Statistical Insights: From One-Click Solutions to Advanced Calculations

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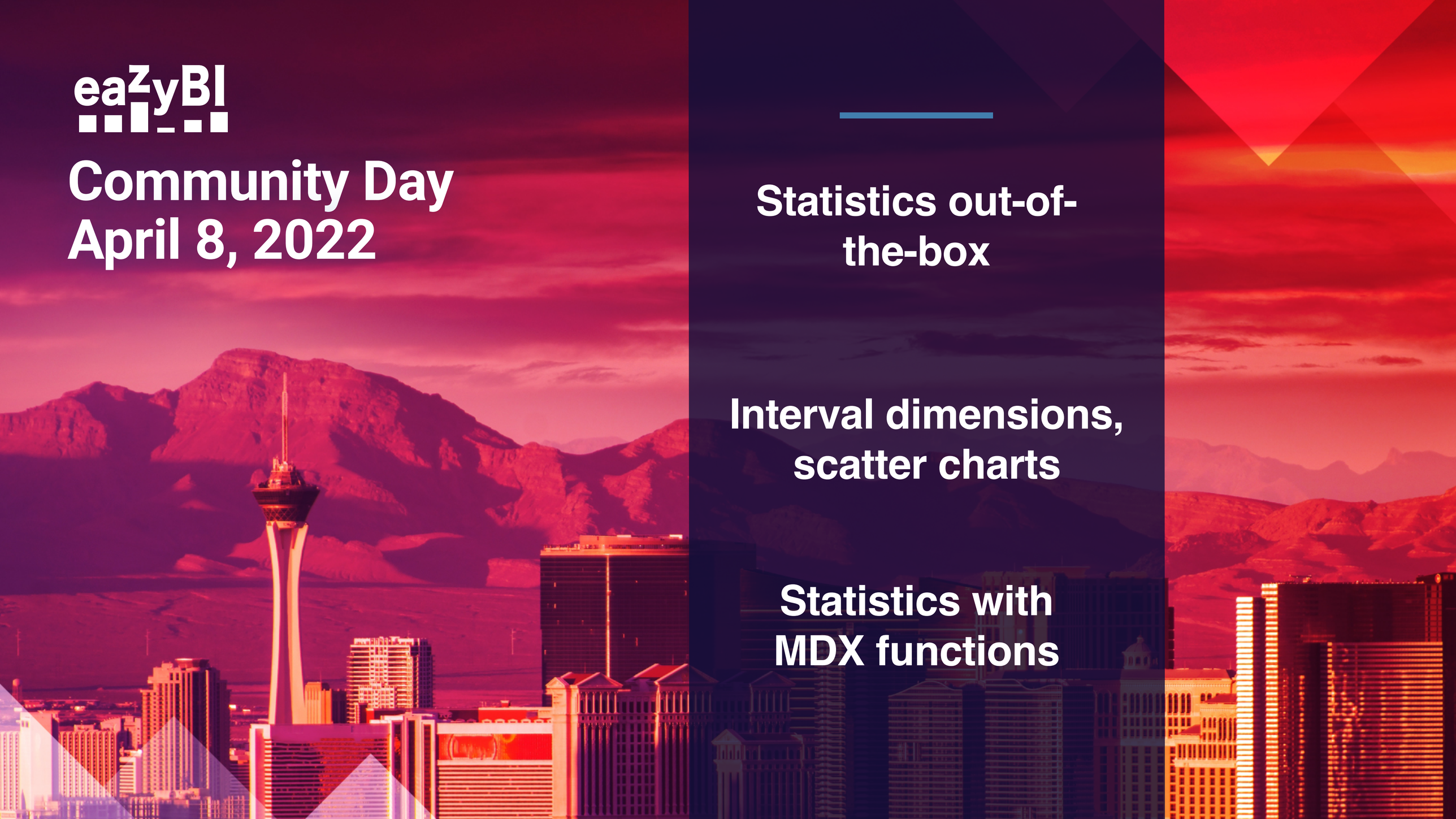
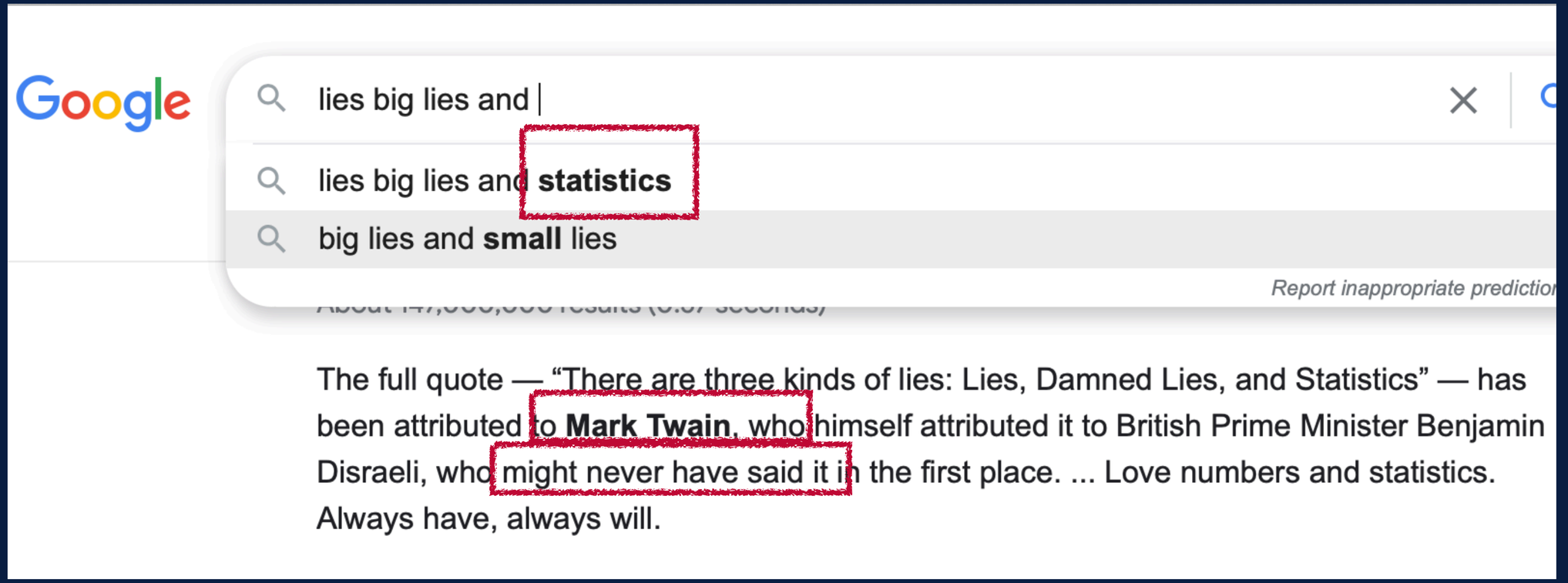
Reporting is engineering


eazyBI
Community Day
April 8, 2022
Statistics out-of-the-box
Interval dimensions, scatter charts
Statistics with MDX functions

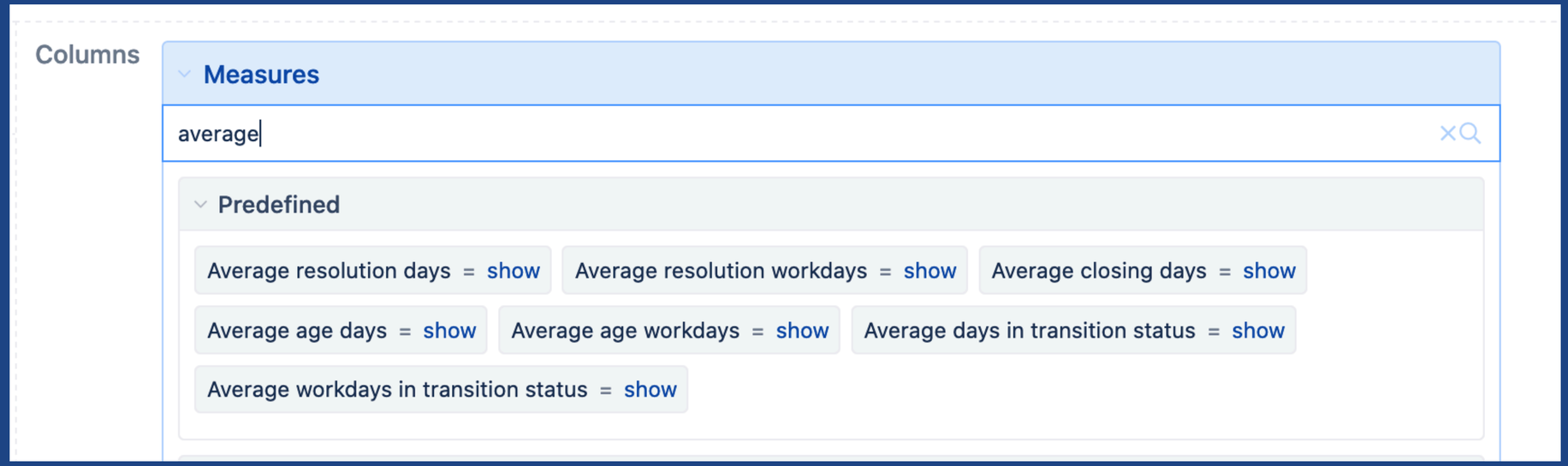
CONTEXT

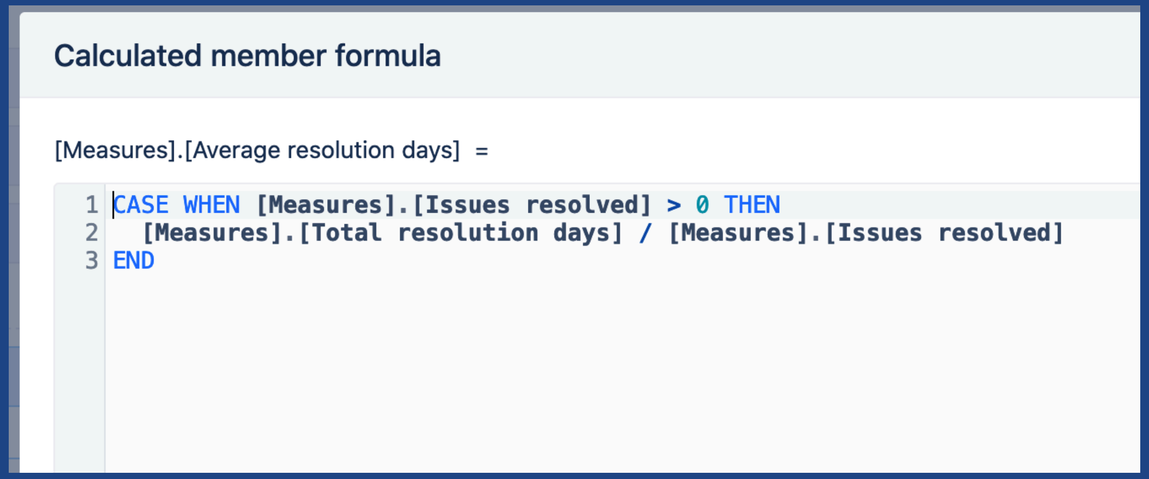
Lies, big lies and ...

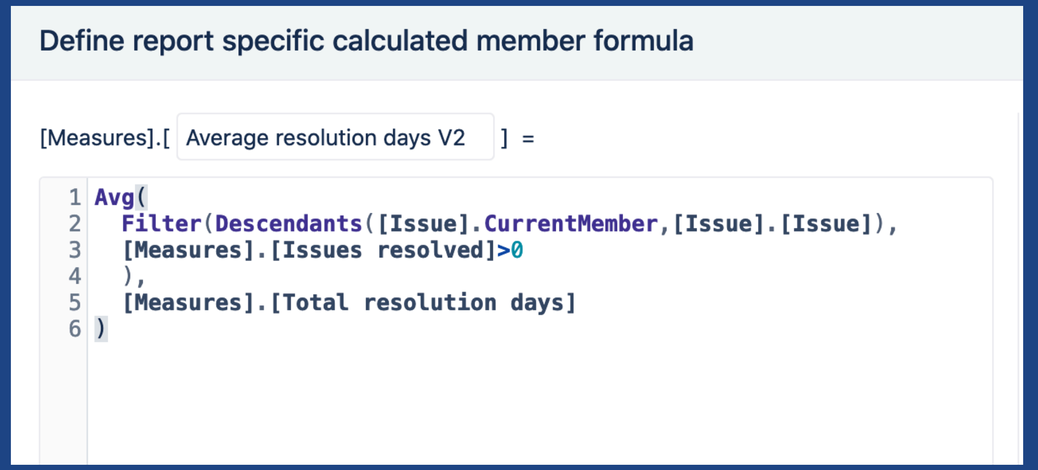


Averages

Standard measures and custom measures

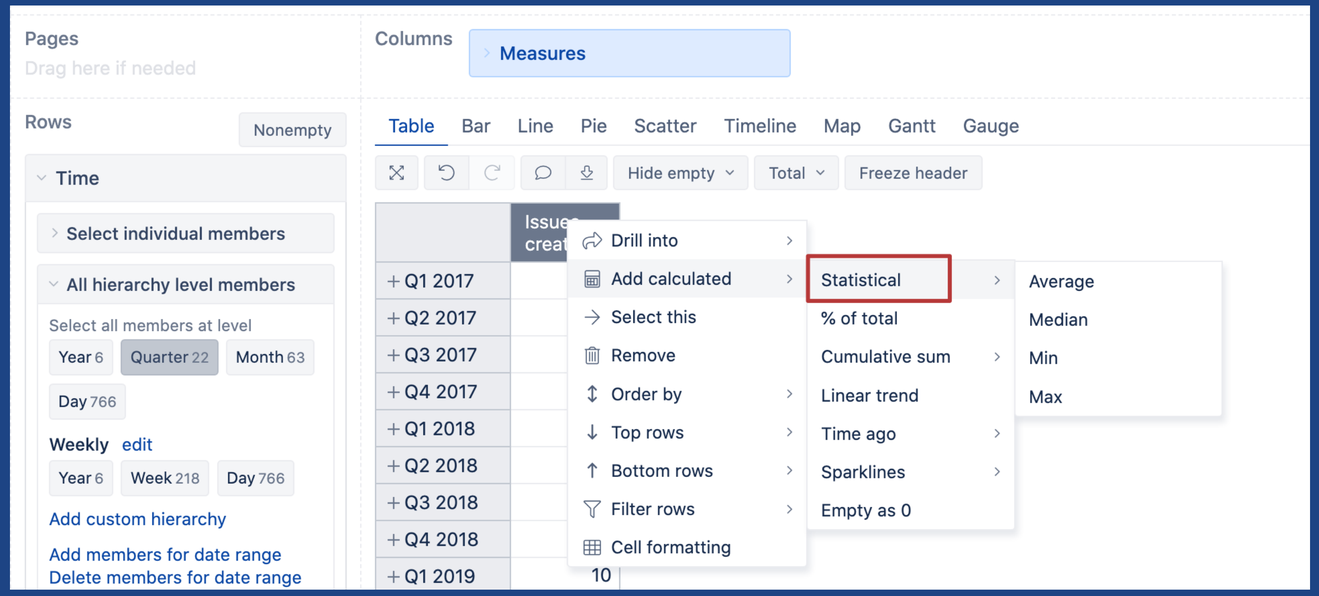




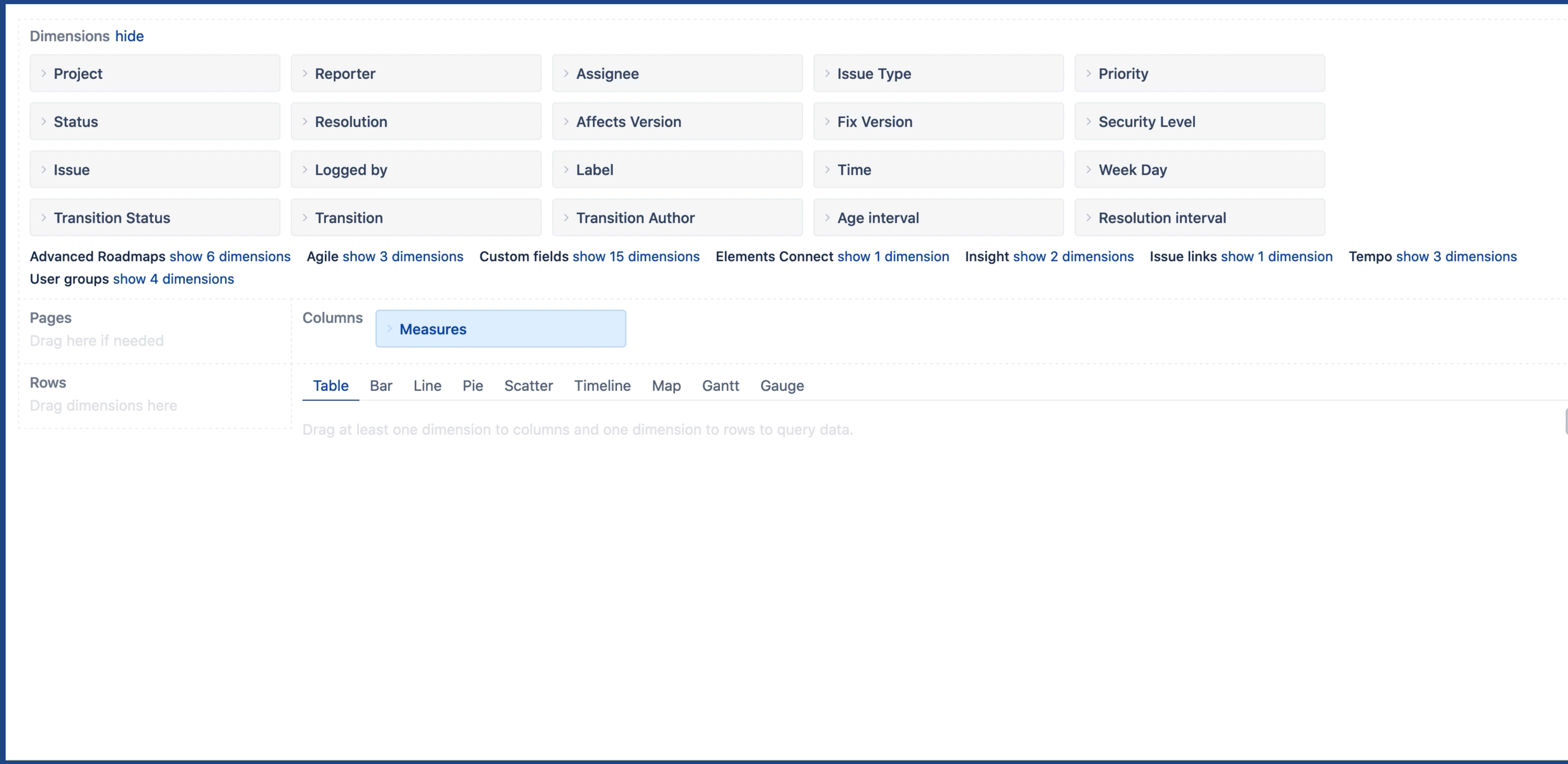


Add calculated

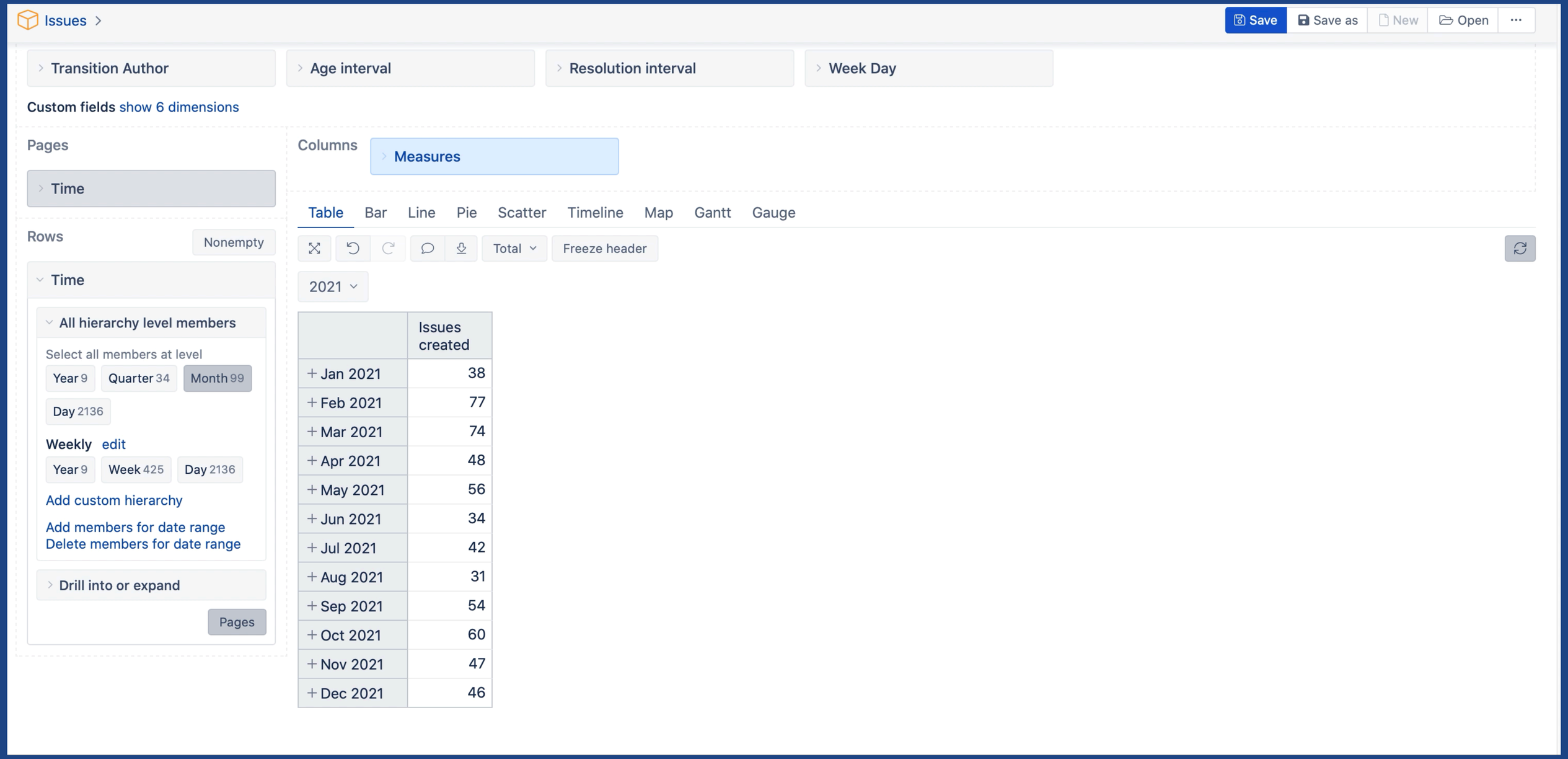
Standard calculations of basic statistical functions on **Visible rows**



Standard calculation: average

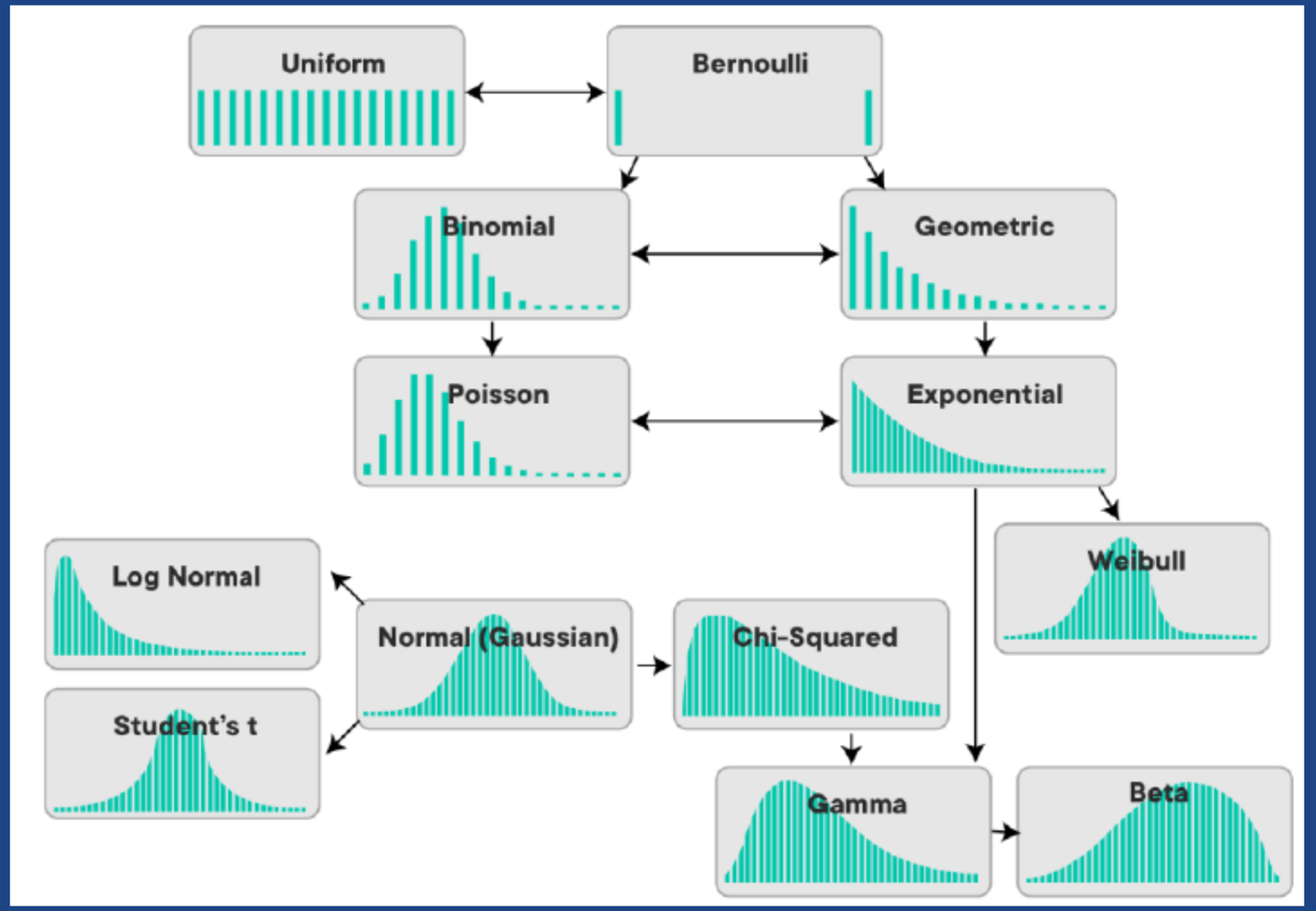


Standard calculation: linear trend



Interval dimensions

Showing the statistical distribution



Issue age, resolution

Interval dimensions

☑ Import the **Age interval** and **Resolution interval** dimensions which can be used to analyze the age of unresolved issues and the resolution time of resolved issues by specified time intervals.

```
DateDiffDays(
   [Measures].[Issue created date],
   Now()
)
```

```
DateDiffDays(
   [Measures].[Issue created date],
   [Measures].[Issue resolution date]
)
```

Pages
Drag here if needed

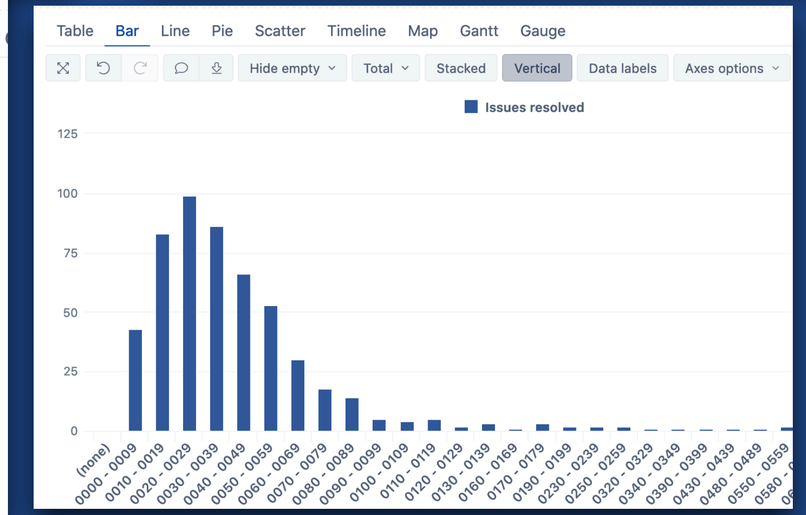
Columns
Measures

Rows
Nonempty
Resolution interval

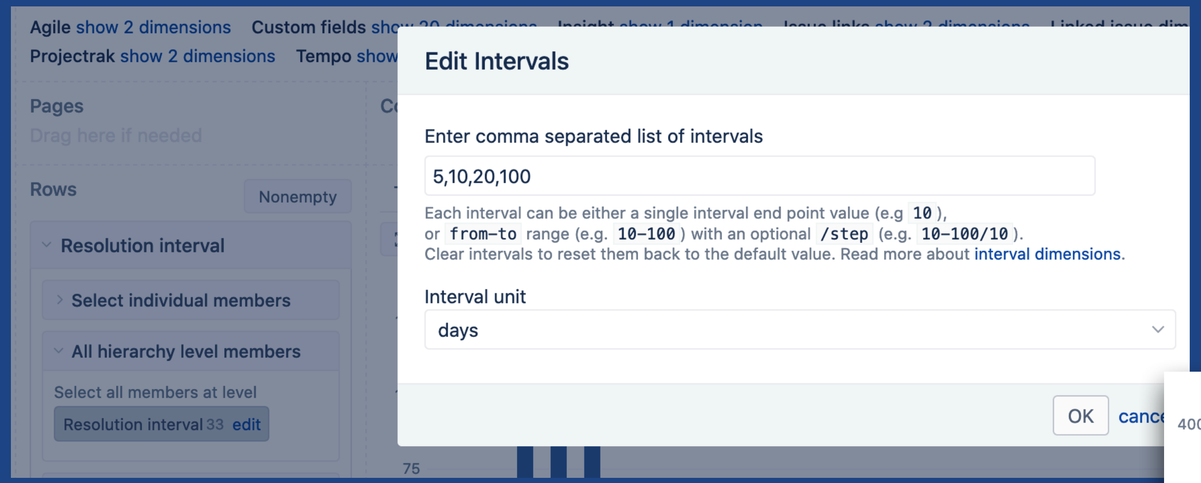
Table Bar Line Pie Scatter Timeline Map

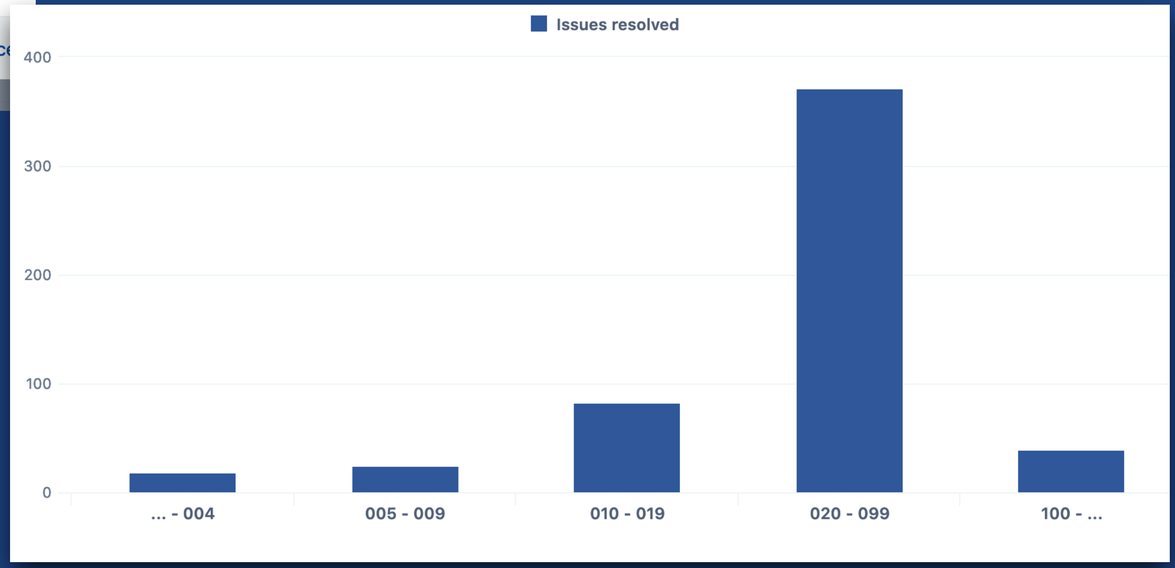
Total Freeze header

	Issues resolved	Issues created
All Resolution intervals	536	733
(none)		197
0000 - 0009	43	43
0010 - 0019	83	83
0020 - 0029	99	99
0030 - 0039	86	86
0040 - 0049	66	66
0050 - 0059	53	53
0060 - 0069	30	30



Interval configuration





Report optimization use cases with interval dimensions

How many issues spent in a status more than 5 days?

```
NonZero(Count(
  Filter(Descendants([Issue].CurrentMember,[Issue].[Issue]),
    ([Measures].[Days in transition status],
    [Transition Status].[In Progress])>5
  )
))
```

```
([Measures].[Issues created],
[In Progress intervals].[5 - ...])
```

General | License | Additional | **Advanced settings**

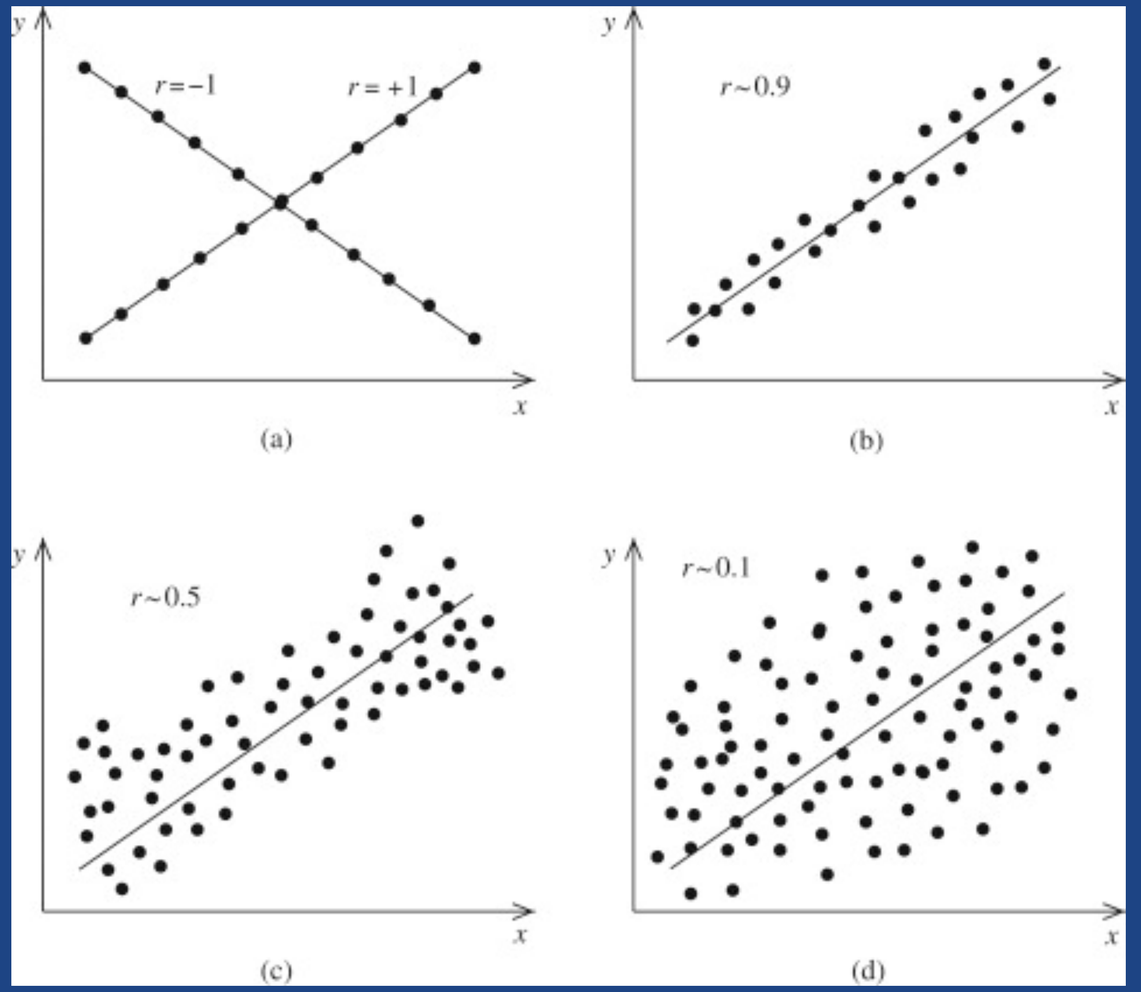
Advanced settings

Please see the advanced settings documentation page.

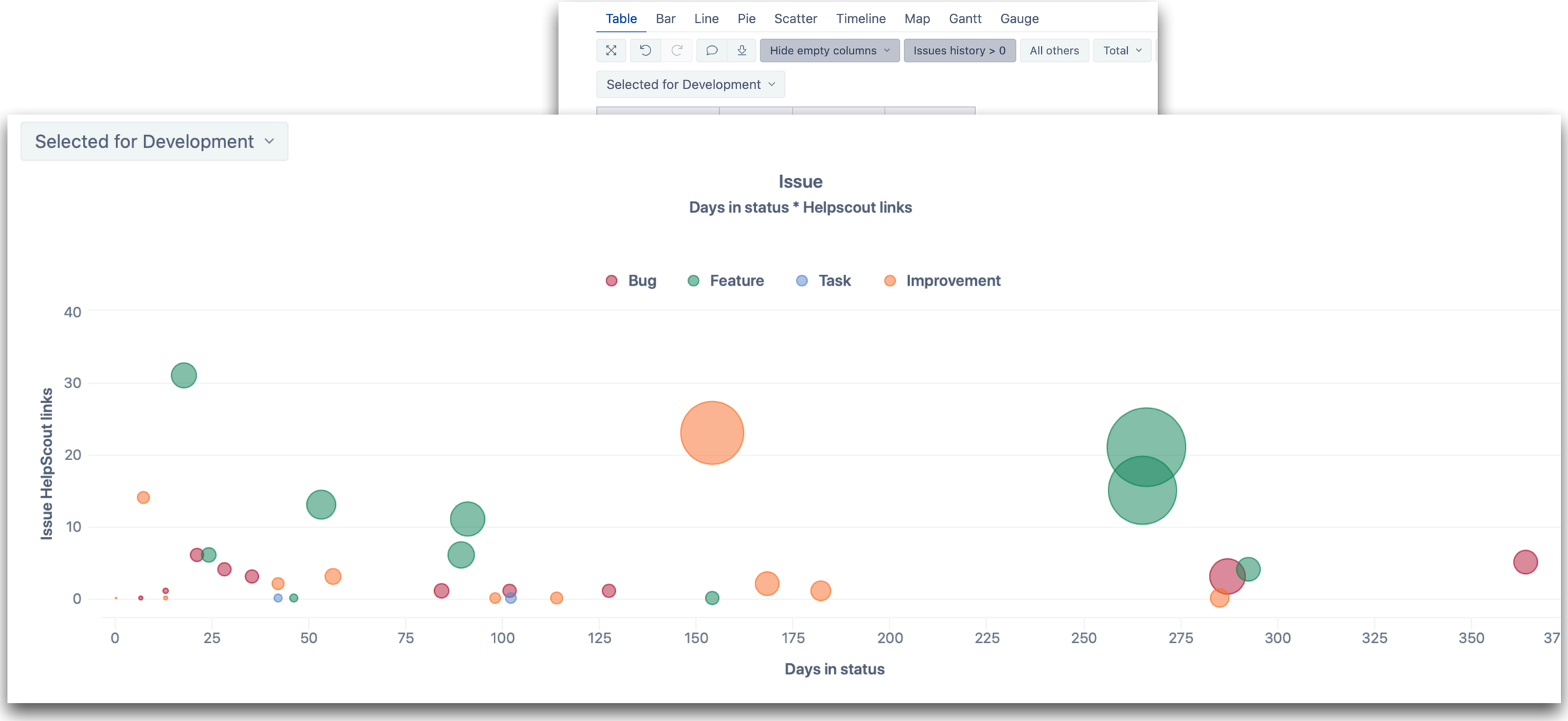
```
[jira.customfield_in_progress_intervals]
name = "In Progress intervals"
data_type = "decimal"
time_unit = "seconds"
time_interval = "duration"
intervals = "/10"
interval_unit = "days"
measure = true
dimension = true
javascript_code = '''
var transitto = Date.parse(issue.fields.created);
var statuslist = ["In Progress"];
var sec_in_statuses = null;
var transitfrom = null;
issue.changelog.histories.forEach(function(history){
  history.items.forEach(function(historyItem){
    if (historyItem.field == "status") {
```

Custom field	Import as dimension	Import as measure	Import as property	Import value changes
[redacted]	☑		☑	☑
[redacted]			☐	
[redacted]	☐		☐	
In Progress intervals	☑	☑		
[redacted]	☐		☐	
[redacted]		☑	☑	

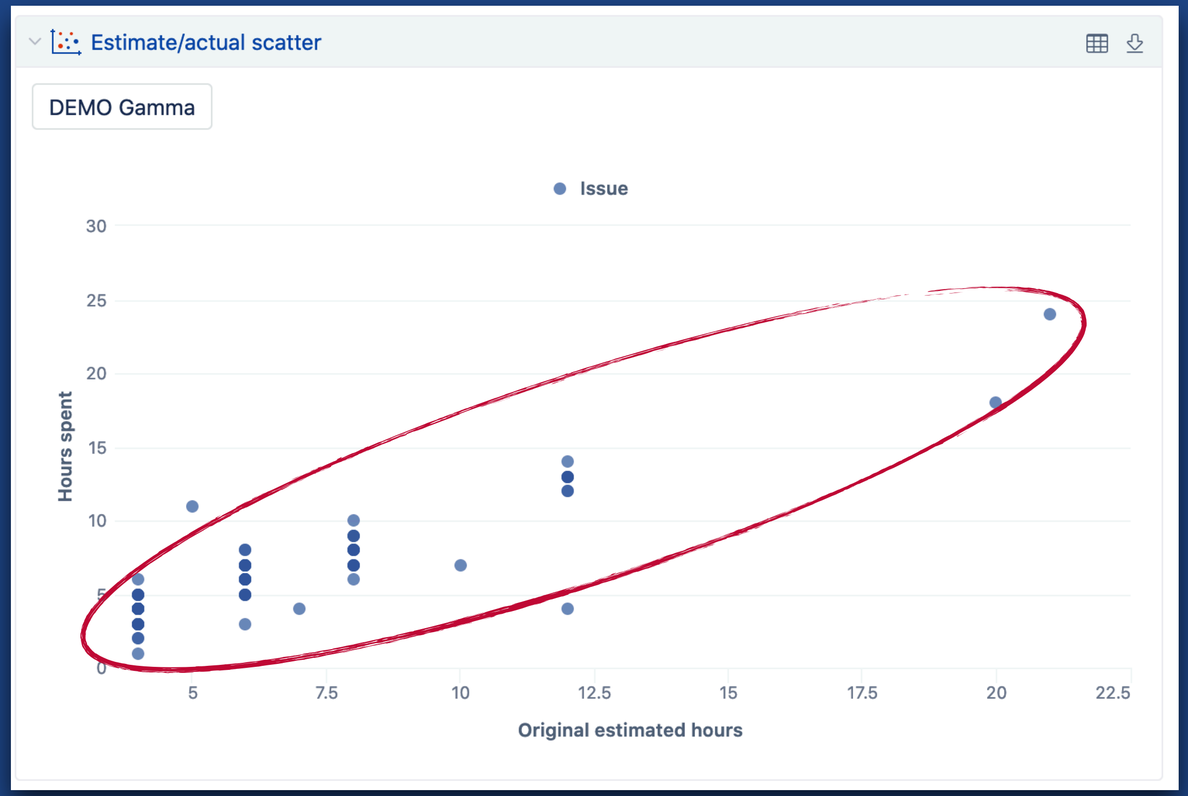
Showing correlation with scatter chart

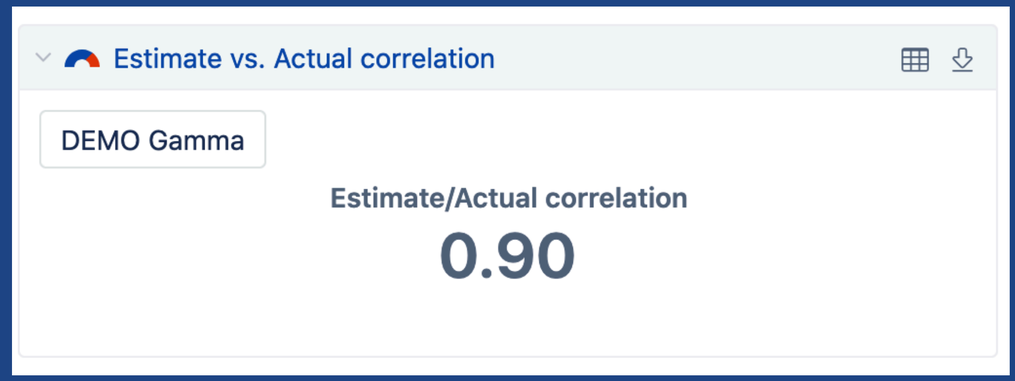


Scatter chart



Use cases of correlation






```
Correlation(
  Filter(Descendants([Issue].CurrentMember,[Issue].[Issue]),
  [Measures].[Hours spent]>0
  AND
  [Measures].[Total resolution days]>0
  ),
  [Measures].[Hours spent],
  [Measures].[Total resolution days]
)
```

Using MDX in the statistical calculations

More MDX statistical functions

Percentile

Quartile, Median

Deviation

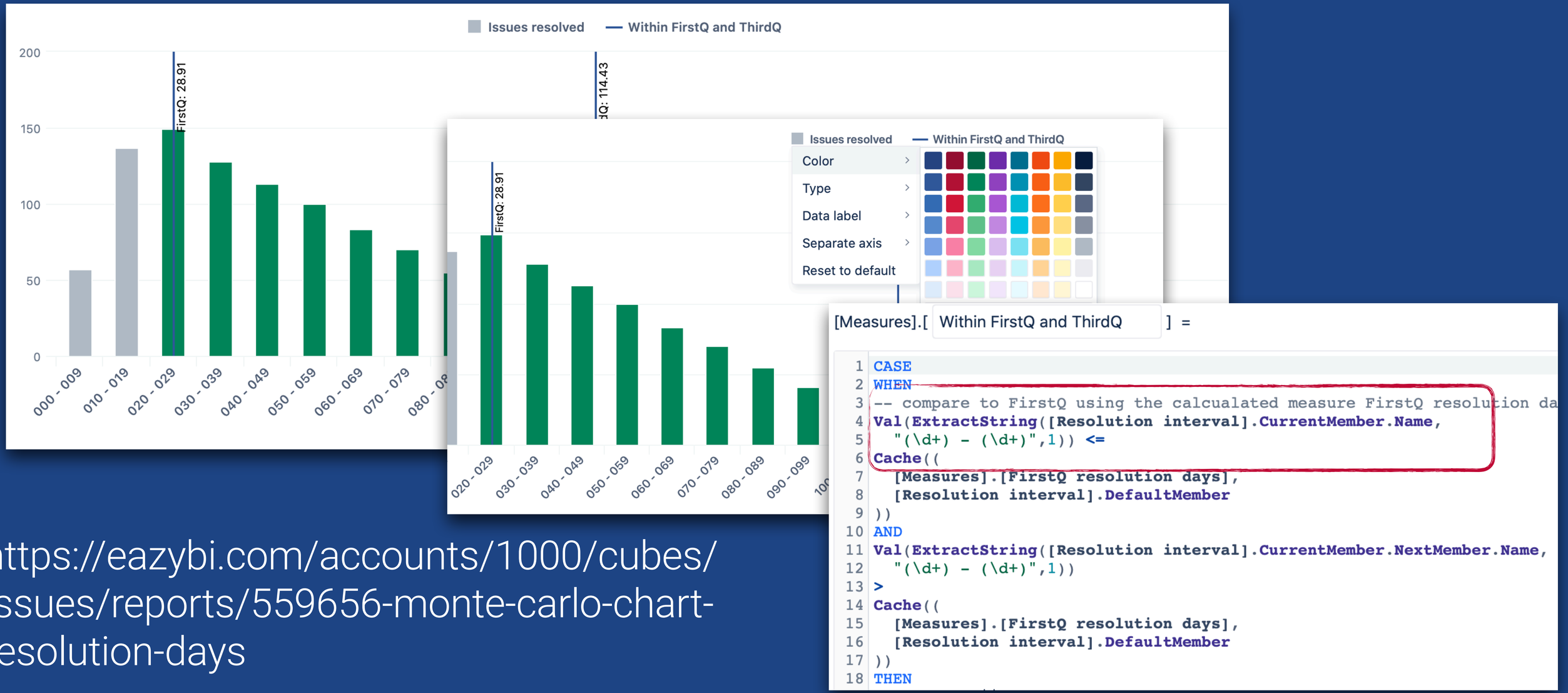
StdDev, Variance

Linear regression

LinRegPoint, LinRegSlope,
LinRegVariance

https://mondrian.pentaho.com/documentation/mdx.php

Monte Carlo chart



https://eazybi.com/accounts/1000/cubes/Issues/reports/559656-monte-carlo-chart-resolution-days

Six sigma report

"Not too many cases deviate from the average for too much"

95% of cases should not deviate from the mean for more than three times the standard deviation

[Measures].[Sigma] =

```
1 Stdev(
2   Filter(Descendants([Issue].CurrentMember,[Issue].[Issue]),
3     not IsEmpty([Measures].[Item value])
4   ),
5   [Measures].[Item value]
6 )
```

[Measures].[Six-sigma percentage] =

```
1  NonZero(Count(
2    Filter(Descendants([Issue].CurrentMember,[Issue].[Issue]),
3      Abs([Measures].[Item value]-
4          ([Measures].[Average Item value],
5           [Issue].CurrentHierarchy.DefaultMember)
6      )
7      <
8      3*([Measures].[Sigma],
9      [Issue].CurrentHierarchy.DefaultMember)
10    AND
11    [Measures].[Item count]>0
12   )
13 ))
14 /
15 [Measures].[Item count]
```

Pages
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Columns
Measures

Rows
Nonempty
Project

Table | Bar | Line | Pie | Scatter | Timeline | Map | Gantt | Gauge

Total | Freeze header

	Item count	Average Item value	Sigma	Six-sigma percentage
+ DEMO Alfa	179	79.94	191.69	96.65%
+ DEMO Beta	171	45.36	46.90	98.25%
+ DEMO Gamma	171	57.60	134.78	98.25%
+ Demo	15	57.42	87.68	93.33%

Things to remember

- **Add calculated** feature for report level standard measures
- **Interval dimensions** and **Scatter charts**
- A lot of **MDX functions** for statistics

Questions?

community.eazybi.com

support@eazybi.com

Thank you!