**TABLEAU NOTES**

**Tableau Filters**

* Extract Filters (Filters the amount of records into tableau from data source, only filtered records come into Tableau environment, better performance)
* Data Source Filter (Filters the amount of records from data source after all records are in Tableau environment)
* Quick Filters (Drop down filter for end user)
* Action Filters (click onto an area/region to filter for end user)

Difference between an Extract and a Data Source

* Extract
* Data Source

**Dashboard** is a logical collection of Worksheets

**Ways to optimize Tableau dashboard**

[**Know Your Data at the Database Level**](https://onlinehelp.tableau.com/current/pro/desktop/en-us/perf_data.html?TocPath=Reference|Optimize%20Workbook%20Performance|_____1)

[**Test Your Data and Use Extracts**](https://onlinehelp.tableau.com/current/pro/desktop/en-us/perf_extracts.html?TocPath=Reference|Optimize%20Workbook%20Performance|_____2)

[**Create Efficient Joins and Blends**](https://onlinehelp.tableau.com/current/pro/desktop/en-us/perf_join_blend.html?TocPath=Reference|Optimize%20Workbook%20Performance|_____3)

[**Design for Performance While You Build a View**](https://onlinehelp.tableau.com/current/pro/desktop/en-us/perf_build_view.html?TocPath=Reference|Optimize%20Workbook%20Performance|_____4)

[**Filter Your Data Carefully**](https://onlinehelp.tableau.com/current/pro/desktop/en-us/perf_filter.html?TocPath=Reference|Optimize%20Workbook%20Performance|_____5)

[**Create Efficient Calculations**](https://onlinehelp.tableau.com/current/pro/desktop/en-us/perf_efficient_calcs.html?TocPath=Reference|Optimize%20Workbook%20Performance|_____6)

[**Make Visualizations Faster**](https://onlinehelp.tableau.com/current/pro/desktop/en-us/perf_visualization.html?TocPath=Reference|Optimize%20Workbook%20Performance|_____7)

[**Record and Analyze Workbook Performance**](https://onlinehelp.tableau.com/current/pro/desktop/en-us/perf_record_create_desktop.html?TocPath=Reference|Optimize%20Workbook%20Performance|_____8)

[**Reduce Upload Times to Tableau Server**](https://onlinehelp.tableau.com/current/pro/desktop/en-us/perf_reduce_upload_times.html?TocPath=Reference|Optimize%20Workbook%20Performance|_____9)

**There are different calculation types in Tableau:**

**Basic and aggregate calculations:** These types of calculations are generated as part of the query to the underlying data source and are calculated in the database. In general, basic and aggregate calculations scale very well, and there are many database tuning techniques that can improve their performance.

**Table calculations:**These calculations are calculated by Tableau on the query result set. While this means more work for Tableau, table calculations are generally done over a much smaller set of records than are in the original data source. If table calculation performance is a problem (possibly because the result set returned to Tableau is very large) consider pushing some aspects of the calculation back to the data source layer. One way to do this is to aggregate the data and then perform the calculation on the aggregated data.

**Level of detail (LOD) expressions:** LOD expressions are generated as part of the query to the underlying data source and are calculated in the database. They are expressed as a nested select, so they are dependent on database performance. A table calculation or blending might perform better than a LOD expression, or vice versa.

If you suspect performance is slow due to a LOD expression, you might try replacing it with a table calculation or a data blend to see if performance improves.

## Booleans and integers are faster

When you create calculated fields, the data type you use has a significant impact on the calculation speed. Integers and Booleans are generally much faster than strings. If your calculation produces a binary result (for example, yes/no, pass/fail, over/under), be sure to return a Boolean result rather than a string.

Whats new in Tableau 10.0 – 10.5

New connectors

New Google Sheets connector

Use the Google Sheets connector to connect to a Google Sheets data source. For more information, see [Google Sheets](http://onlinehelp.tableau.com/current/pro/desktop/en-us/examples_googlesheets.html).

**Define parameters in Tableau and their working.**

Tableau parameters are dynamic variables/values that replace the constant values in data calculations and filters. For instance, you can create a calculated field value returning true when the score is greater than 80, and otherwise false. Using parameters, one can replace the constant value of 80 and control it dynamically in the formula

**Differentiate between parameters and filters in Tableau.**

The difference actually lies in the application. Parameters allow users to insert their values, which can be integers, float, date, string that can be used in calculations. However, filters receive only values users choose to ‘filter by’ the list, which cannot be used to perform calculations.  
Users can dynamically change measures and dimensions in parameter but filters do not approve of this feature.Most in-depth, industry-led curriculum in Tableau.

**. What are fact table and Dimension table in Tableau?**

1. **Facts** are the numeric metrics or measurable quantities of the data, which can be analyzed by dimension table. Facts are stores in Fact table that contain foreign keys referring uniquely to the associated dimension tables. The fact table supports data storage at atomic level and thus, allows more number of records to be inserted at one time. For instance, a Sales Fact table can have product key, customer key, promotion key, items sold, referring to a specific event.
2. **Dimensions** are the descriptive attribute values for multiple dimensions of each attribute, defining multiple characteristics. A dimension table ,having reference of a product key form the fact table, can consist of product name, product type, size, color, description, etc.
3. **What is Data Blending?**

Unlike Data Joining, Data Blending in tableau allows combining of data from different sources and platforms. For instance, you can blend data present in an Excel file with that of an Oracle DB to create a new dataset.

**Name the file extensions in Tableau.**

**There are a number of file types and extensions in Tableau :**

* Tableau Workbook (.twb). (XML file only stores the metadata, no data sources)
* Tableau Packaged Workbook (.twbx). (XML file includes metadata and data source)
* Tableau Datasource (.tds).
* Tableau Packaged Datasource (.tdsx).
* Tableau Data extract (.tde).(Data Extract file .twb + .tde = .twbx)
* Tableau Bookmark (.tdm).
* Tableau Map Source (.tms).
* Tableau Preferences (.tps)
* **Explain the difference between .twb and .twbx**
* **.twb** is the most common file extension used in Tableau, which presents an XML format file and comprises all the information present in each dashboard and sheet like what fields are used in the views, styles and formatting applied to a sheet and dashboard. But this workbook does not contain any data. The Packaged workbook merges the information in a Tableau workbook with the local data available (which is not on server). .twbx serves as a zip file, which will include custom images if any. Packaged Workbook allows users to share their workbook information with other Tableau Desktop users and let them open it in Tableau Reader.

**What different products Tableau provide?**

* **Tableau Server :** on-premise or cloud-hosted software to access the workbooks built.
* **Tableau desktop :** desktop environment to create and publish standard and packaged workbooks.
* **Tableau Public :** workbooks available publicly online for users to download and access the included data.
* **Tableau Reader :** get a local access to open Tableau Packaged workbook

**25. How can you display top five and last five sales in the same view?**

Create two sets, one for top 5 another for bottom 5 and the join these two sets displaying a unique set of total 10 rows.

**26. What is TDE file?**

TDE is a Tableau desktop file that contains a .tde extension. It refers to the file that contains data extracted from external sources like MS Excel, MS Access or CSV file.  
There are two aspects of TDE design that make them ideal for supporting analytics and data discovery.

* Firstly, TDE is a columnar store.
* The second is how they are structured which impacts how they are loaded into memory and used by Tableau. This is an important aspect of how TDEs are “architecture aware”. Architecture-awareness means that TDEs use all parts of your computer memory, from RAM to hard disk, and put each part to work what best fits its characteristics.
* **Can parameters have dropdown list?**
* Yes, parameters do have their independent dropdown lists enabling users to view the data entries available in the parameter during its creation.  
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What is a dual access chart in Tableau?

Dimensions verses measures

Dimensions

* Contain qualitative values
  + Names, dates, geographical, category

Measures

* Contain quantitative values that you can measure
  + Sales, profits, quantity, rank, total orders

Discrete VS Continuous

Discrete (blue, finite) – individually separate and distinct

* Discrete dimensions
  + Product name
* Discrete Measures
  + SUM(profit)

Continuous (green, infinite) – forming an unbroken whole without interruption

* Continuous dimension
  + YEAR(OrderDate)
* Continuous Measure
  + SUM(profit)

Group

* Is one dimensional and used to create a higher level category by using lower level category members
  + Certain Sub-categories can be grouped by category
  + Group stays the same even if numbers change
  + Cannot be used in calculated fields

SET

* Can have conditions and can be grouped across multiple dimensions/measures
  + Top sales and profit can be clubbed together for different categories by creating a set
* If numbers change the set members change
* Can be used in calculated fields

**What is a parameter?**

* Dynamic value and end user can select
  + Select # of top/bottom customers
    - Can choose top 5, 10, 15, 20 ect…

Workbook

* Contains sheets which can be
  + Worksheet
  + Dashboard
  + Story

Worksheet

* Contains a single view/chart
  + Shelves
  + Legends
  + Data pane

Dashboard

* A collection of views from multiple worksheets

Story

* Contains a sequence of worksheets or dashboards that work together to convey a story of information

Blended axis

* Two measures that share an axis
  + Sales over time with profit over time
  + Has one marx card

Dual Axis

* Sales axis on the left side with profit axis on the right sight side
* Has two marx cards

**DATES**

Discrete Dates (Blue pill, dimension)

* Right click the dimension date and drag to the columns shelf to open the date field menu
* Here you can choose between discrete and continuous date formats
* If you choose the discrete month it will display the Month only

Continuous Dates (Green pill)

* Right click the dimension date and drag to the columns shelf to open the date field menu
* Here you can choose between discrete and continuous date formats
* If you choose the Continuous month it will display the Month & year

DATETRUNC

DATEADD

DATEDIFF

MAKEDATE

**TYPES OF TABLEAU CHARTS**

* Bar Chart
* Bar Chart w Reference Line
* Stacked Bar Chart
* 100% Stacked Bar Chart
* Clustered Bar Chart
* Bar inside of Bar (for comparison
* Dual Axis Bar
* Lollipop Bar
* Line Chart
* Gant Chart
* Histogram Chart
* Area Chart continuous
* Area Chart discrete
* Bullet Chart
* Map
* Heat Map
* Tree Map
* Scatter Plot

Types of Reports

* YTD, QTD, MTD
* YOY Comparison
* YOY, MOM, WOW, % Change
* Prior N Months Sales
* Date Range Report
* Point in Time
* Drill Down to Details