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Advanced Data Queries

Aggregates

Topics

- Advanced Queries
- Aggregates
  - Multiple Sources
  - Joins
  - Calculated Attributes
  - Aggregating Records

Advanced Queries

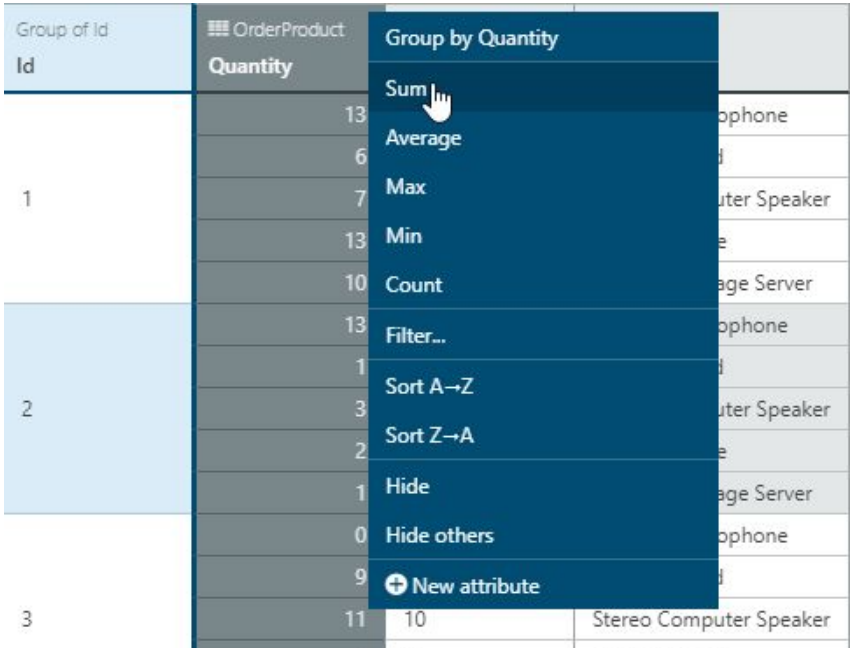
Retrieving the correct data from the database can often be complex

There are more advanced options available in Aggregates

- Multiple Sources
- Calculated attributes
- Aggregated functions

Also possible to write SQL statements

- SQL Tool



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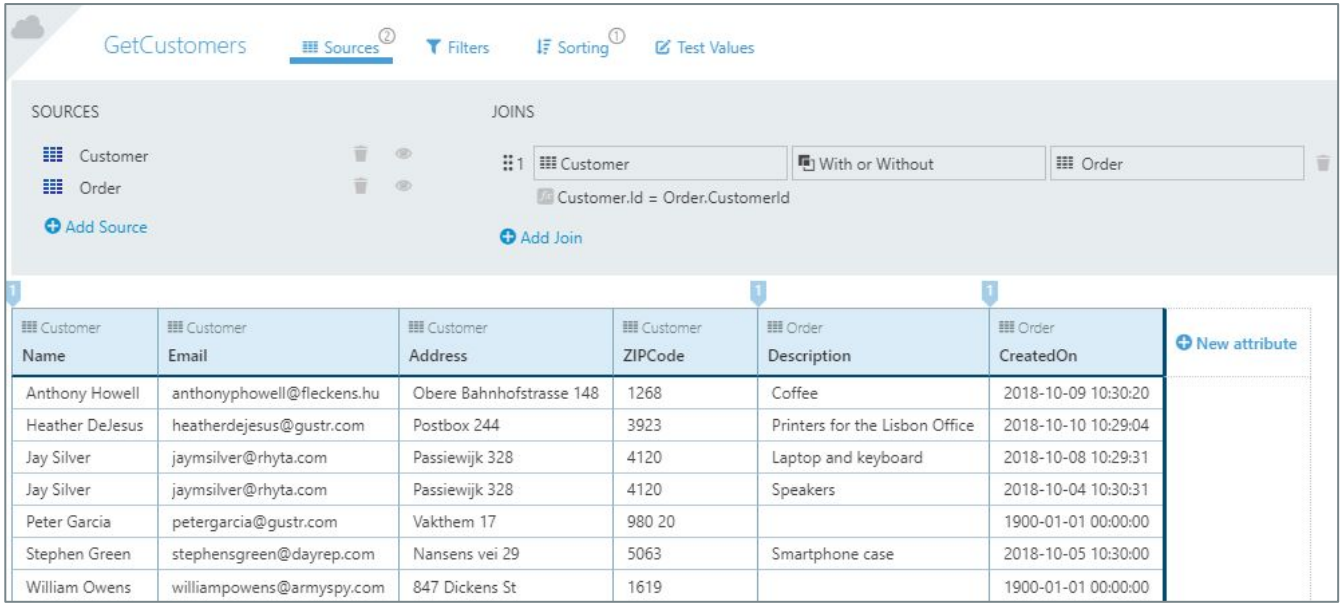
Multiple Sources

Aggregates can have **multiple Sources** and when those Entities have relationships, OutSystems automatically create the **Joins**



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Join Examples

Aggregates support three types of Joins

- Only With
- With or Without
- With

Customer

Customer Id	Customer Name	Customer Address	Customer ZIPCode
24	Anthony Howell	Obere Bahnhofstrasse 148	1268
16	Bradley Murray	276 Vassileos Alexandrou Avenue	8100
10	Brian Fallon	Příční 1029	756 43
23	Brigid Heavner	1719 Devenish St	1378
19	Charlene Strang	Hantverkarg 95	134 00
5	Donald Cummings	Avenida João C Real 96	3850-562
7	Faith White	Ποσειδώνος 138	8027
4	Gerald Bell	Copacabana 7902	12500
12	Heather Dejesus	Λήτους 162	2237
6	Jason Slack	Wegedoorn 166	9461 KJ

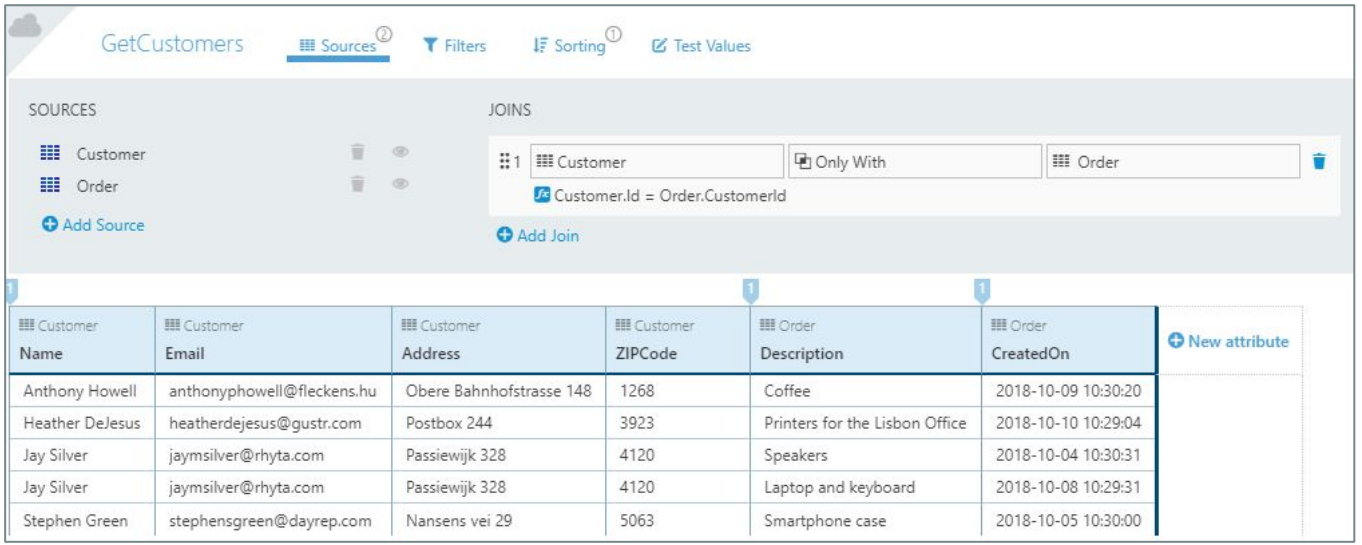
Order

Order Id	Order Description	Order CustomerId
17	Anthony Howell order for month of August (2018)	24
34	Anthony Howell order for month of August (2018)	24
36	Anthony Howell order for month of August (2018)	24
5	Bradley Murray order for month of August (2018)	16
32	Brian Fallon order for month of August (2018)	10
31	Brian Fallon order for month of July (2018)	10
7	Brian Fallon order for month of October (2018)	10
6	Brian Fallon order for month of September (2018)	10
3	Brigid Heavner order for month of September (2018)	23
2	Brigid Heavner order for month of September (2018)	23

Only With

Returns only records where there is a match between Entities

- **Only** Customers **with** Orders are returned (SQL **INNER JOIN)**



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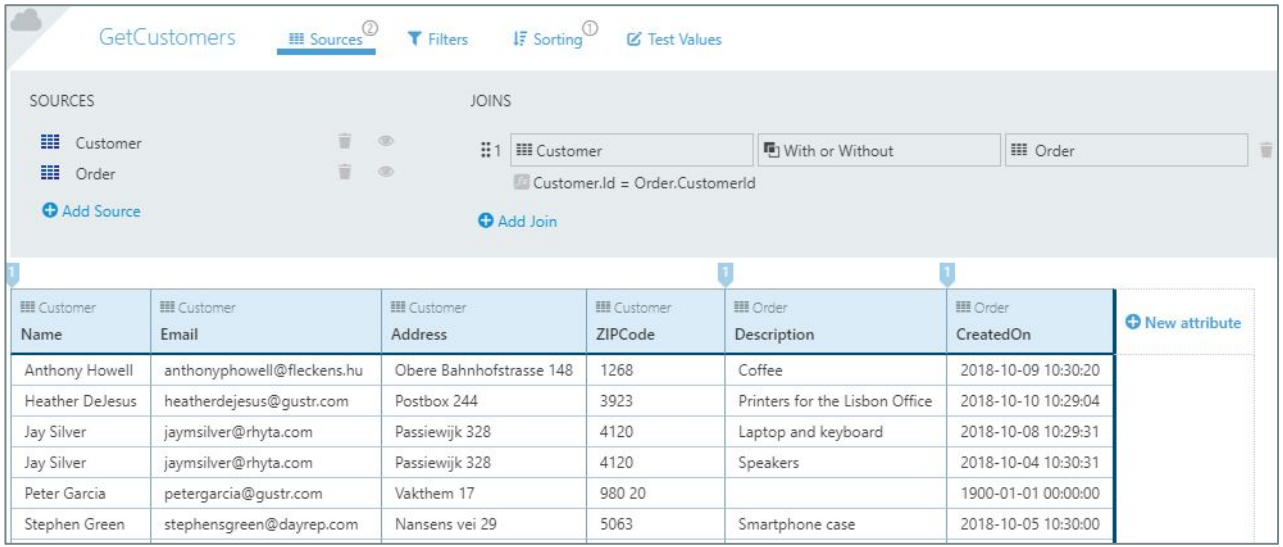
With or Without

Returns all rows from the *left* Entity even if there is no match in the *right* Entity

- Customers **with or without** Orders (SQL **LEFT JOIN**)



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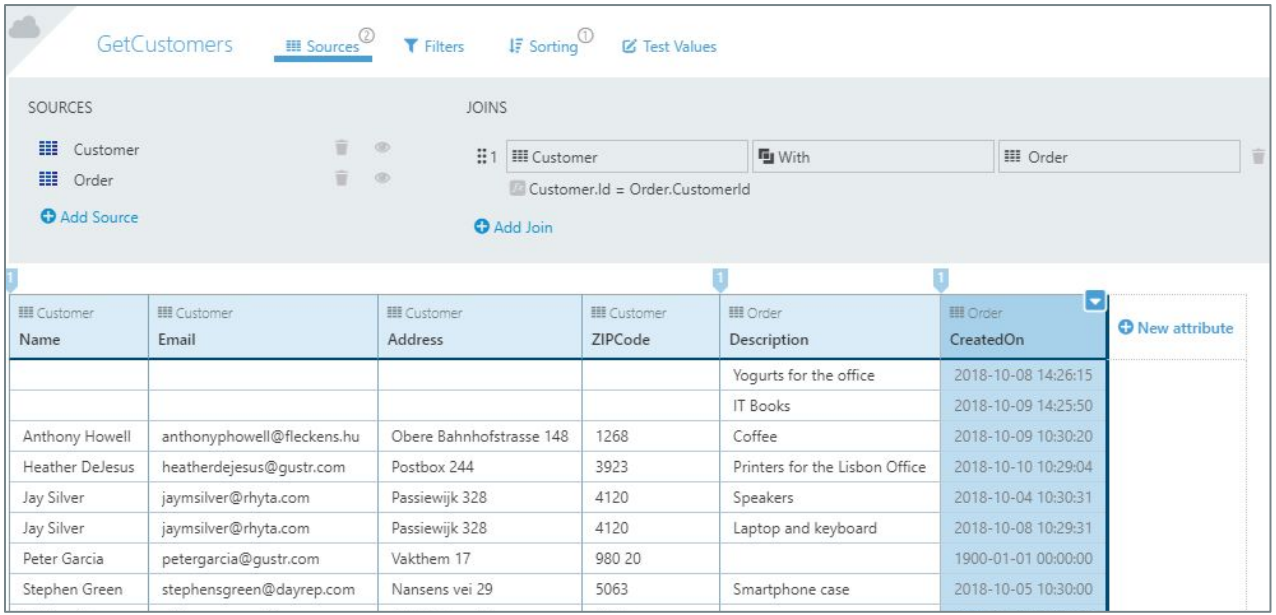
With

Returns all rows from both Entities (SQL **FULL OUTER JOIN)**



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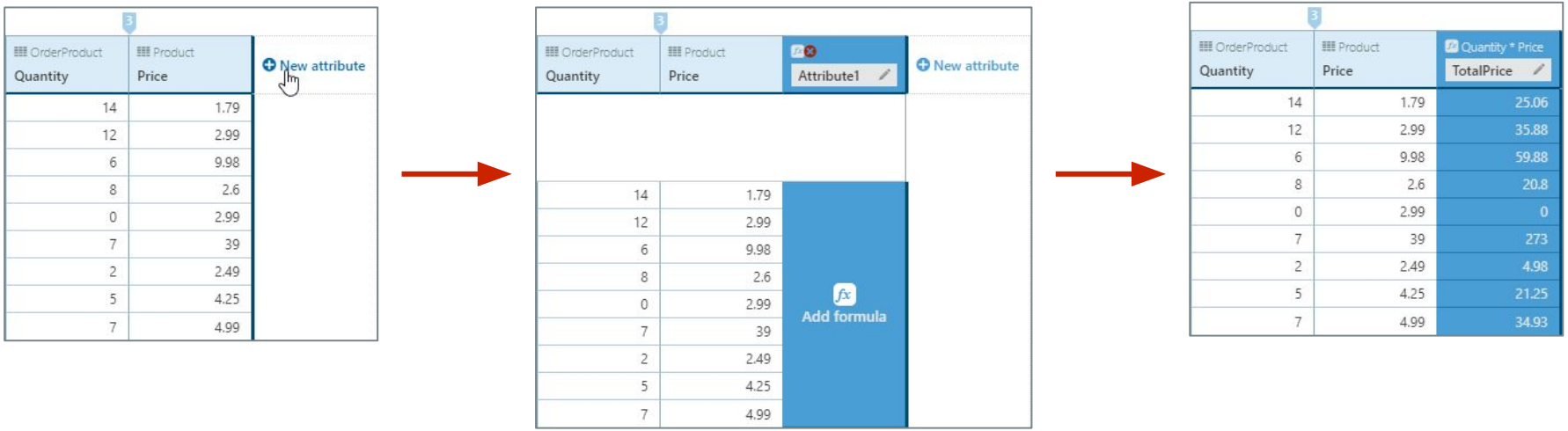
Calculated Attributes

Custom attributes computed from other attributes in the same query

Become part of the query's output type



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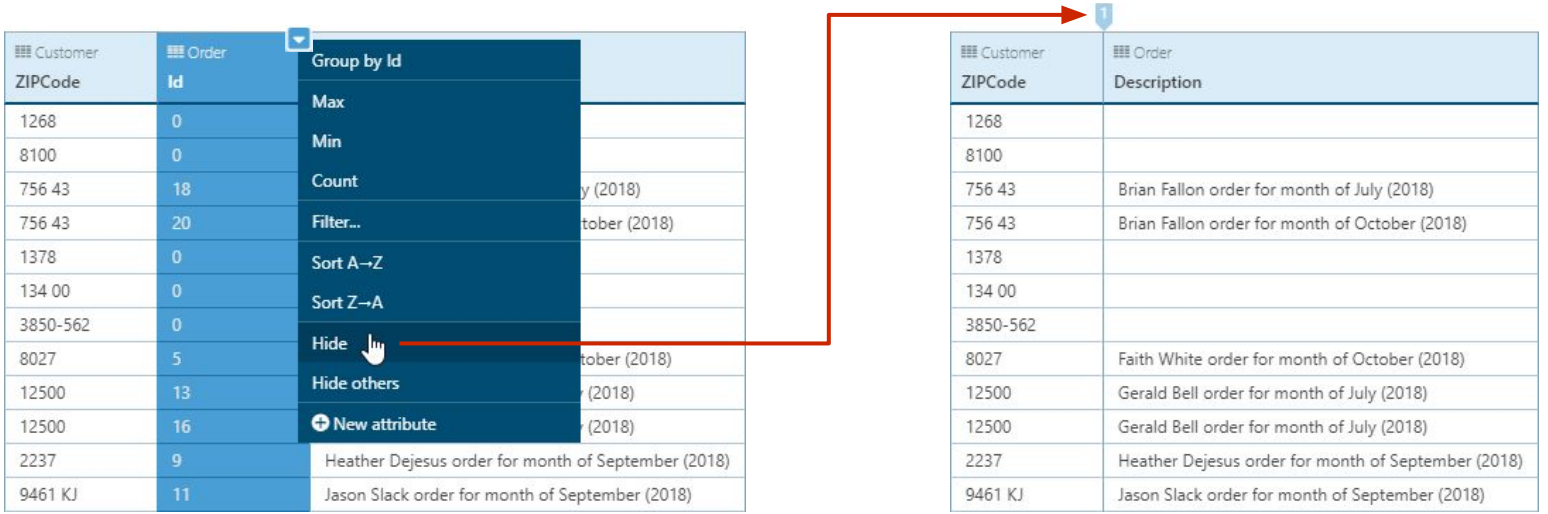
Hiding Columns

Hide columns for previewing purposes

- Does not affect the Aggregate's **output** at runtime

The columns used outside the query determine which columns are fetched



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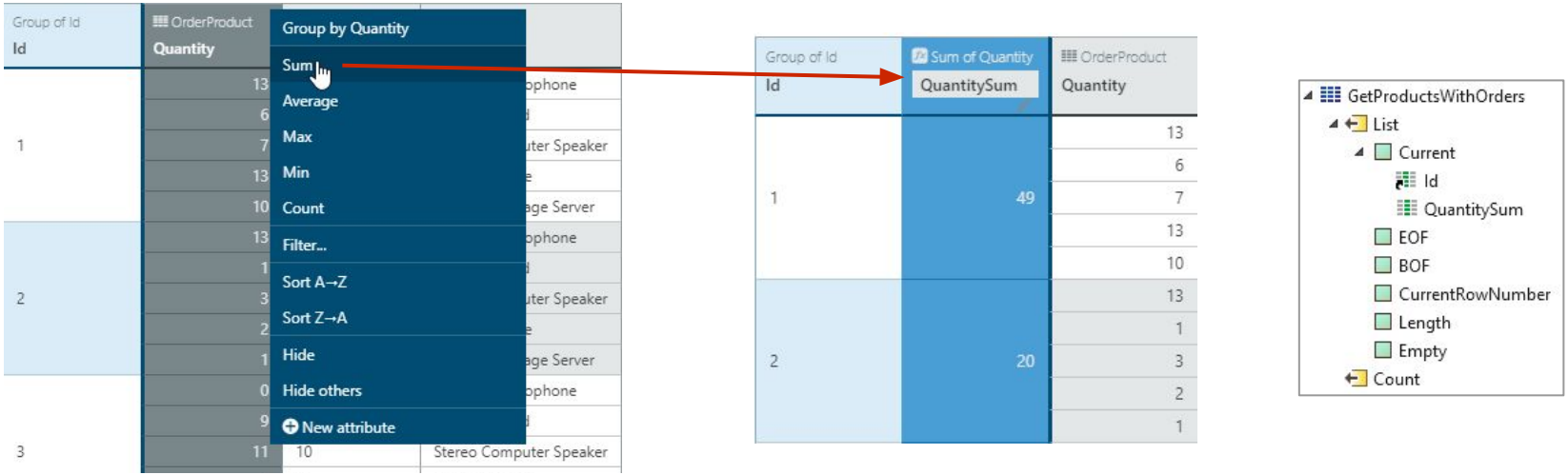
Aggregating Records

Group multiple rows together (Group by Orders to find # of Products per Order)

- Call a function on the aggregated rows: **Sum, Average, Min, Max, Count**

Only the Aggregated (blue) columns are part of the output



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Summary

- Defining Advanced Queries
- Aggregates
  - Multiple Sources
  - Joins
  - Calculated Attributes
  - Aggregating Records

Advanced Data Queries - Aggregates

Thank You!