Summary : Tableau Intermediate to Advance

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Data Source: https://www.kaggle.com/vjchoudhary7/hr-analytics-case-study?select=employee_survey_data.csv

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Table of Content

01

Set, Group, Bin & Parameter

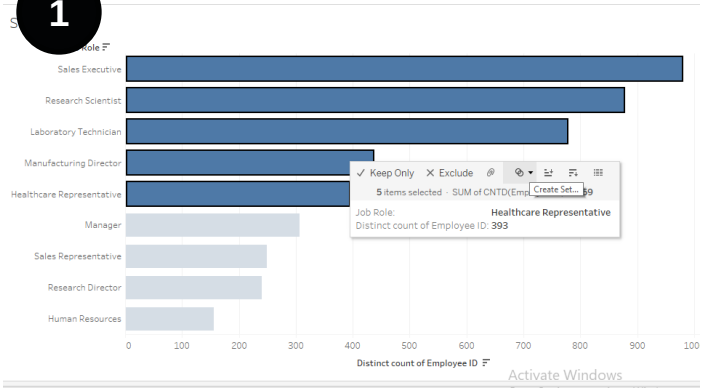
★★★★★

DEFINITION

- **Group** are created to combine similar members in a field. Grouping in Tableau refers to combining multiple members in a single dimension into higher level categories.
- **Bins** combine a set of data into groups of equal size which makes the data and the view systematic.
- **Sets** are custom fields that define the subset of data based on some conditions. Sets can be Static as well as dynamic. The members of a **static set** do not change, they are fixed even when the data changes. The members of the **dynamic set** changes when the data changes.
- **Parameter** holds a value such as an integer, date or string value that can be used to replace a constant value in a calculation. A parameter is made to make the view more user interactive.

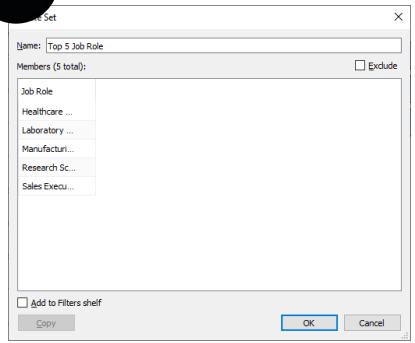
SET : 1. Static Set

1



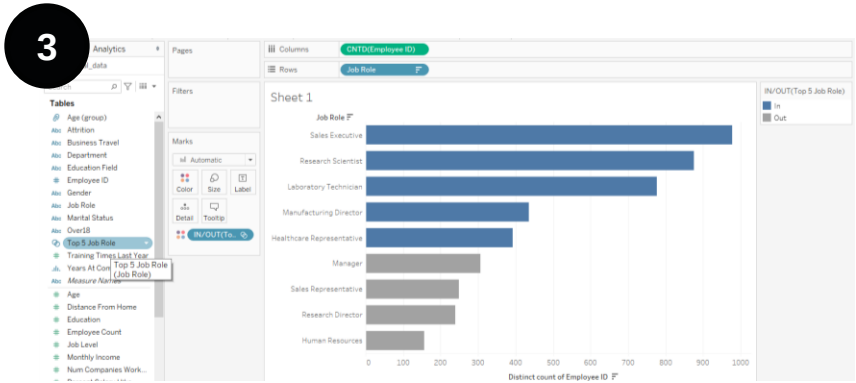
Select rows –
Click create set

2



Name the set –
OK

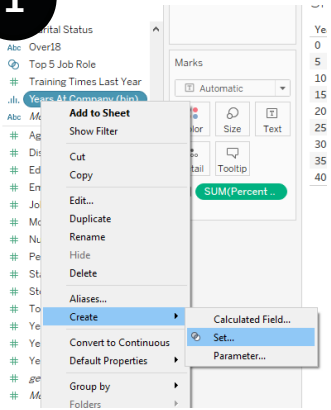
3



Drag new set to
color pane

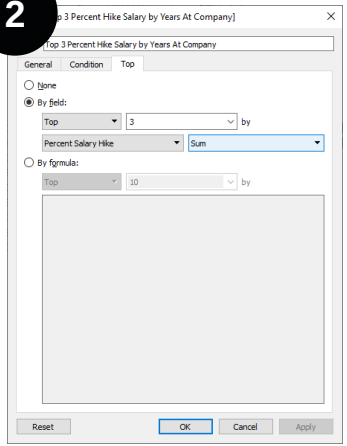
SET : 2. Dynamic Set

1



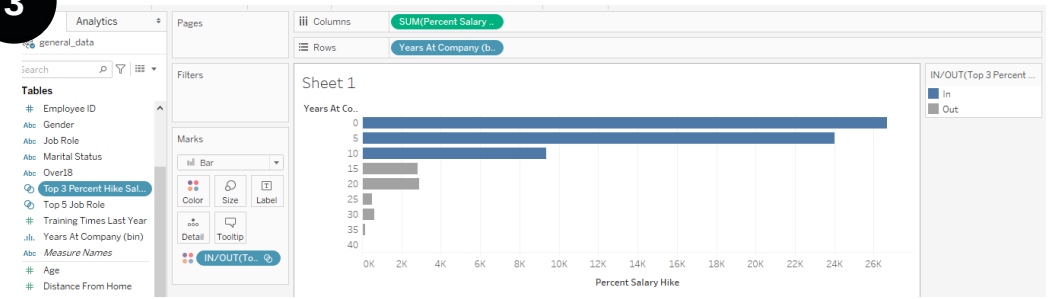
Click column – Create - Set

2



Name the set – Click tab Top – Choose by field

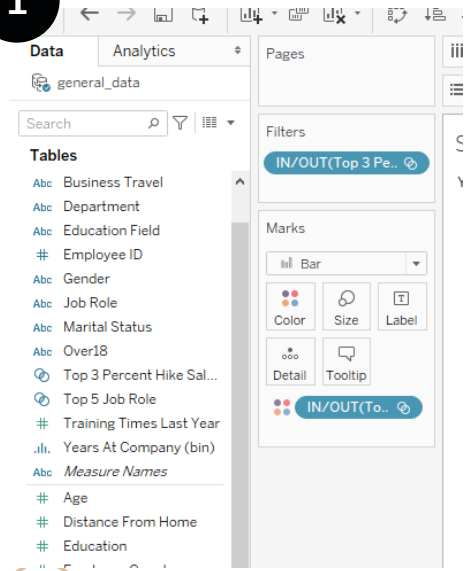
3



Visualize set

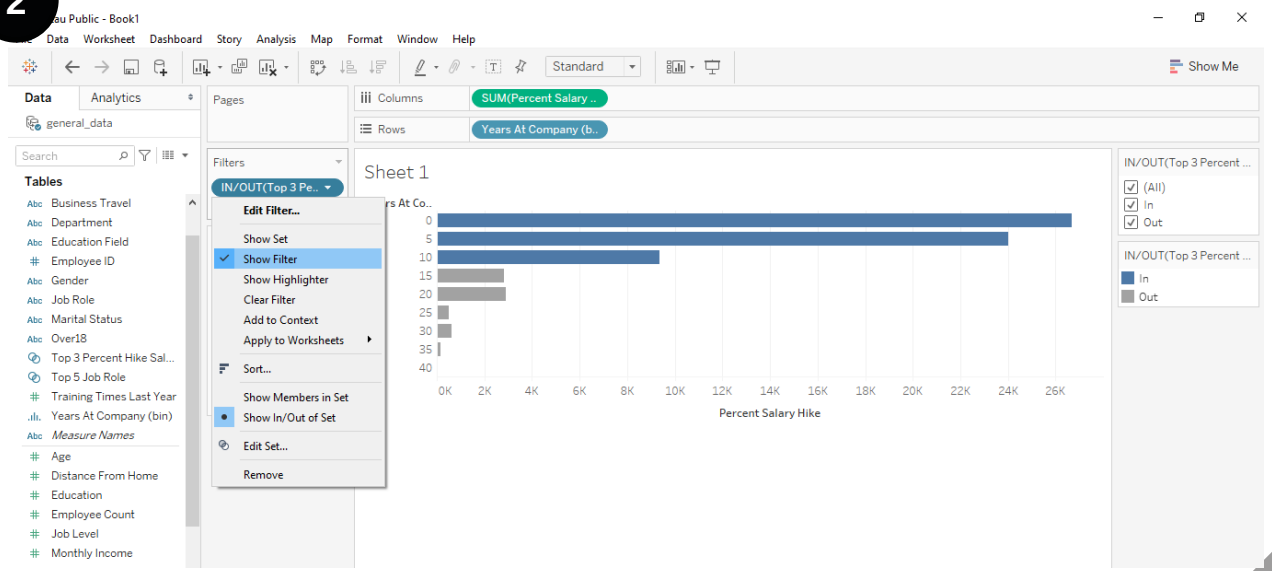
SET : 3. Set As Filter

1



Hold ctrl and drag in/out to pane filters

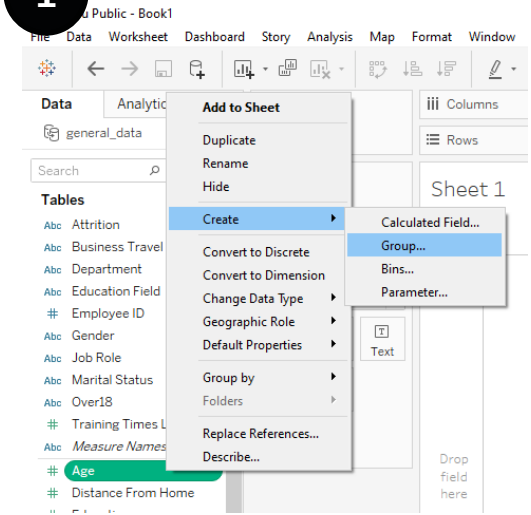
2



Click in/out in pane filters – Click show filter

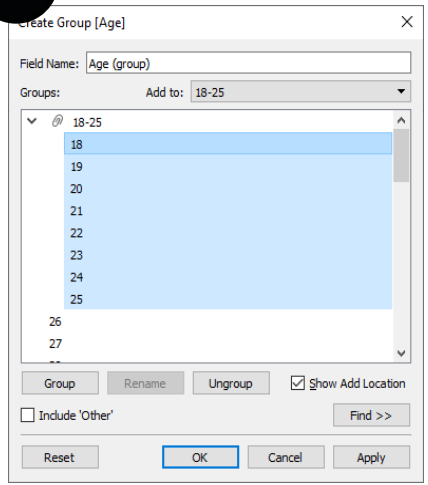
GROUP

1



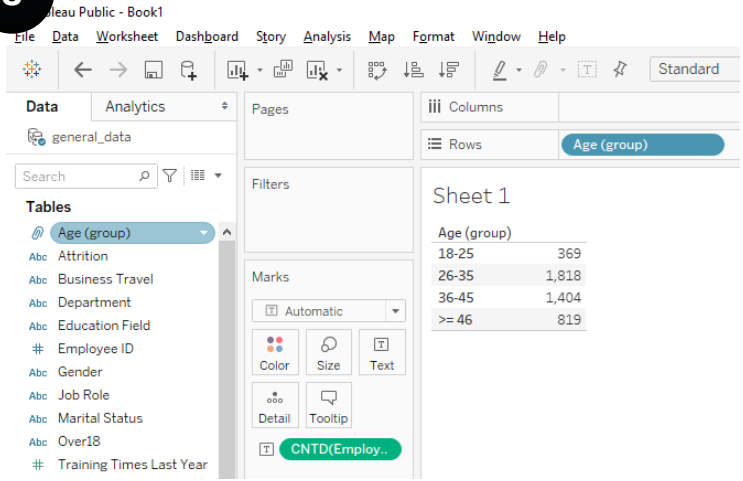
Click column – Create – Group

2



Select value – Click group – Name the group

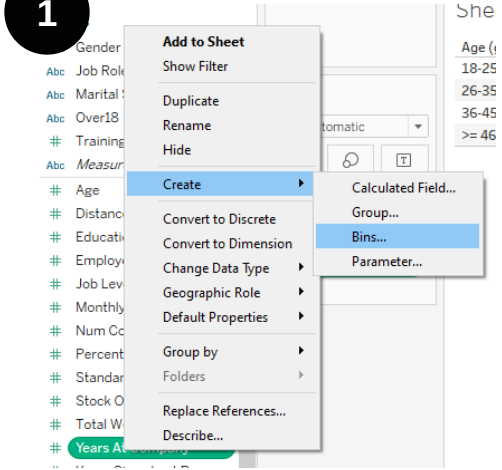
3



Visualize group data

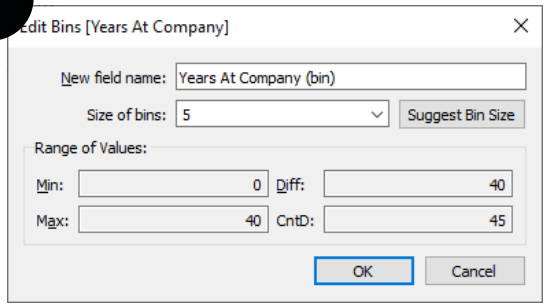
BIN

1



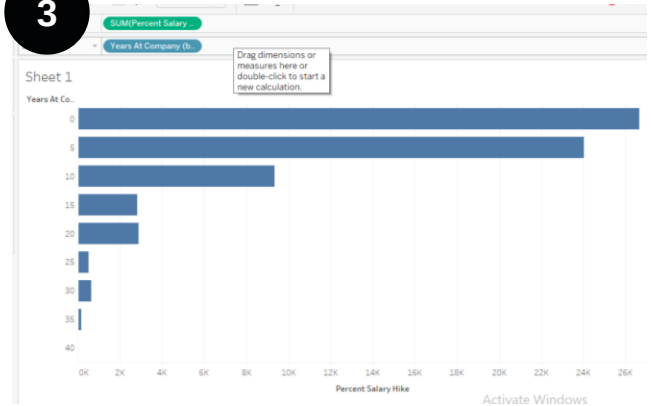
Click column – Create – Bins

2



Set size of bins – OK

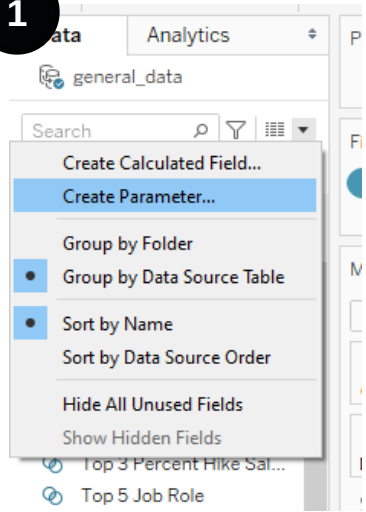
3



Visualize bins data

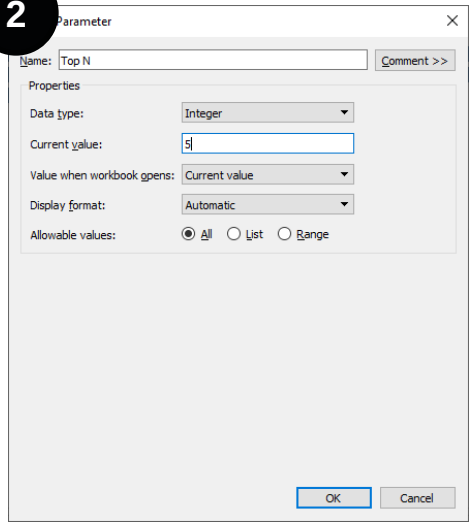
PARAMETER

1



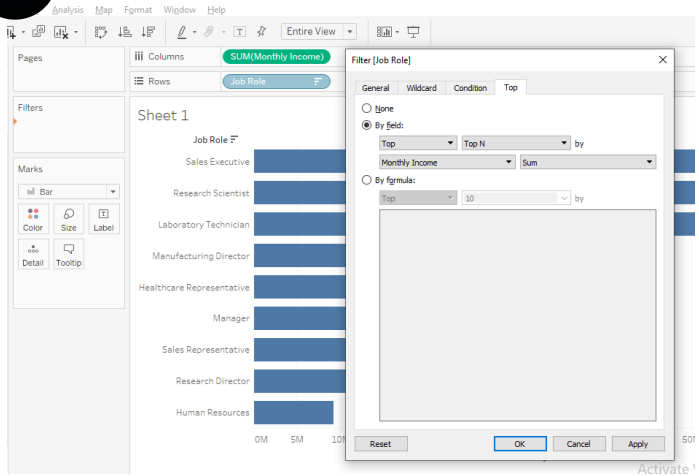
Click create parameter

2



Name the parameter – setting data type, current value - OK

3

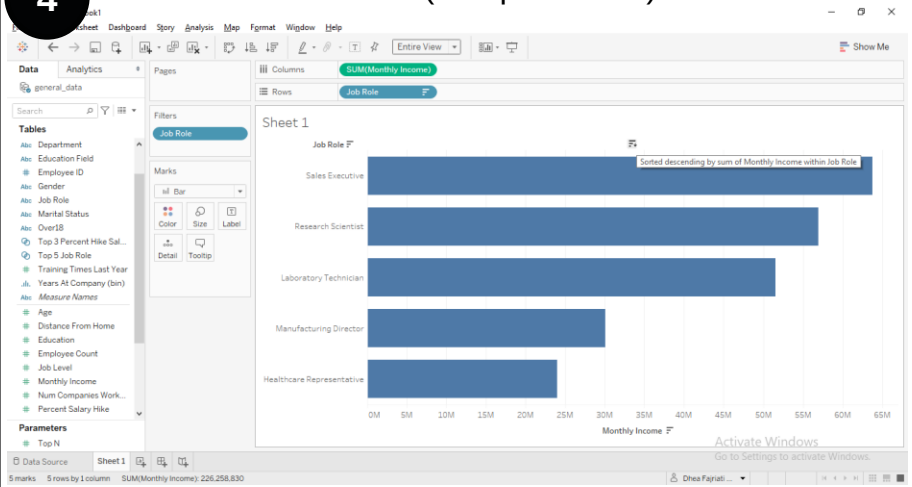


Drag Job Role to filters pane – setting filter – Choose tab Top – Choose by field

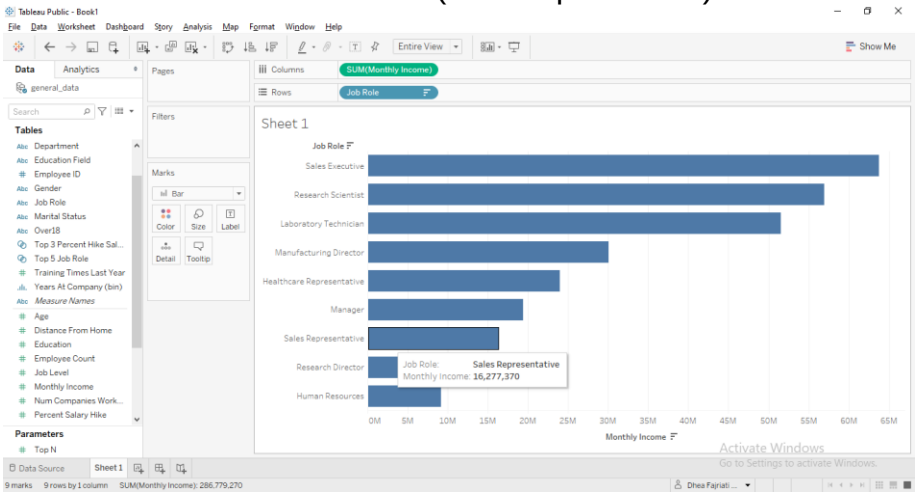
PARAMETER

4

After (with paramater)



Before (without paramater)

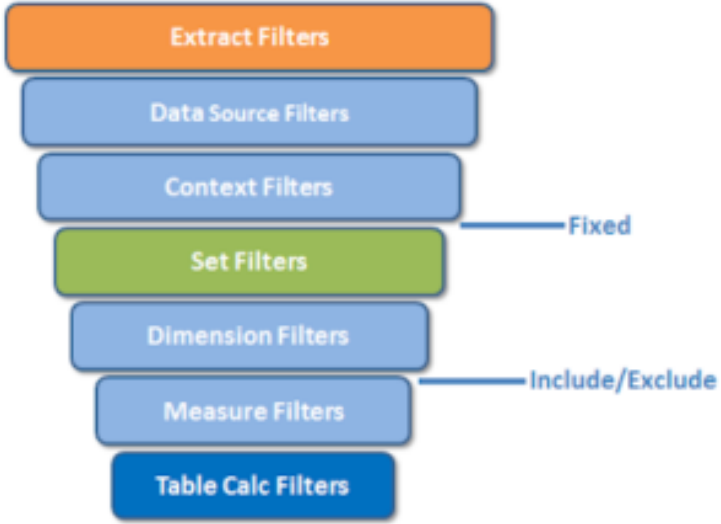


02

Calculated Fields with Level of Details

★★★★★

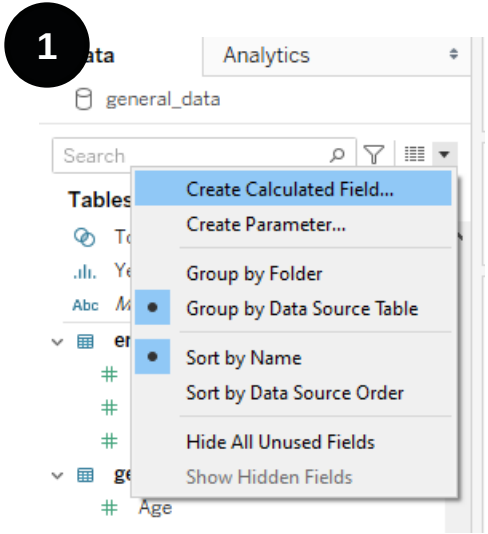
TABLEAU FILTERS HIERARCHY



- **Fixed expressions** aggregate the value only at the dimensions specified in the calculation and doesn't take into consideration the dimensions in the view.
- **Include expressions** is used to compute the value using the specified dimension that's not present in the view.
- **Exclude expressions** is pretty much the opposite of INCLUDE. Instead of adding more dimensions, you're getting rid of them

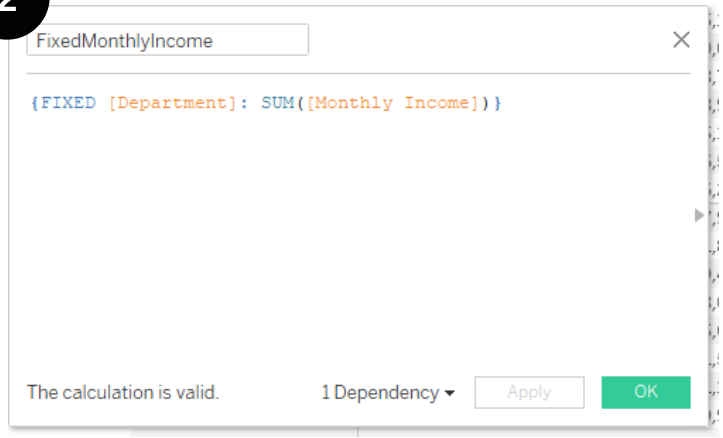
LEVEL OF DETAILS : Fixed

1



Click create calculated field

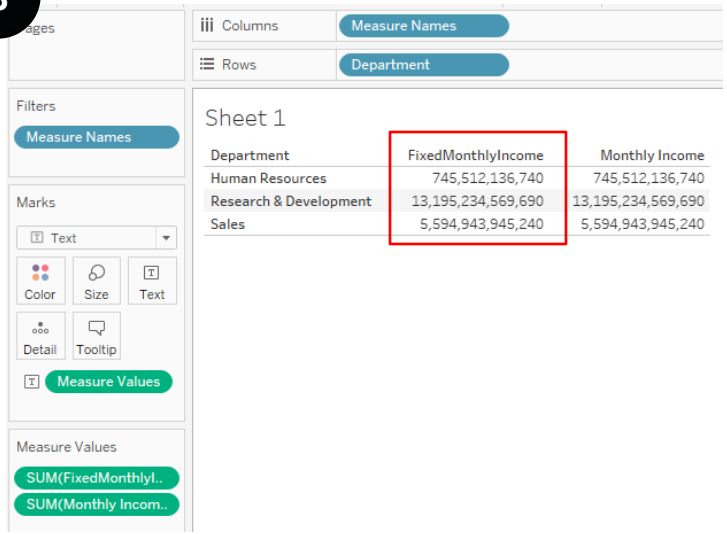
2

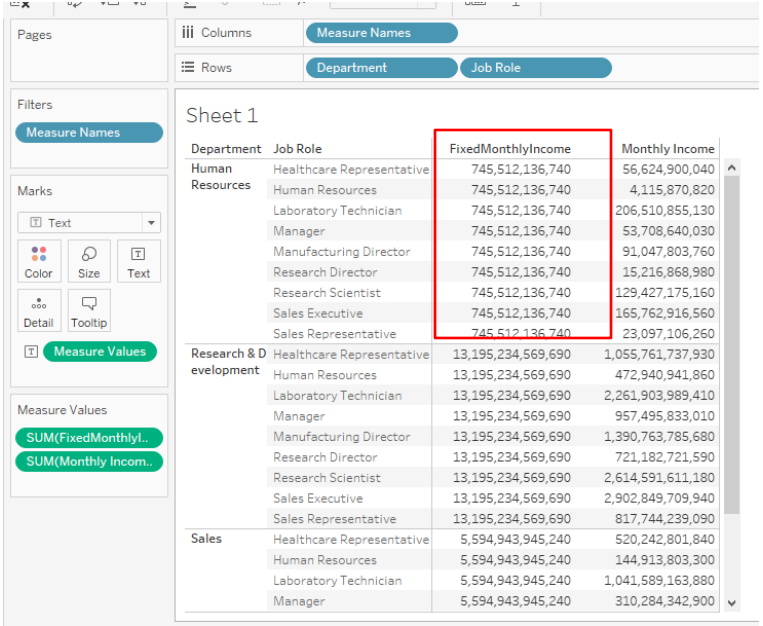


For each Department, find the sum of monthly income

LEVEL OF DETAILS : Fixed

3

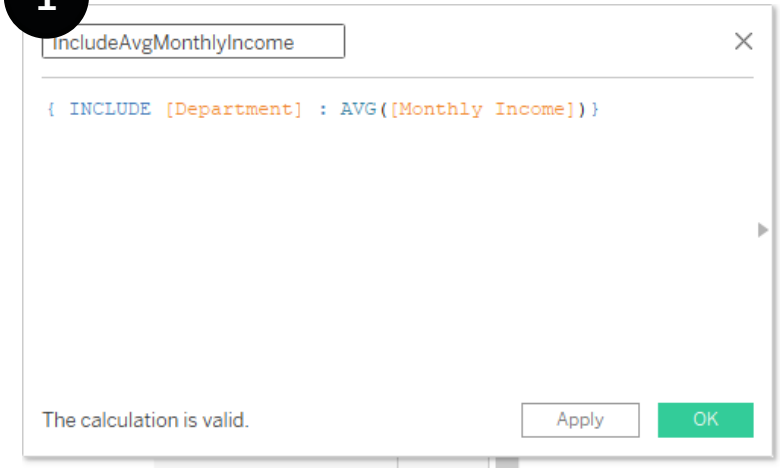




Even if you add new dimension in the view, the measure will be calculated based on the dimensions specified in the expression. This means that the changes in the view do not impact the aggregation of the measure Monthly Income, which is the feature of a fixed LOD expression.

LEVEL OF DETAILS : Include

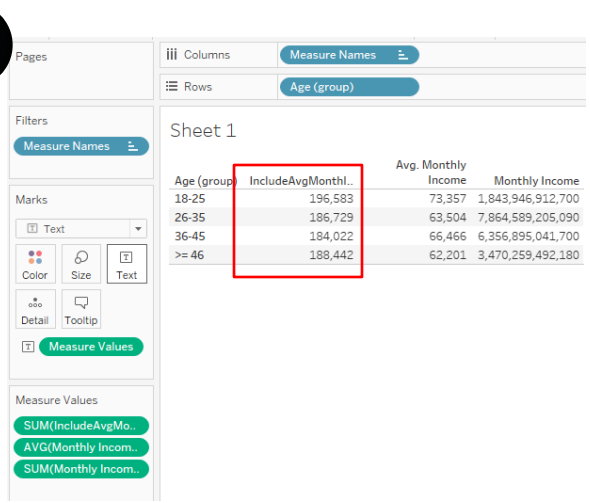
1



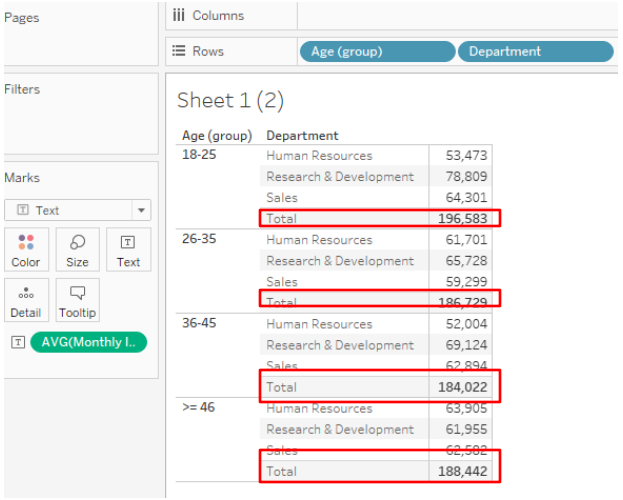
You can translate INCLUDE LOD as For every dimension in the view AND every listed dimension (Department), calculate the aggregate expression.

LEVEL OF DETAILS : Include

2



With include



Without include
Total = sum of each department's average monthly income

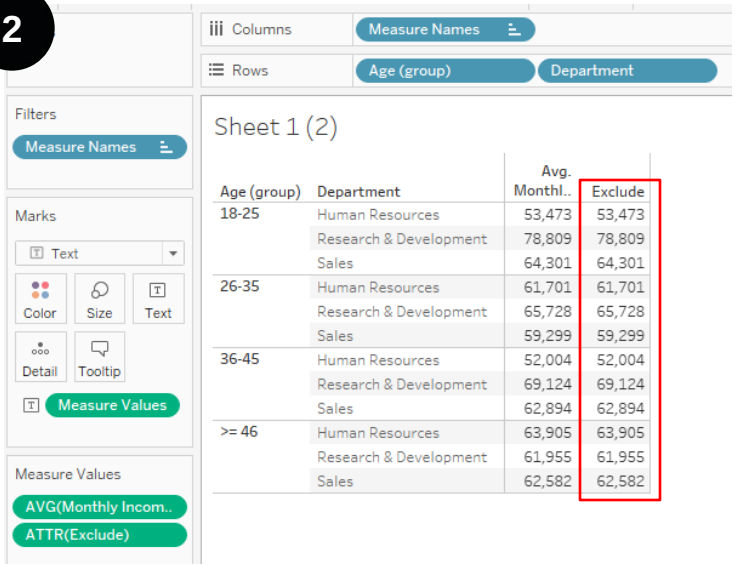
LEVEL OF DETAILS : Exclude

1

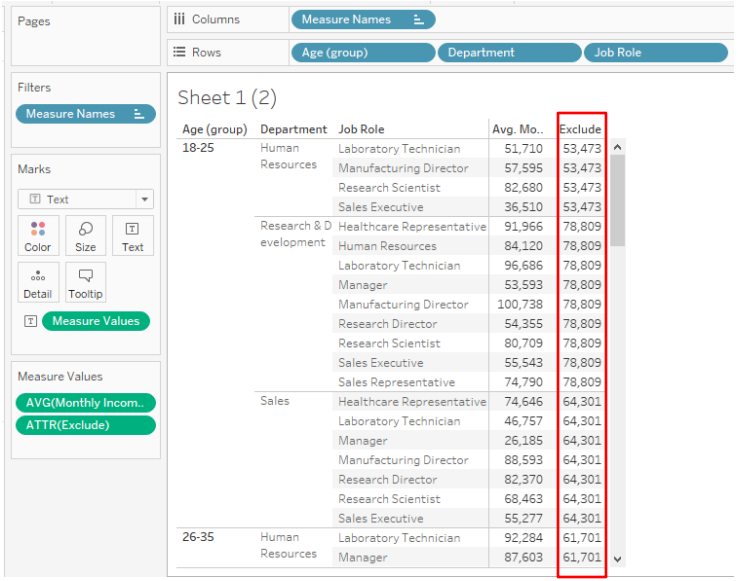
You can translate EXCLUDE LOD as For every dimension in the view EXCEPT the listed dimension (Job Role), calculate the aggregate expression’

LEVEL OF DETAILS : Exclude

2



Age (group)	Department	Avg. Monthl..	Exclude
18-25	Human Resources	53,473	53,473
	Research & Development	78,809	78,809
	Sales	64,301	64,301
26-35	Human Resources	61,701	61,701
	Research & Development	65,728	65,728
	Sales	59,299	59,299
36-45	Human Resources	52,004	52,004
	Research & Development	69,124	69,124
	Sales	62,894	62,894
>= 46	Human Resources	63,905	63,905
	Research & Development	61,955	61,955
	Sales	62,582	62,582



Age (group)	Department	Job Role	Avg. Mo..	Exclude
18-25	Human Resources	Laboratory Technician	51,710	53,473
		Manufacturing Director	57,595	53,473
		Research Scientist	82,680	53,473
		Sales Executive	36,510	53,473
	Research & Development	Healthcare Representative	91,966	78,809
		Human Resources	84,120	78,809
		Laboratory Technician	96,686	78,809
		Manager	53,593	78,809
		Manufacturing Director	100,738	78,809
		Research Director	54,355	78,809
		Research Scientist	80,709	78,809
		Sales Executive	55,543	78,809
		Sales Representative	74,790	78,809
	Sales	Healthcare Representative	74,646	64,301
		Laboratory Technician	46,757	64,301
		Manager	26,185	64,301
		Manufacturing Director	88,593	64,301
		Research Director	82,370	64,301
		Research Scientist	68,463	64,301
		Sales Executive	55,277	64,301
26-35	Human Resources	Laboratory Technician	92,284	61,701
		Manager	87,603	61,701

In the above output, you can see that the values of the excluded expression are replicated because job role exclude

03

Table Calculation

DEFINITION

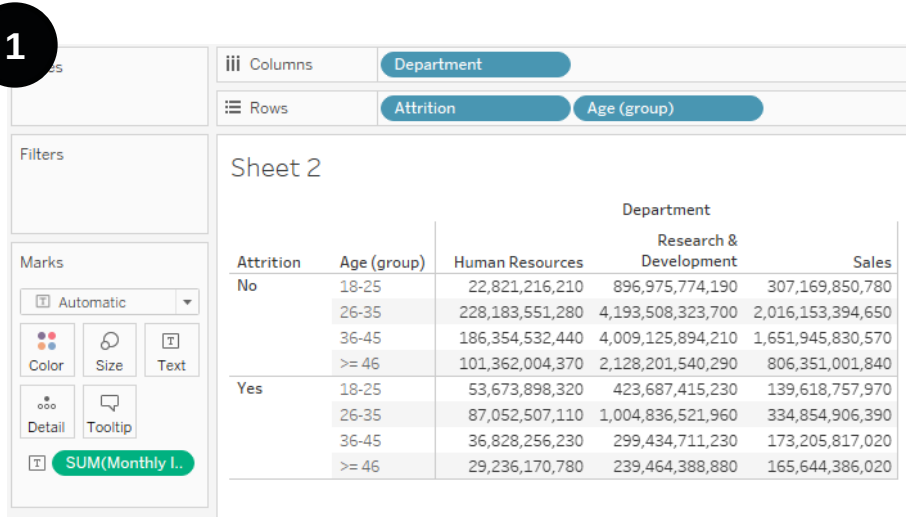
Table calculations are a special type of calculated field within Tableau Desktop that apply transformations (i.e. additional math) on values within a visualization. Common examples of table calculations include running sum, moving average, and percent of total.

Table calculations are defined by how they are

1. **Partitioning (Scope)** is deciding where table calculations start and end. Within Tableau, partitioning is denoted by unchecked checkboxes within the Edit Table Calculation window.
2. **Addressing (Direction)** defines the direction of the calculation. Addressing is trickier to understand because it describes what dimensions are referenced ('compute on the basis of what?') and the direction they will be used (order matters!).

EXAMPLE: Percent of Total

1

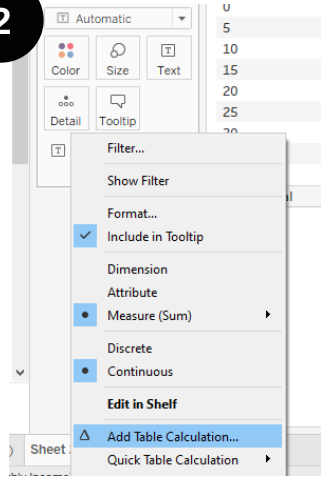


Sheet 2

		Department		
Attrition	Age (group)	Human Resources	Research & Development	Sales
No	18-25	22,821,216,210	896,975,774,190	307,169,850,780
	26-35	228,183,551,280	4,193,508,323,700	2,016,153,394,650
	36-45	186,354,532,440	4,009,125,894,210	1,651,945,830,570
	>= 46	101,362,004,370	2,128,201,540,290	806,351,001,840
Yes	18-25	53,673,898,320	423,687,415,230	139,618,757,970
	26-35	87,052,507,110	1,004,836,521,960	334,854,906,390
	36-45	36,828,256,230	299,434,711,230	173,205,817,020
	>= 46	29,236,170,780	239,464,388,880	165,644,386,020

Create monthly income table by age and department

2

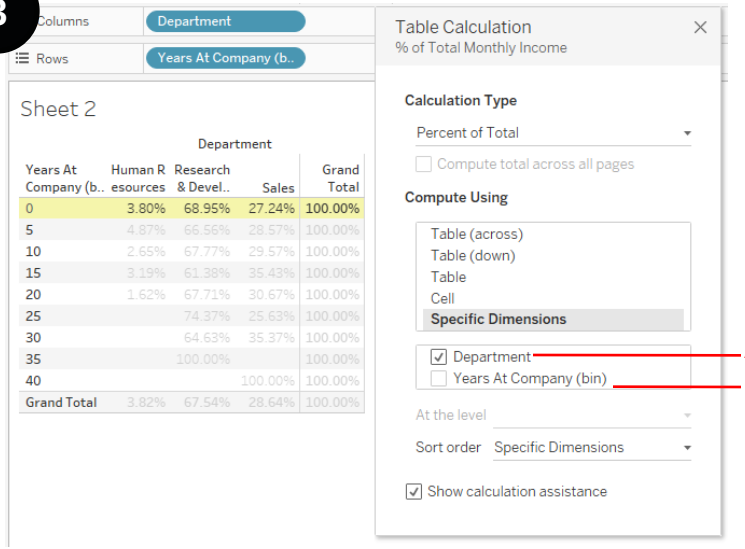


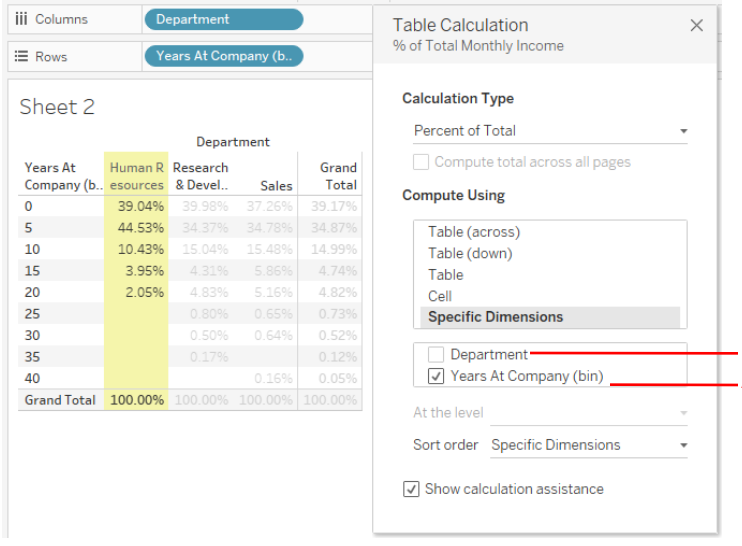
Click SUM(Monthly Income – Click Add Table Calculation

EXAMPLE: Percent of Total

See the difference

3





Calculation Type = Percent of Total

THANK YOU

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