ARTG 6900 Week 3

Using crossfilter.js to Manipulate Data

This Week

Using crossfilter.js to filter, group, and reduce data
- Create and filter dimensions
- Create and reduce by groups

Additional topics
- Combine crossfilter with user interaction
- Thinking about modular code structure

Crossfilter basics

Crossfilter.js

Used to explore large, multivariate datasets

Extrmely fast!

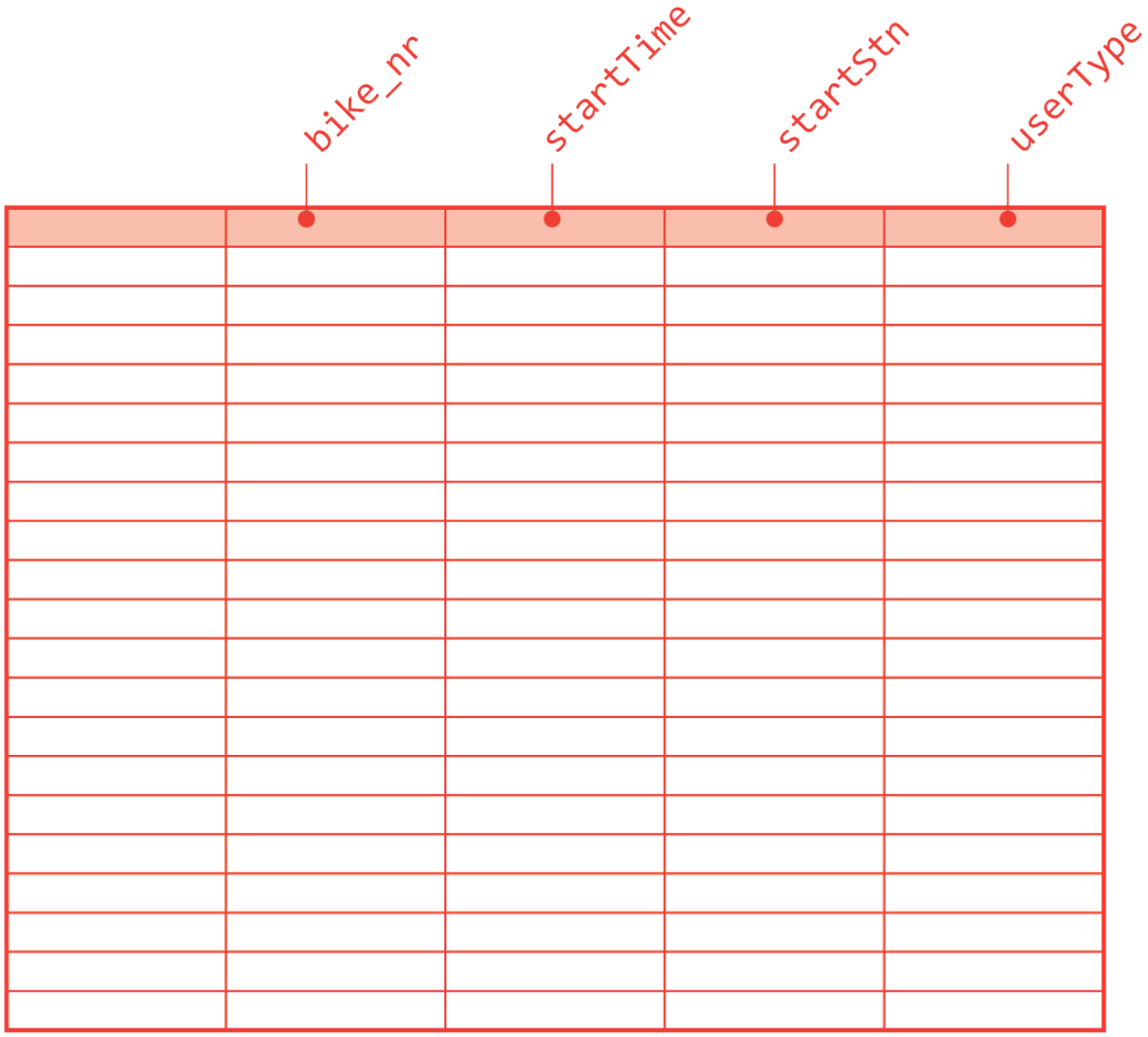
Crossfilter.js

To create a crossfilter, pass an array into a the crossfilter constructor. The array must represent some multi-variate dataset:

```
var cf = crossfilter(array);
```

The crossfilter object itself has several methods

```
cf.add(row)
cf.remove()
cf.size()
cf.groupAll()
```


bike_nr
startTime
startStn
userType

Dimensions : Filtering

To filter records in the crossfilter based on a certain dimension

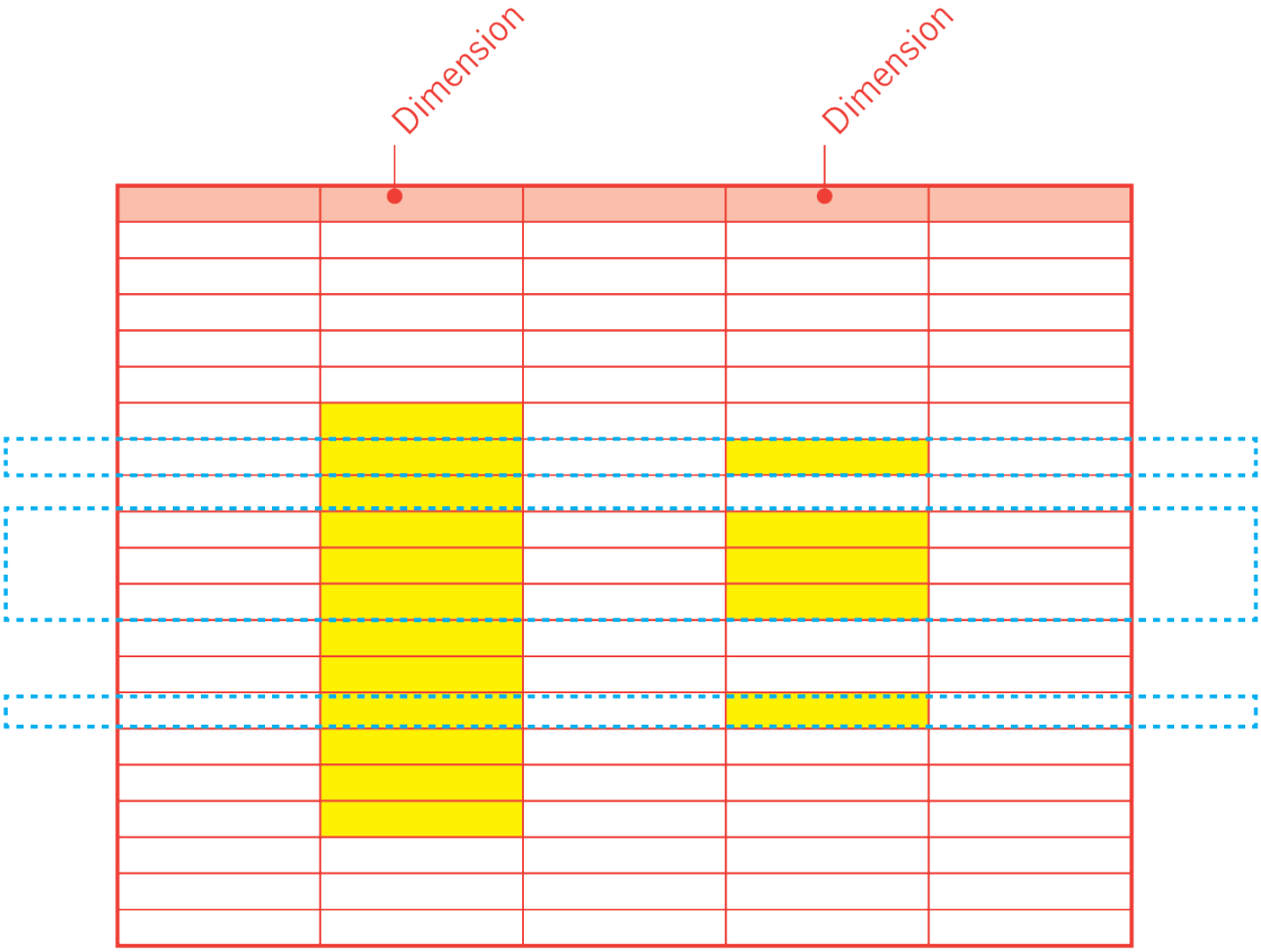
```
dimension.filter()
dimension.filterExact(value)
dimension.filterRange([v0,v1])
dimension.filterFunction(function)
```

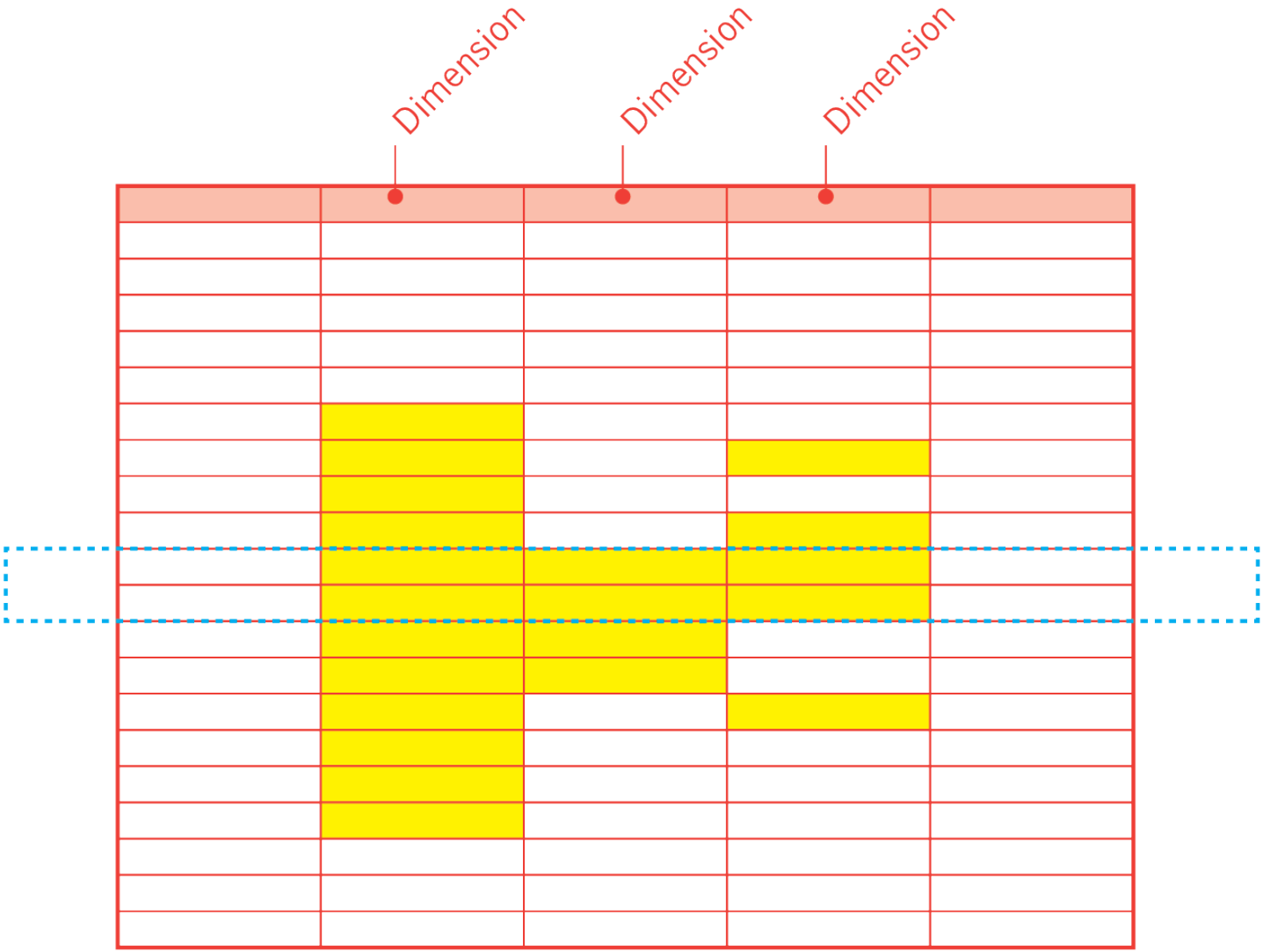
To undo the filter

```
dimension.filterAll()
dimension.filter(null)
```

Dimensions : Filtering

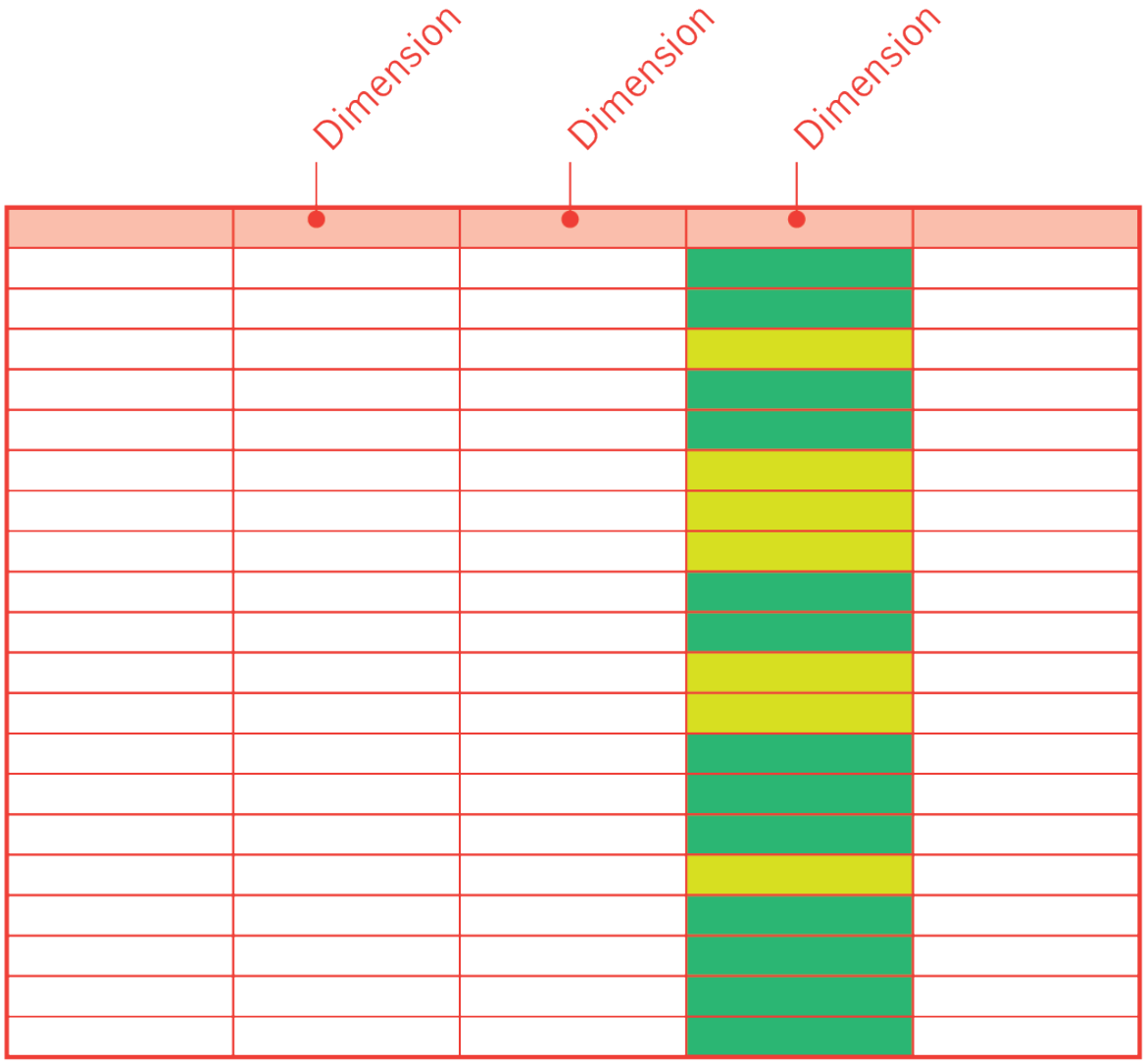
There can only be one filter on one dimension. However, filters on different dimensions are additive

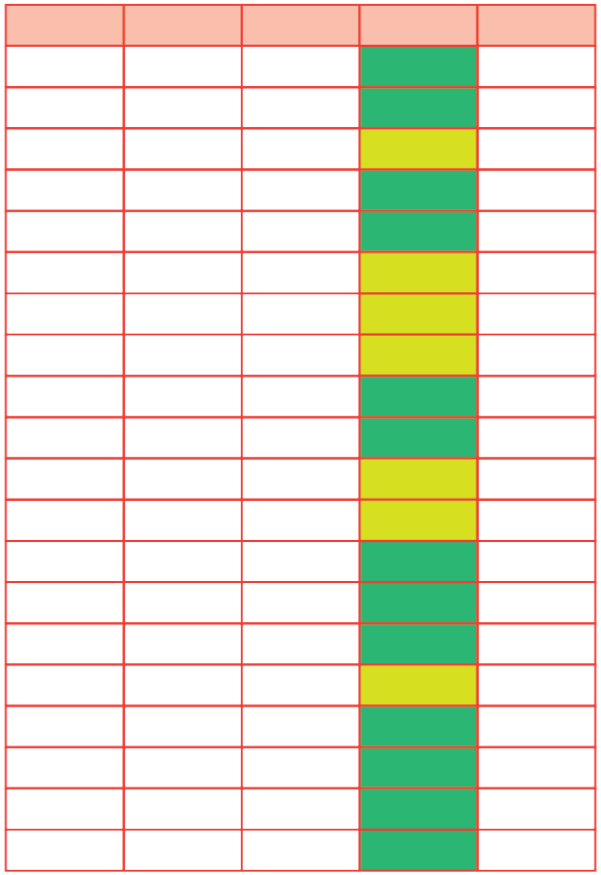

Dimension
Dimension


Dimension
Dimension
Dimension

Grouping

Based on a criteria of our own choosing, similar records can be grouped (and reduced) along a given dimension.


Dimension
Dimension
Dimension

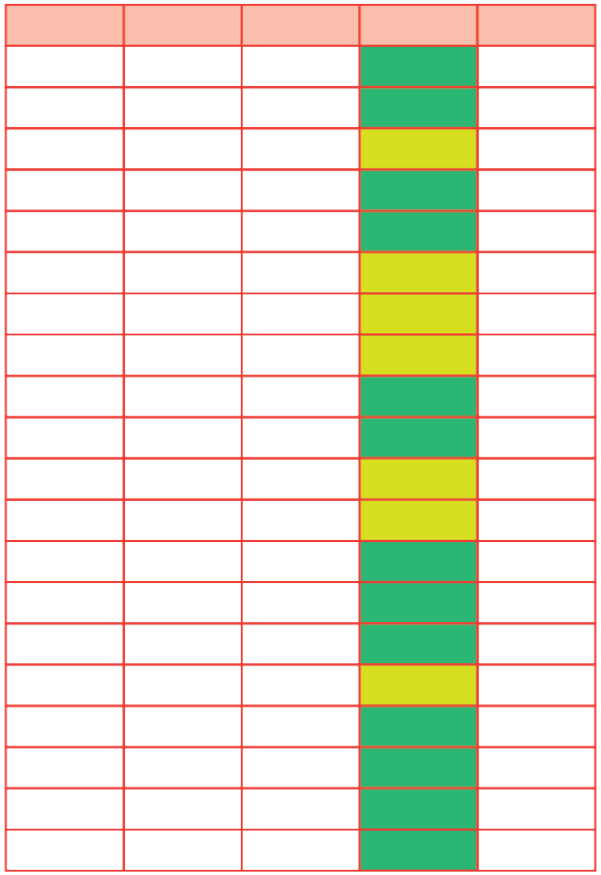


Group

key	value
	13
	7

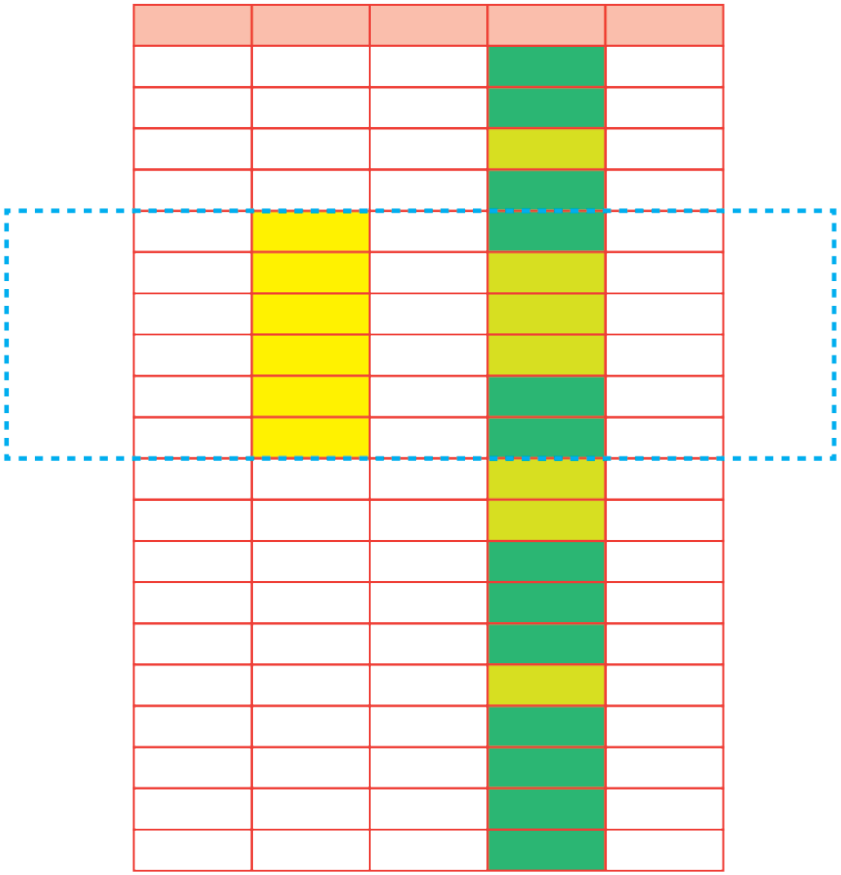
Grouping

A group on dimension A will observe any filters active on dimensions B, C, D...



Group

key	value
	13
	7



Group

key	value
	3
	3

Grouping : Reducing

By default, groups will reduce by count. We can implement other custom reduce functions.

```
group.reduce(add, remove, initial)
```