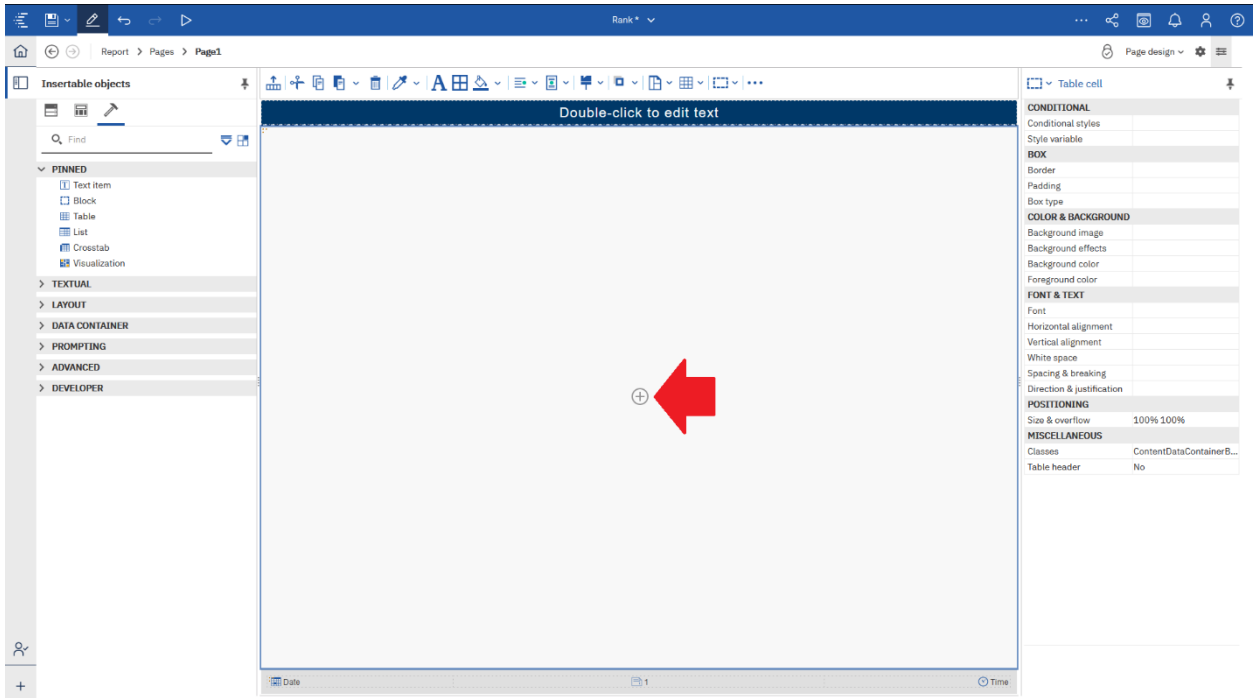
Use the Rank function

1. Start by creating a new report. To do that, click *New* and then *Report*:
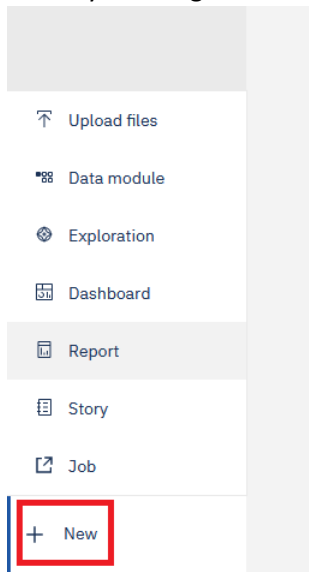
2. Select the *1 column* template and the *Blue* theme and click *OK*
3. To add data to the report, click the *Select sources* button:
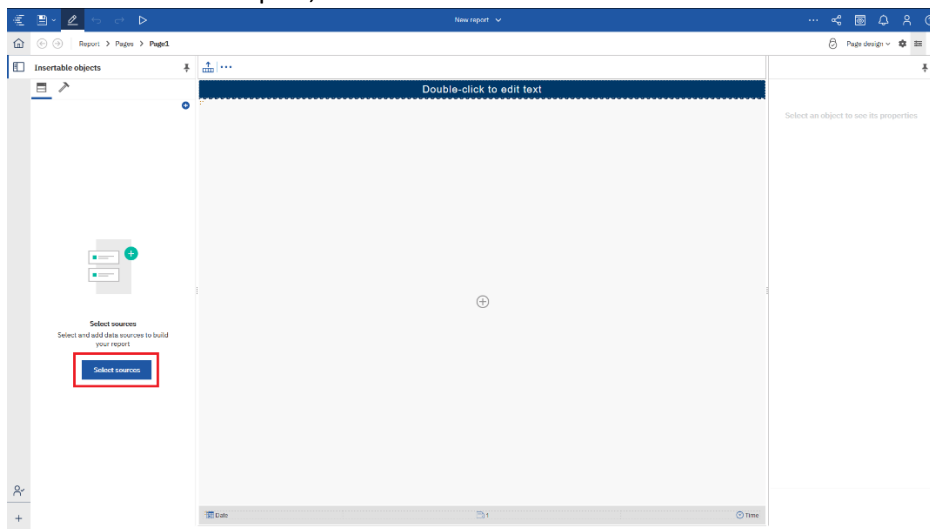
4. Navigate to *Team content > Samples > By feature > Core > Data > Sample data module* and click *Open*

5. Click the *Plus* icon in the center of the template and select *List*:

6. In the resulting dialog, accept the defaults and click *OK*

7. Expand *Sample File Go Sales* and double-click *Product* and *Revenue* to add them to the List

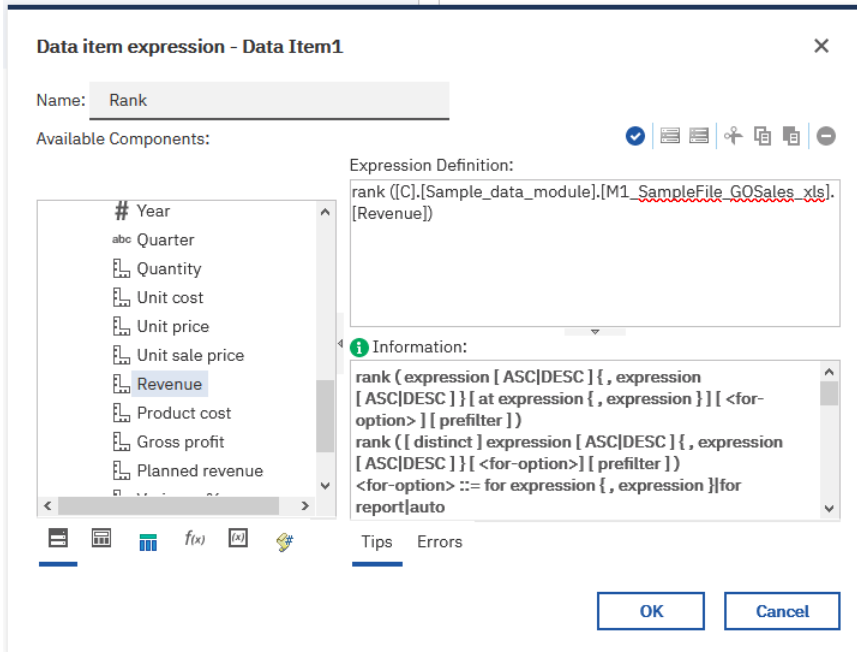8. Now we need to modify the underlying query. Use the navigation menu to open Query1:
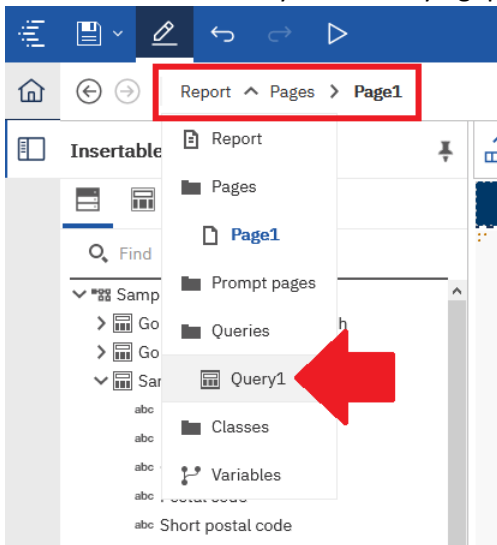
9. We will create a calculation to generate the ranking. Open the *Toolbox*:
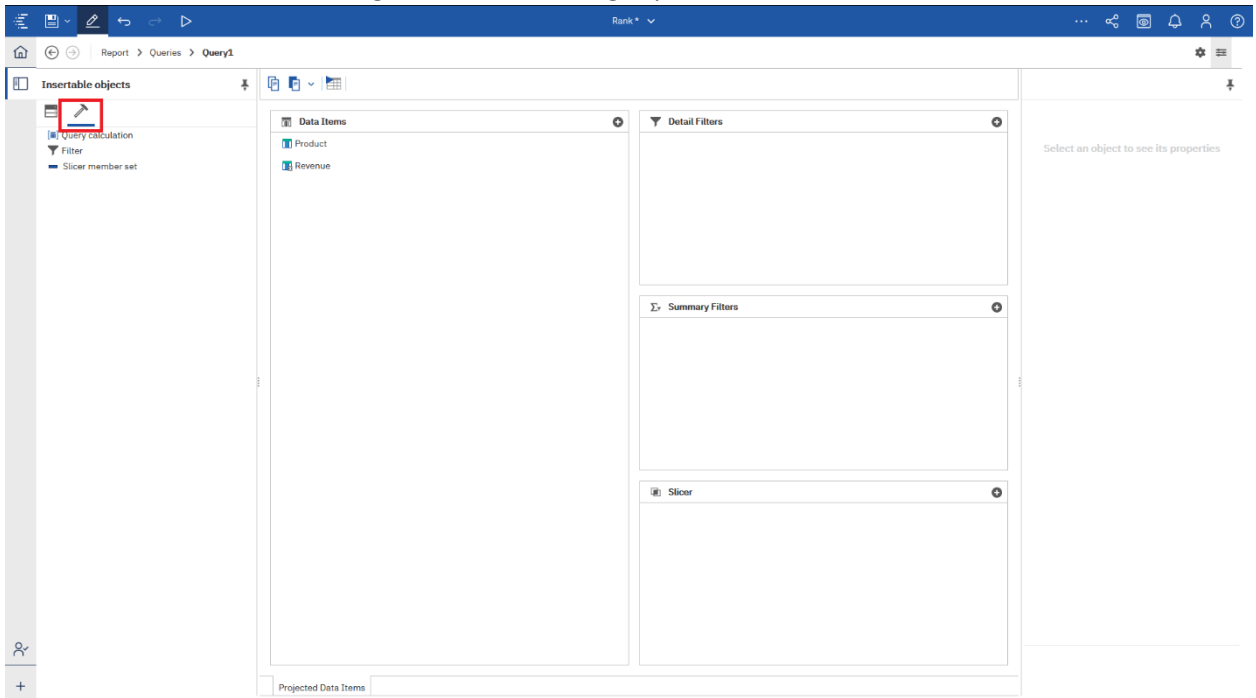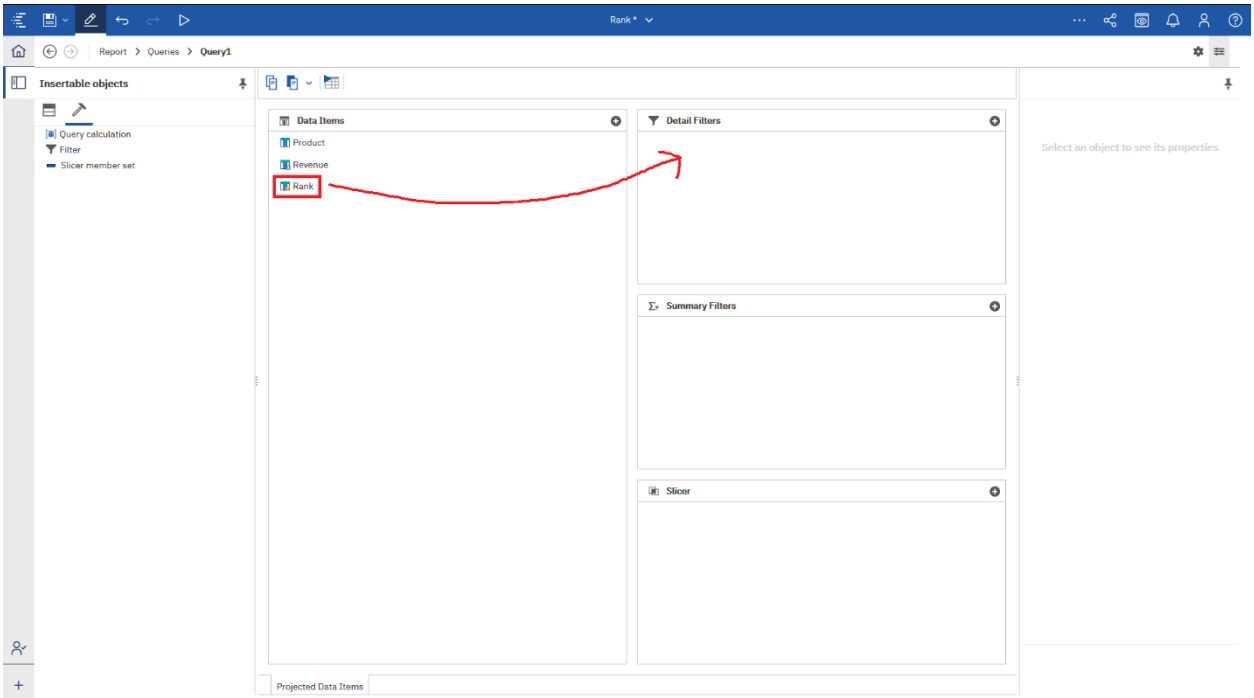

10. Drag a *Query calculation* into the *Data Items* box:
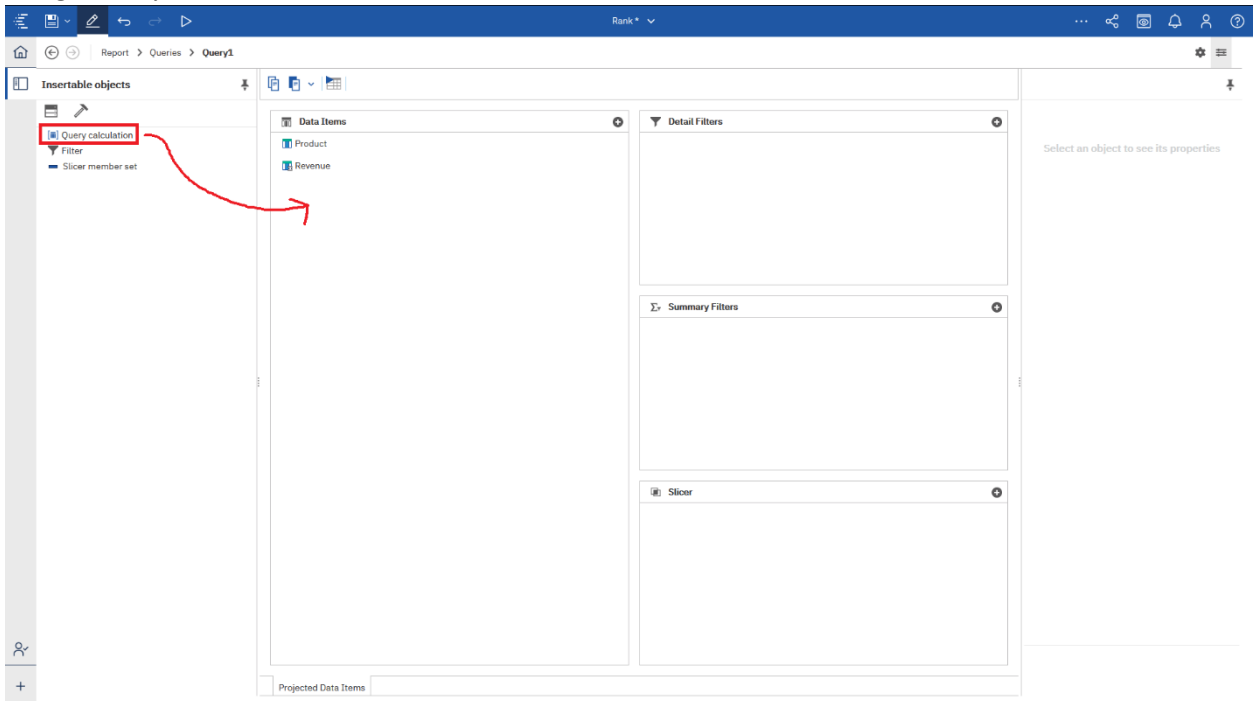
11. In the resulting dialog, type **Rank** into the *Name* box. In the *Expression Definition* box, type **rank (**, drag in Revenue, and close the brackets. Click *OK*.
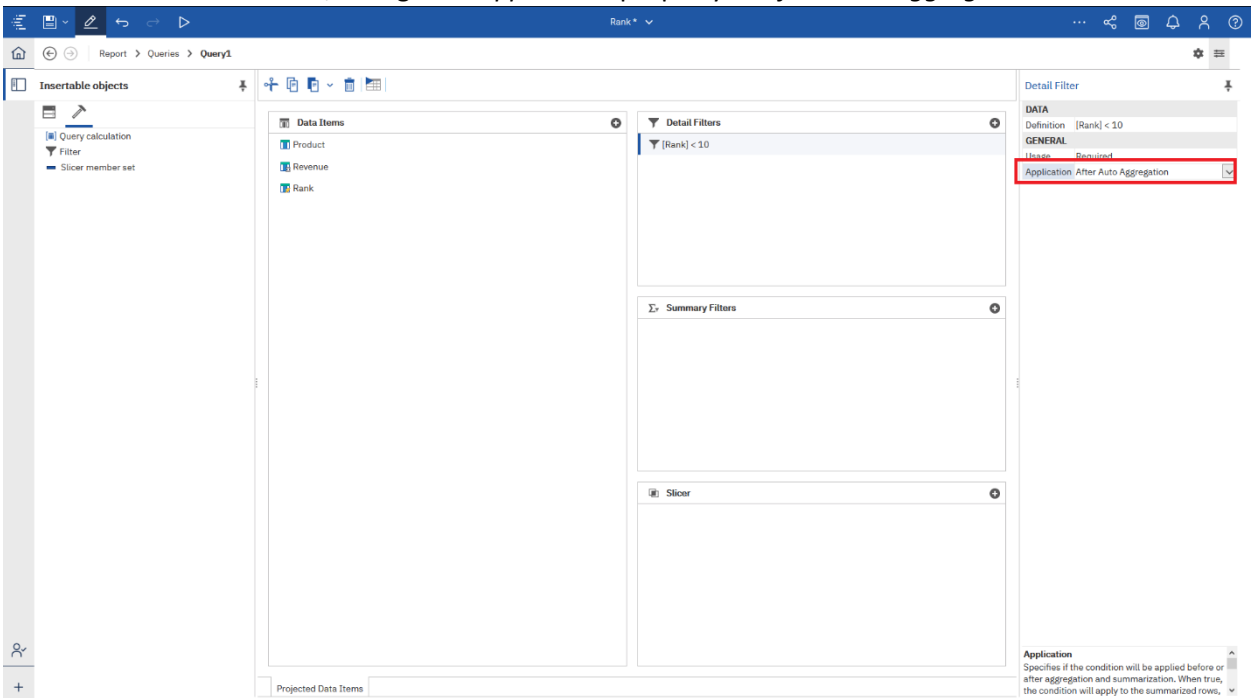

12. To show only the Top 10, we need to create a filter. Drag the new calculation named *Rank* from the *Data Items* box and drop it in the *Detail Filters* box:
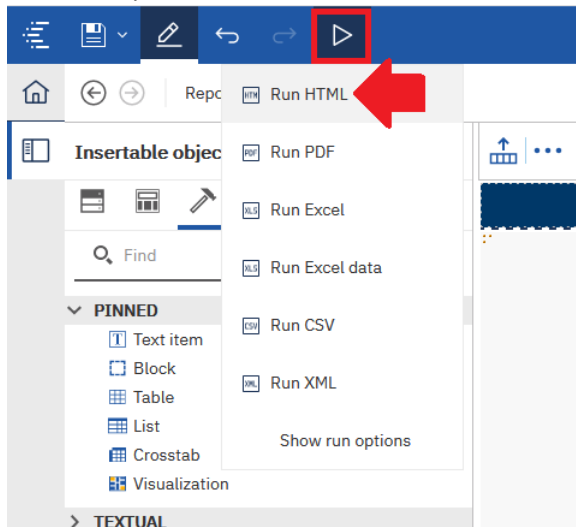
13. In the resulting dialog, type **< 11** and click *OK:*
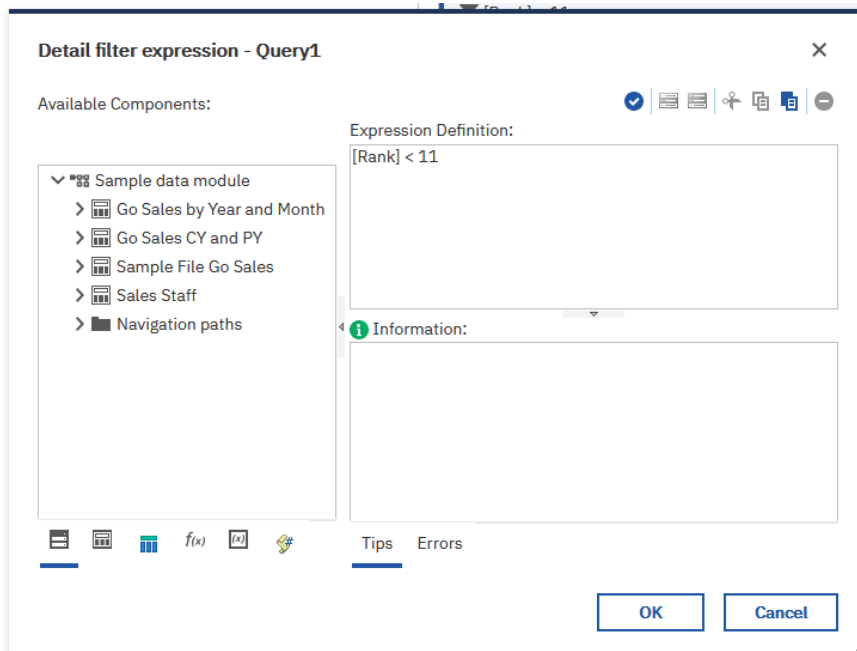
14. With the filter still selected, change the *Application* property to *After Auto Aggregation*:

15. Run the report:

Bottom 10

The following syntax would result in the bottom 10:

rank ([C].[Sample_data_module].[M1_SampleFile_GOSales_xls].[Revenue] **ASC**)

Product	Revenue	Rank
Calamine Relief	$186,423.84	1
Aloe Relief	$197,251.44	2
Insect Bite Relief	$284,654.40	3
BugShield Lotion Lite	$616,978.74	4
EverGlow Double	$620,390.49	5
Sun Blocker	$779,815.30	6
Polar Wave	$833,165.08	7
Granite Chalk Bag	$862,431.12	8
Polar Extreme	$948,581.39	9
BugShield Spray	$1,039,028.04	10

In the example above, the Rank of 1 is given to the lowest (worst) product's revenue, and so on.

Application

In this example, our query is set to always show the Top 10 because of the filter. In a production report, you would probably have multiple queries with **multiple filters**. One query could be filtered for the Top 10, one query for the Top 25, one query for the Bottom 10, etc. One strategy would be to create the first query, and then copy it multiple times, changing the filter for each one. You would also need to add the descending sort to the calculation for the Bottom queries.

Appendix A: The Rank Function Syntax

rank (expression [ASC|DESC] { , expression [ASC|DESC] } [at expression { , expression }] [<for-option>] [prefilter])

rank ([distinct] expression [ASC|DESC] { , expression [ASC|DESC] } [<for-option>] [prefilter])

<for-option> ::= for expression { , expression }|for report|auto

- Returns the rank value of selected data items
- The sort order is optional; descending order (DESC) is assumed by default.
- If two or more rows tie, then there is a gap in the sequence of ranked values (also known as Olympic ranking).
- The "<for-option>" defines the scope of the function.
- The "at" option defines the level of aggregation and can be used only in the context of relational datasources.
- Distinct is an alternative expression that is compatible with earlier versions of the product.
- Null values are ranked last.

Example: rank (Sales 98)

Result: For each row, returns the rank value of sales for 1998 that is attributed to each sales representative. Some numbers are skipped when a tie between rows occurs.

Employee	Sales 98	Rank
Gibbons	60000	1
Flertjan	50000	2
Cornel	50000	2
Smith	48000	4