

# **Tableau**

# CHEAT SHEET









## **Tableau Introduction**

BUSINESS INTELLIGENCE (BI)

Refers to technical infrastructure that collects, stores, and analyzes the data produced by a company's activities to help making better data-driven decisions

DATA **VISULIZATIONS** 

**TABLEAU** 

Powerful data visualization and business intelligence tool that allows users to connect, visualize, and share data in a way that provides insights and facilitates decision-making

The process of converting raw data into visuals and graphs.

such as charts, plots, or maps, to tell a meaningful story using

**AUTOMATION** 











## **VISUALS** آلاً 🕜 .X

## **Tableau Interface**





**DATA SOURCE** 

Connect Data, Build data model and combine tables using physical and logical lavers



Desktop

Single view in workbook dedicated to create data visualizations, filters. legends, and more



A collection of multiple worksheets and objects to provide a comprehensive view of the data



A collection of multiple worksheets and dashboards that describe a data sotry

TABLEAU PREP

Data Engineering tool

prepare data to be ready

**TABLEAU** 

used to transfer and

for data visualization

## **Tableau Products Suite**

**TABLEAU** 

(Free) Tool used to create

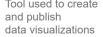
**DESKTOP PUBLIC** 



### TABLEAU DESKTOP **TABLEAU**

Tool used to create and publish











**TABLEAU** 

MOBILE



data visualizations

and publish

Tableau-cloud based platform to share and host data visualization





**TABLEAU** READER

and host

data visualization

Software allows users to Mobile App allows users view visualization to view visualization



You can learn Tableau completely for Free Tableau Public Desktop & Tableau Public

## **Tableau Data Model**

Every data source that you create in Tableau has a data model. You can think of a data model as a diagram that tells Tableau how it should query data in the connected database tables

### PHYSICAL LAYER

Layer under the logical layer. Tables can be combined here using JOINs and UNIONs

### LOGICAL LAYER

Default view in data source. Tables can be combined here only using relationships

## **COMBINE MTHODS**



## JOINS

Combines the columns of two tables into a single table in the physical layer level. Tables must exist within the same data source



Describes how two tables relate to each other based on common fields but does not merge them at the logical layer level. Tables must exist within the same data source

UNION

Combines the  $\underline{\text{rows}}$  of two tables into a single table in the physical layer level. Tables must exist within the same data source



Combine tables from two multiple data sources on the worksheet level

### JOIN TYPES



Show all matchi records in both























## **Tableau Filters**

### **EXTRACT FILTER**

Filters the data between source system and data source. Reducing the data can improve the performance of your views. Extract filter can be used only in data sources with extract connection

## **CONTEXT FILTER**

When you create a context filter, Tableau generates a temporary table that includes only the data relevant to the filter Context filter can be created individually for each worksheets

### **MEASURE FILTER**

A measure filter is used to filter data based on quantitative measures

Filters the data between data source and worksheets. Reducing the data can improve the performance of your views. Data source filter can be used in data sources with extract or live connection.

## **DATA SOURCE FILTER**

A dimension filter is used to filter data based on categorical variables or dimensions

### TABLE CALC FILTER

You can use table calculations to filter data dynamically based on the result of a computation

- #1 Tip Use extract, data source and context filters to optimize performance
- #3 Tip Avoid using dimensions with 'High' cardinality as quick filters
- #4 Tip Use 'Wildcard Match' option in quick filters for dimensions with 'High' cardinality
- #5 Tip Use 'Apply Button' for quick filters
- #6 Tip Avoid using 'Exclude' in filters
- #7 Tip Minimize the number of quick filters
- #8 Tip Sort and Position the quick filters in logical order
- #9 Tip Don't use 'All' value for filters with 'low' cardinality

#10 Tip Choose the right filter modes for quick filters: Range for dates, List for low cardinality, Dropdown for medium cardinality, and Wildcard Match for high cardinality

# **Organizing Data**



## HIERARCHY

Group related dimensions into a logical tree structure. Hierarchies make it easy to understand data at a high level and drill down easily to specific details to gain a deeper understanding of



Group similar and related members of dimensions into higher-level categories, creating a new dimension for your data



analysis

**SETS** 

Divides data based on specific criteria into two 'In' group includes data points that are part of

the subset. They are members of the set

'Out' group, consists of data points not included in the subset. They are not members of the set



## CLUSTER GROUPS

Cluster groups are another way of grouping data, and they are used in data clustering, which is a statistical technique to group similar data points together



## BINS

Divides data into groups of equally sized containers, leading to a systematic distribution of data, that is usaly used to create histogram chart.

histogram is a chart that shows the frequency of data within a certain range

## **Tableau Metadata**



## DATA TYPES

Every field has data type which is determined by the type of information it contains. The avaiable data types in tableau Whole Number, Decimal Number, String, Date, Date, Time, Boolean, Geographic Role, Image Role, Groups, Cluster Groups, Bins, Sets



## **DIMENSIONS**

Fields above the line in the data pane contain descriptive values (e.g., locations, categories) that can't be aggregated and are usually non-numeric fields. Dimensions are used to define the level of detail (LOD)



## DISCRETE

Blue-colored fields are used to display disconnected and discrete values, creating headers in the view. Continuous fields form a distinct list of values



## **MEASURES**

Number fields below the line in the data pane contain quantitative values (e.g., sales, profits). When dragged into a view, this data is aggregated, a process determined by the dimensions in the view



## **CONTINUOUS**

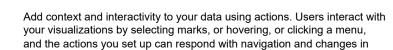
Green-colored fields are used to display unbroken and connected values, creating an axis in the view. Continuous fields form a range of values

# **Tableau Interactivity**



Variables that allow users to replace a fixed constant values Parameters can be used in calculations, filters, text, bins, reference lines







# Go to SHEET

Create hyperlinks to Simplify navigation to external resources. other worksheets, dashboards, or stories e.g.web page, file, or another worksheet

the view



Let users change parameter values by



Use the data from one view to filter data in another to help guide analysis



Let users change the values in a set by directly interacting with marks on

# **Tableau Project Steps**

### **ANALYSE REQUIREMENTS**



- Collect Requirements
- Choose the Right Charts
- Draw Mockups
  - Choose Colors

### **BUILD DATA SOURCE**



- Connect Data
- Create Data Model
- Rename Fields/Tables Check Data Types
- Understand Data

## **BUILD CHARTS**



 Create Calculated Fields & Test Build Chart

Remove Lines & Grids

- Format
  - Clean up Axis & Headers Coloring
- Tooltip



 Build Container Structure Put all Charts together

Draw Mockups for Containers

- Format Distributed Content "Evenly"
  - Format Colors, Sizes..etc
  - Fit "Entire View"
  - Add Legends Add Spaces (Inner/Outer
  - Padding) Add filters & Dynamic

Add Icons

## Links

**Tableau Community** 

**Tableau Viz of the Day Download Tableau Public** 

Sample Data

**Data with Baraa** 

**Baraa's Linkedin** 

**Baraa's Youtube Channel** 

baraa@datawithbaraa.com

## 10 TIPS TO OPTIMIZE FILTERS

- #2 Tip Avoid using "Only relevant values" in quick filters

**DATA SOURCE FILTER** 

\_ HIGHLIGHT Call attention to marks

of interest by coloring

specific marks and

dimming all others







