outsystems

Aggregates 101

Reactive Developer Boot Camp

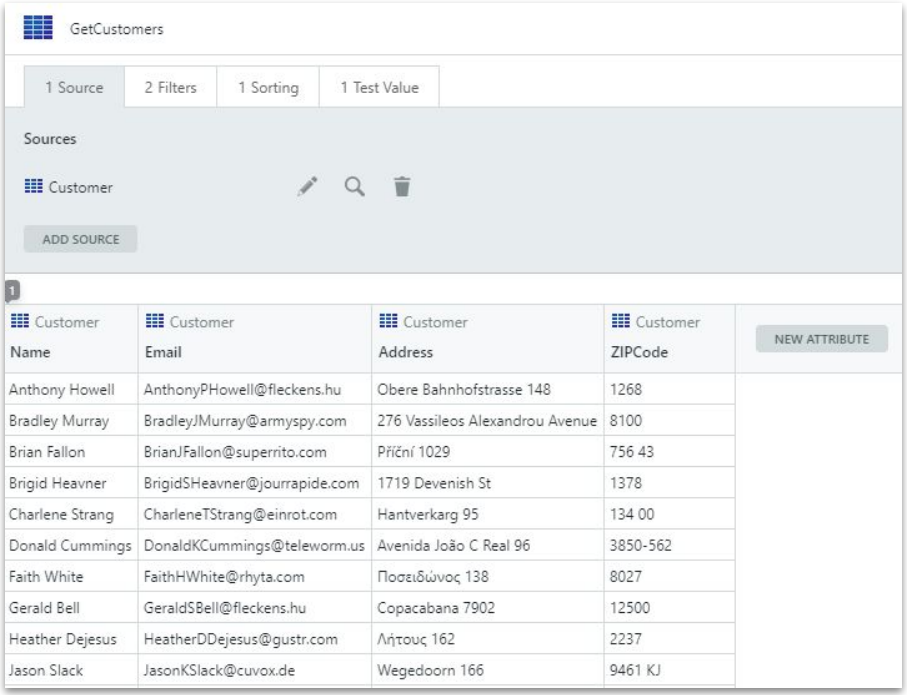
What you will learn here

- What is an Aggregate?
- Sources
- Filter
- Sorting
- Test Values
- Output

What is an Aggregate?

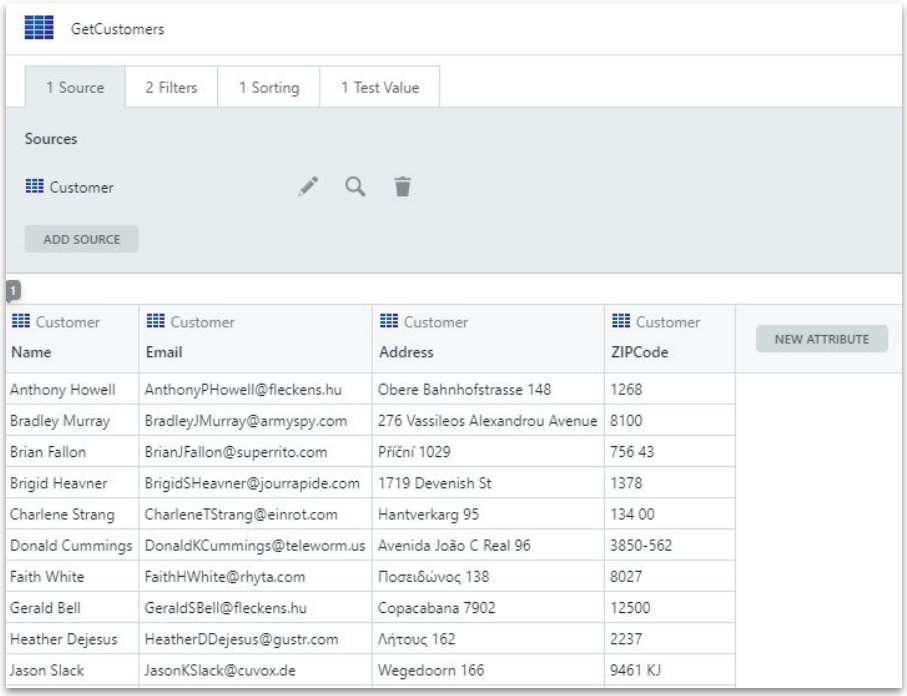
An Aggregate is a **visual** element that visually defines a **query to fetch data** from Entities with sources, filters and sorting

Aggregates



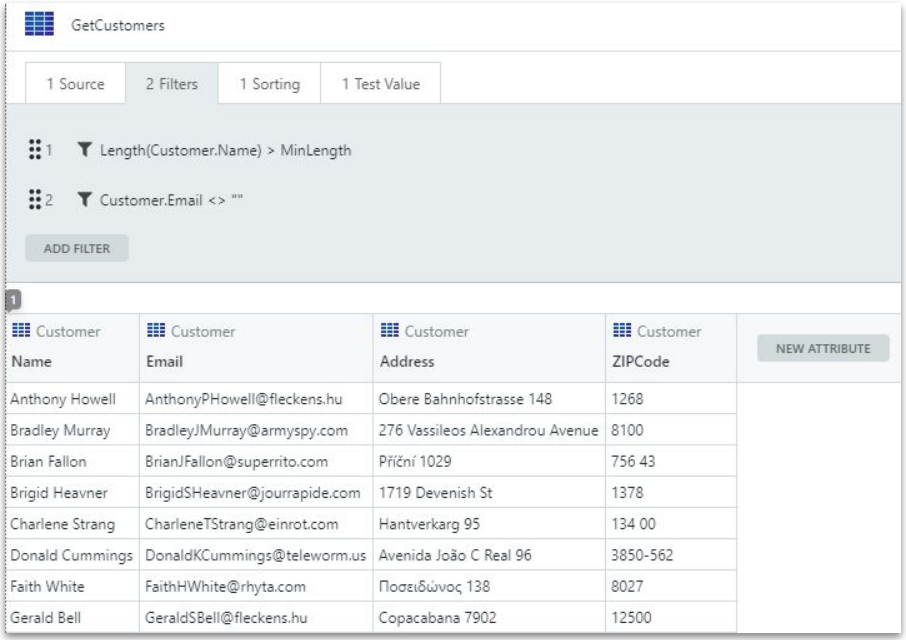
- Most applications need to fetch data from database
- Aggregates allow us to define database queries in a visual way
  - Add Sources
  - Create Filters
  - Define Sorting
- Aggregates are easy to maintain
  - Excel-like display of real data
  - SQL knowledge NOT required

Aggregate Sources



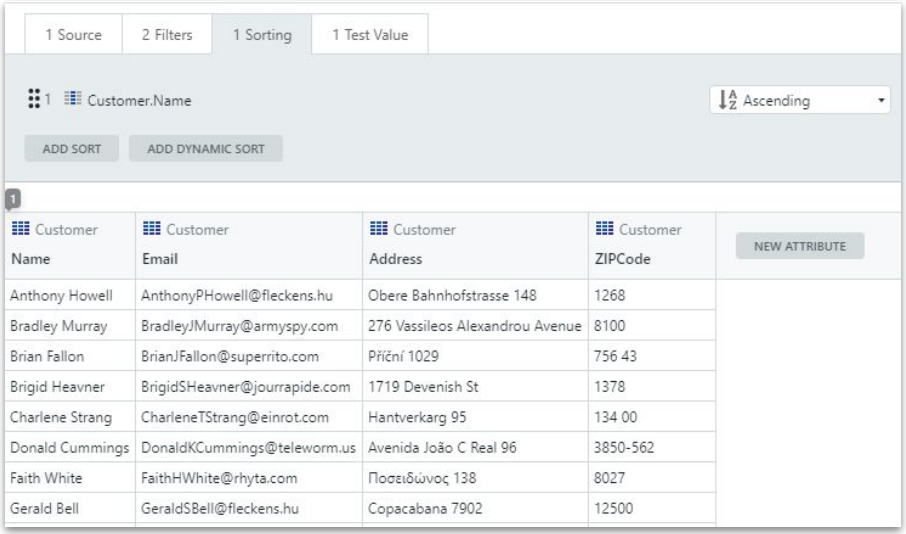
- Aggregates support one or more source Entities
- Data is retrieved from Entities

Aggregate Filters



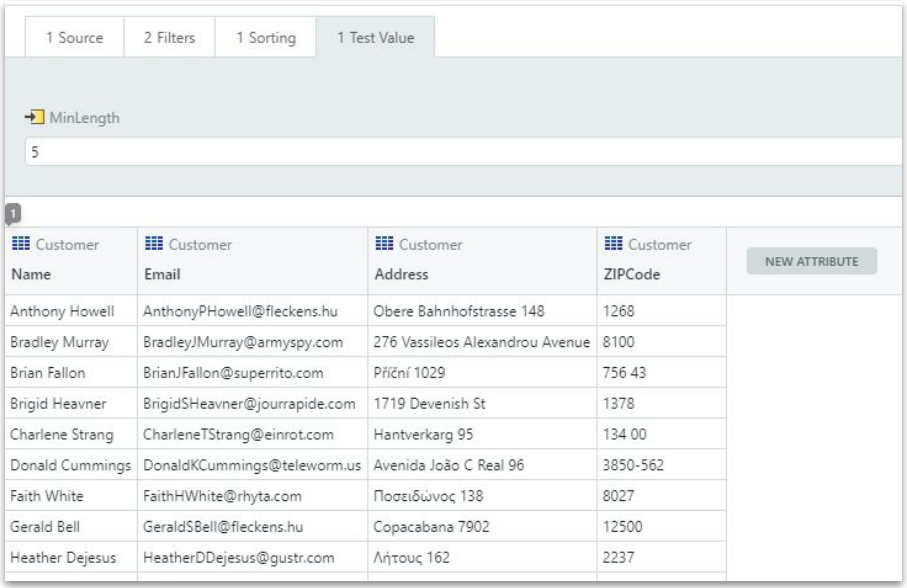
- Adds one or more conditions to the query to filter the output records
  - Support for multiple filters
  - Support logical operators
    - =, <>, and, or, …
  - Support for some built-in functions
    - CurrDateTime()
    - If(Condition, True, False)

Aggregate Sorting



- Defines the Entities attribute to sort by and which direction
  - Ascending
  - Descending
- When defining multiple sorts the order is relevant to the result

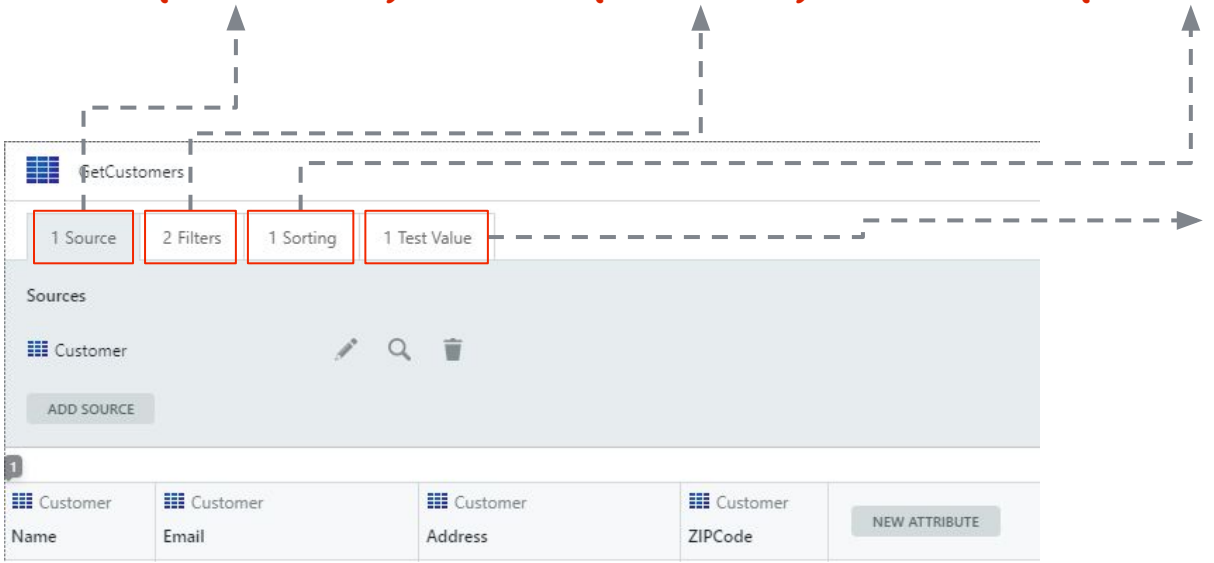
Aggregate Test Values



- Allows specifying values for external variables used in the filter or sort conditions
  - Has as many inputs as external variables
- Used to test the Aggregate and preview the output records
  - Does not have any influence at runtime

Aggregates as SQL

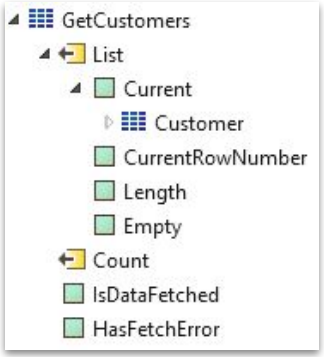
```
SELECT ... FROM {Entities} WHERE {Filters} ORDER BY {Sorting}
```



Ignored at runtime

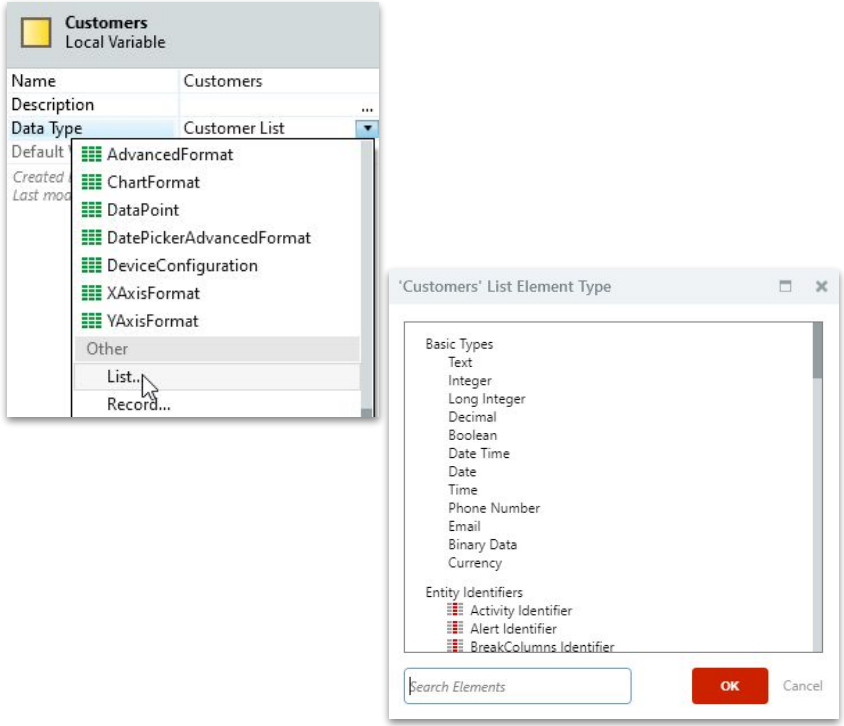
Aggregates Output

- List of Records returned:
  - Iterator: Current, CurrentRowNumber
    - Current cursor moves through the List when iterating
    - Type matches the definition in the query
    - Current points at first row by default
  - Length: number of elements returned
  - Empty: True if no records were returned
- Count has the total number of records that match the criterias defined in the Aggregate



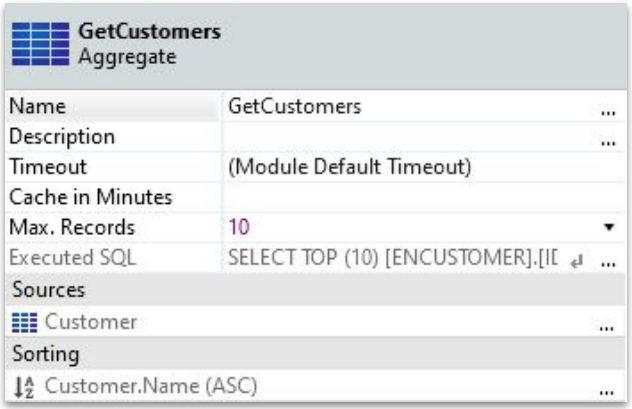
Lists

- List is an OutSystems Data Type
  - Basic Data Types
  - Compound Types
- Lists can be used in
  - Input / Output Parameters
  - Local Variables
  - (and more…)
- Current can be used in an iteration to get the next element of the List



Aggregate Properties

- It is possible to limit the Aggregate's output to a maximum number of records
  - Max. Record property
  - Does not impact the Count output
- Aggregate Editor is a SQL-dialect agnostic
  - Executed SQL property shows the SQL statement generated from the Aggregate
  - SQL is generated according to the DBMS used



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Questions?

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Thank You!