Tableau CHEAT SHEET

Data with Baraa

Tableau Introduction

TERMS

- **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** — The process of converting raw data into visuals and graphs, such as charts, plots, or maps, to tell a meaningful story using the data
- **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

WHY TABLEAU

- **AUTOMATION**
- **SECURITY** — RLS
- **BIG DATA**
- **VISUALS**

Tableau Interface

- **HOME PAGE** — Landing Page in Tableau Desktop
- **DATA SOURCE** — Connect Data, Build data model and combine tables using physical and logical layers
- **WORKSHEET** — Single view in workbook dedicated to create data visualizations, filters, legends, and more
- **DASHBOARD** — A collection of multiple worksheets and objects to provide a comprehensive view of the data
- **STORY** — A collection of multiple worksheets and dashboards that describe a data sotry

Tableau Products Suite

DEVELOPMENT

- **TABLEAU DESKTOP** — Tool used to create and publish data visualizations
- **TABLEAU DESKTOP PUBLIC** — (Free) Tool used to create and publish data visualizations
- **TABLEAU PREP** — Data Engineering tool used to transfer and prepare data to be ready for data visualization

SHARING

- **TABLEAU SERVER** — In-House platform to share and host data visualization
- **TABLEAU CLOUD** — Tableau-cloud based platform to share and host data visualization
- **TABLEAU PUBLIC** — (Free) Tableau-cloud based platform to share and host data visualization

VIEWING

- **TABLEAU MOBILE** — Mobile App allows users to view visualization
- **TABLEAU READER** — Software allows users 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

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

RELATIONSHIPS
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

DATA BLENDING
Combine tables from two multiple data sources on the worksheet level

JOIN TYPES

INNER JOIN
Show all matching records in both tables

LEFT JOIN
Show all records from left table, and only matching records from right table

RIGHT JOIN
Show all records from right table, and only matching records from left table

FULL JOIN
Show all records from both tables

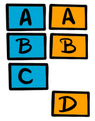

Tableau Filters

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.

DATA SOURCE FILTER
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.

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

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

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

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

10 TIPS TO OPTIMIZE FILTERS

#1 Tip Use extract, data source and context filters to optimize performance
#2 Tip Avoid using "Only relevant values" in quick filters
#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 your data

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

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

SETS
Divides data based on specific criteria into two groups:
'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

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 informaiton 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) in the view

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

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

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

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

ACTIONS
Add context and interactivity to your data using actions. Users interact with your visualizations by selecting marks, or hovering, or clicking a menu, and the actions you set up can respond with navigation and changes in the view

Go to URL
Create hyperlinks to external resources, e.g.web page, file, or another worksheet

Go to SHEET
Simplify navigation to other worksheets, dashboards, or stories

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

HIGHLIGHT
Call attention to marks of interest by coloring specific marks and dimming all others

PARAMETER
Let users change parameter values by directly interacting with marks on a viz

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

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
- Format
  - Remove Lines & Grids
  - Clean up Axis & Headers
  - Coloring
  - Tooltip

BUILD DASHBOARD

- Draw Mockups for Containers
- Build Container Structure
- Put all Charts together
- 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

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