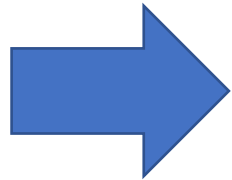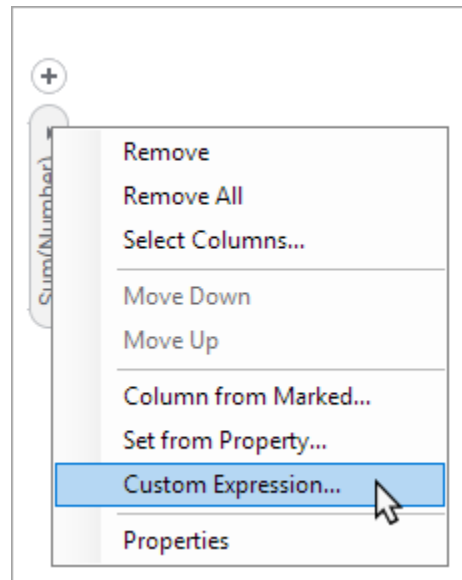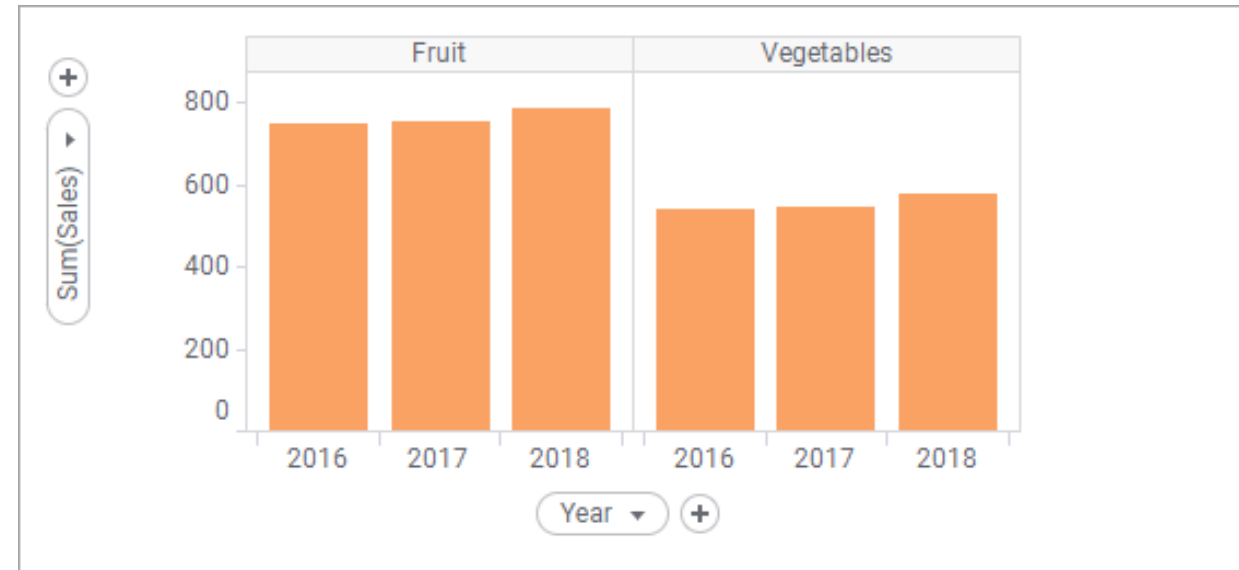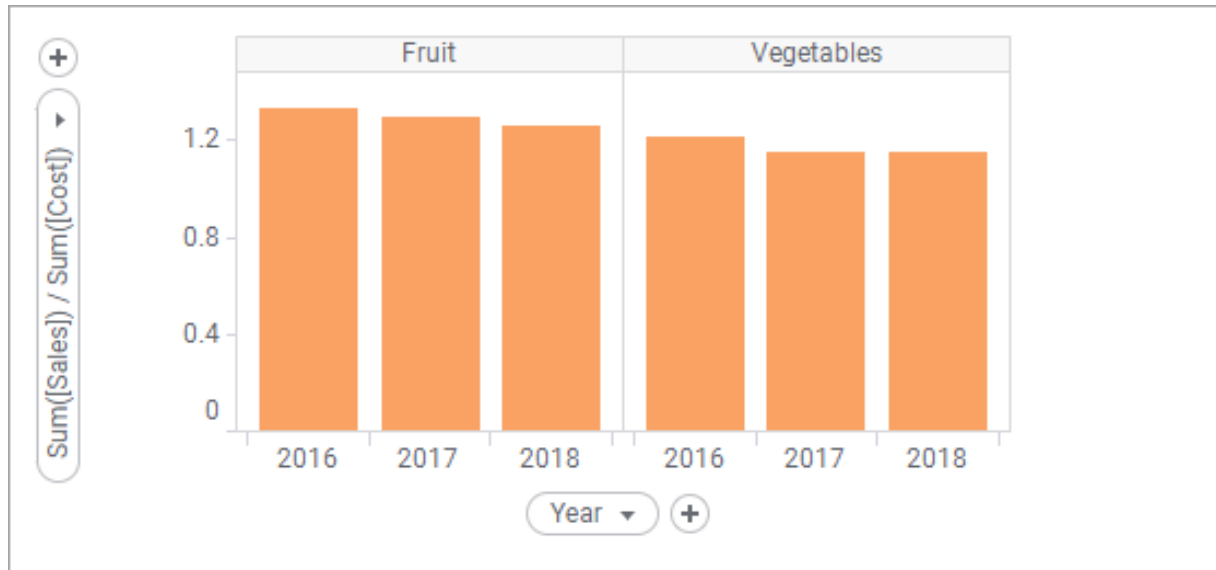# Custom Expressions

Introduction
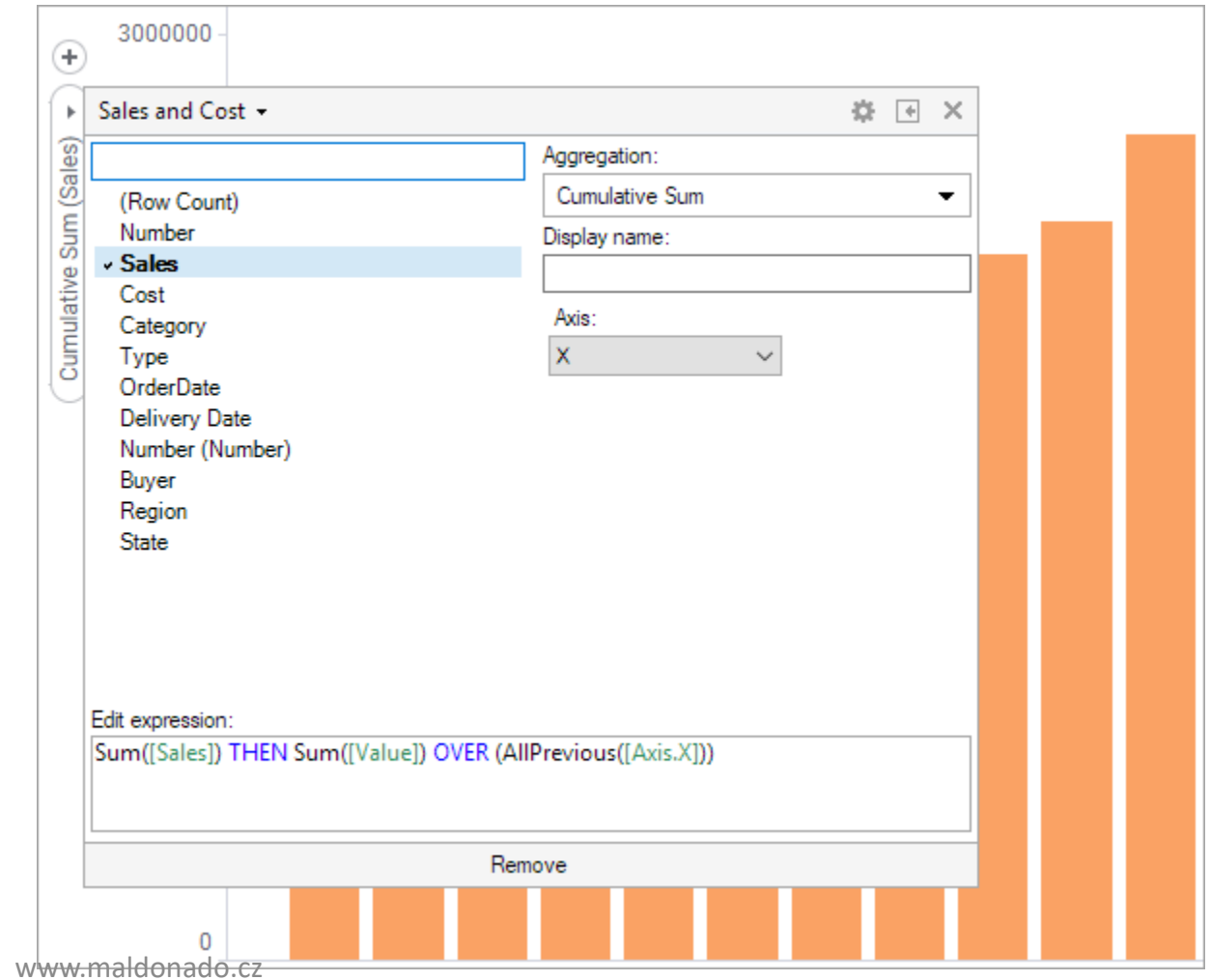
Custom Expressions Overview

- Markers are, quite simply, a representation of how you have divided your data into different slices. A marker can represent everything from all rows in your data to a single row, depending on how you have set up your visualization.

- Setting up a visualization is basically deciding how the data is to be divided and how the data is to be aggregated over the slices. For example, if the aggregation method is **Sum()**, the total value of all sales for each product and year are summed up in one marker.

Basic Custom Expressions

Basic Custom Expressions
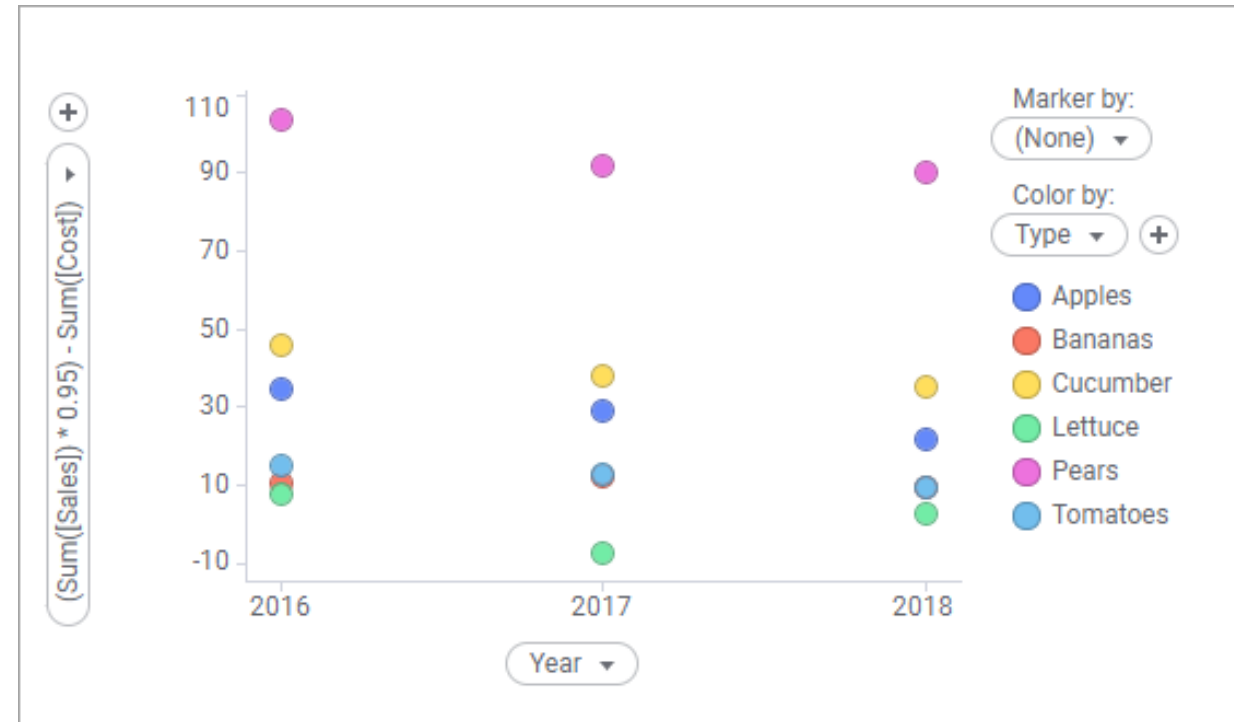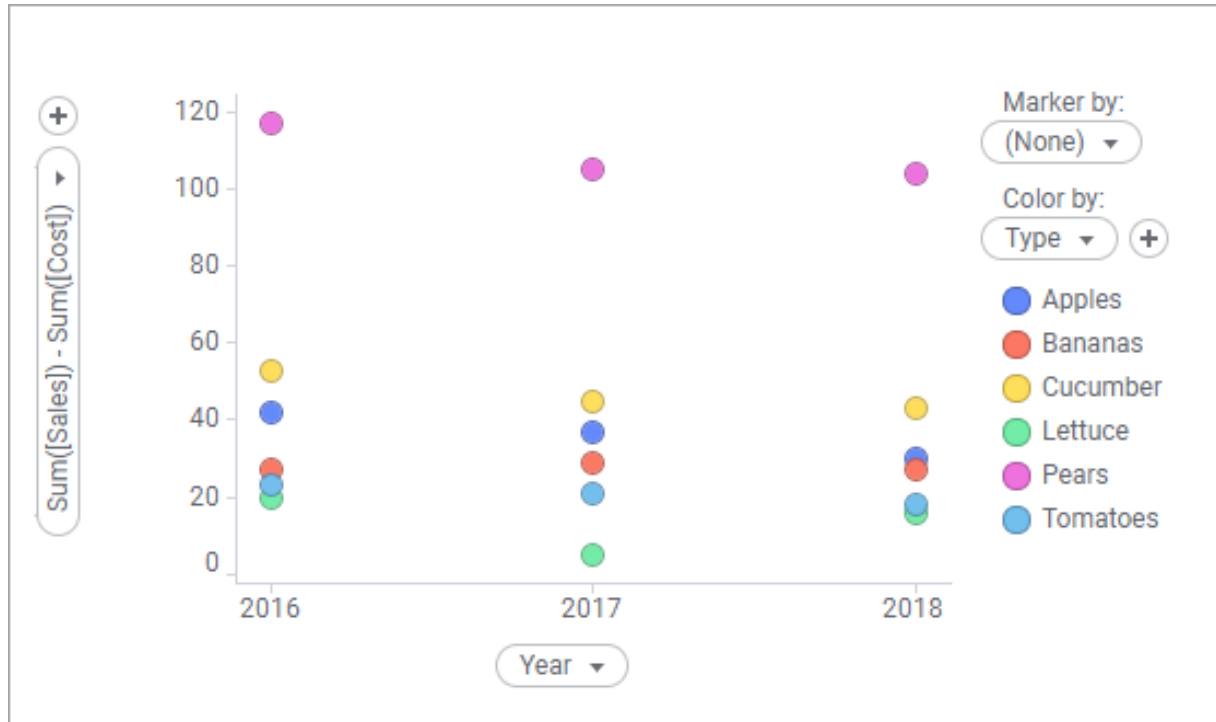
Aggregations in Custom Expressions

Region Product Sales

EAST Phone 42

EAST Phone 118

EAST Chair 190

WEST Desk 19

WEST Chair 20

CENTRAL Phone 18

CENTRAL Desk 17

CENTRAL Desk 12

CENTRAL Desk 13

CENTRAL Chair 20

Example – Max Total Sales per Region

- As calculated column: Max(Sum([Sales]) OVER ([Region]))

Region	Product	Sales
EAST	Phone	42
EAST	Phone	118
EAST	Chair	190
WEST	Desk	19
WEST	Chair	20
CENTRAL	Phone	18
CENTRAL	Desk	17
CENTRAL	Desk	12
CENTRAL	Desk	13
CENTRAL	Chair	20

Totals →

Region	Total sales (TEMPORARY)
EAST	350.00
WEST	39.00
CENTRAL	80.00

Extend →

Region	Product	Sales	Total sales (SMEARED)
EAST	Phone	42	350
EAST	Phone	118	350
EAST	Chair	190	350
WEST	Desk	19	39
WEST	Chair	20	39
CENTRAL	Phone	18	80
CENTRAL	Desk	17	80
CENTRAL	Desk	12	80
CENTRAL	Desk	13	80
CENTRAL	Chair	20	80

Project →

MAX(Sum([Sales]) OVER ([Region]))
350
350
350
350
350
350
350
350
350
350

Example – Best selling product per region

- When used in visualizations, nested aggregations can take filtering into account. Examples below are with and without "Chair".
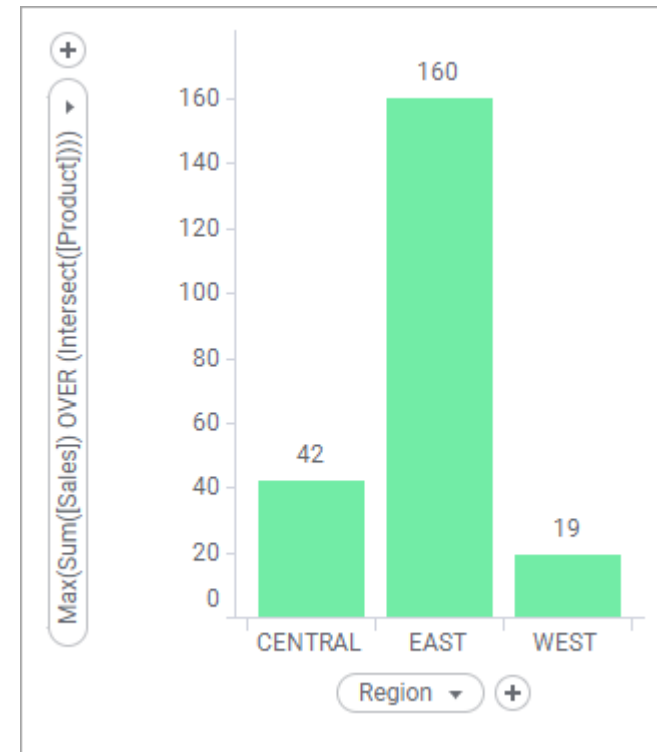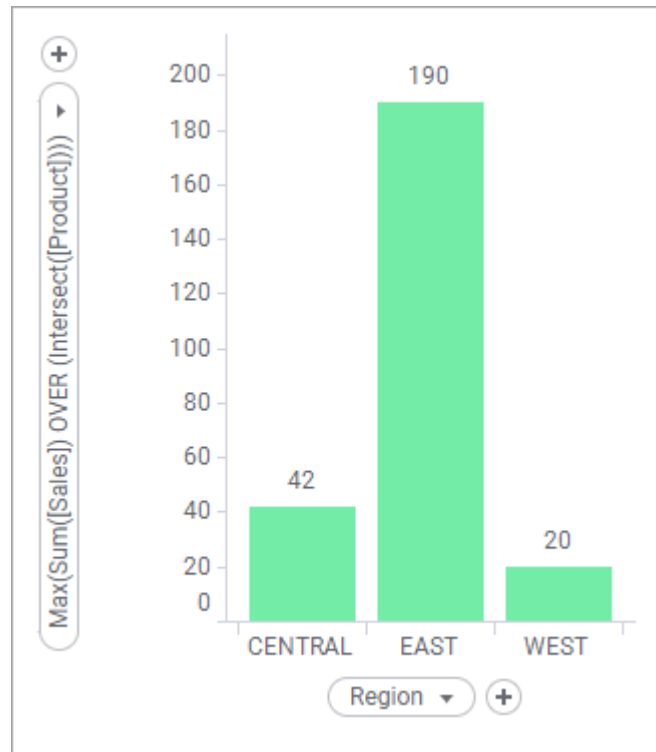
Aggregation in Custom Expressions

Region	Product	Sales
EAST	Phone	42
EAST	Phone	118
EAST	Chair	190
WEST	Desk	19
WEST	Chair	20
CENTRAL	Phone	18
CENTRAL	Desk	17
CENTRAL	Desk	12
CENTRAL	Desk	13
CENTRAL	Chair	20

Filtering

Region	Product	Sales
EAST	Phone	42
EAST	Phone	118
WEST	Desk	19
CENTRAL	Phone	18
CENTRAL	Desk	17
CENTRAL	Desk	12
CENTRAL	Desk	13

Pairwise

Region	Product	Sum([Sales]) OVER Intersect([Region],[Product])
EAST	Phone	160
EAST	Phone	160
WEST	Desk	19
CENTRAL	Phone	18
CENTRAL	Desk	42
CENTRAL	Desk	42
CENTRAL	Desk	42

Project

EAST	160
WEST	19
CENTRAL	42