

# CONCEPTUAL QUESTIONS For TABLEAU



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## Q. What is visualization?

The goal of visualization is to communicate information clearly and effectively to users via the statistical graphs, plots, information graphics, tables and charts selected. Effective visualization helps users in analyzing data and evidence. It makes complex data more accessible, understandable and usable.

## Q: What are some of the visualization tools available in the market today?

Visualization tools can be divided into three broad categories:

### Graphical tools:

**MS Excel:** Microsoft Excel is the standard offering in the Microsoft Office bundle. It is used mostly by analysts for all lightweight analysis, as well as a visualization tool.

**D3.js:** A JavaScript library to create graphs in HTML and related web technologies

**FusionCharts:** A JavaScript library for graphs on the Web

**Google Charts:** Interactive charts for web and mobile devices

**Power BI:** Microsoft product

### Dashboard tools:

**Tableau:** A US-based software company with a flagship product that helps create dashboards on raw data

**Qlikview:** A dashboard software product by the US-based company Qlik

**Spotfire:** Dashboarding software by TIBCO

**OBIEE:** By Oracle

**Business Objects:** By SAP

**Cognos:** By IBM

**MSBI:** By Microsoft

**Pantaho**

**JasperSoft**

**Palantir**

### Infographic tools:

**Infogram, plotly, Picktochart**

## Q. Give examples of bad and good visualizations

### • **Bad visualization:**

- **Pie charts:** difficult to make comparisons between items when area is used, especially when there are lots of items
- Color choice for classes: abundant use of red, orange and blue. Readers can think that the colours could mean good (blue) versus bad (orange and red) whereas these are just associated with a specific segment
- 3D charts: can distort perception and therefore skew data
- Using a solid line in a line chart: dashed and dotted lines can be distracting

### • **Good visualization:**

- Heat map with a single color: some colors stand out more than others, giving more weight to that data. A single color with varying shades show the intensity better
- Adding a trend line (regression line) to a scatter plot help the reader highlighting trends

## Q. What is Tableau Software?

Tableau is business intelligence software that allows anyone to easily connect to data, then visualize and create interactive, sharable dashboards. It's easy enough that any Excel user can learn it, but powerful enough to satisfy even the most complex analytical problems. Securely sharing your findings with others only takes seconds.

## Q. Who are the founders of Tableau?

The Company was founded in Mountain View, California in January 2003 by Chris Stolte, Christian Chabot and Pat Hanrahan.

## Q. Why Tableau?

Whether your data is in an on-premise database, a database, a data warehouse, a cloud application or an Excel file, you can analyze it with Tableau. You can create views of your data and share it with colleagues, customers, and partners. You can use Tableau to blend it with other data. And you can keep your data up to date automatically.

## Q. How Does Tableau Work?

While Tableau lets you analyze databases and spreadsheets like never before, you don't need to know anything about databases to use Tableau. In fact, Tableau is designed to allow business people with no technical training to analyze their data efficiently. Tableau is based on three simple concepts:

**Connect:** Connect Tableau to any database that you want to analyze.

Note that Tableau does not import the data. Instead of queries to the database directly.

**Analyze:** Analyzing data means viewing it, filtering it, sorting it, performing calculations on it, reorganizing it, summarizing it, and so on. Using Tableau, you can do these things by simply arranging fields of your data source on a Tableau worksheet. When you drop a field on a worksheet, Tableau queries the data using standard drivers and query languages (like SQL and MDX) and presents a visual analysis of the data.

**Share:** You can share results with others either by sharing workbooks with other Tableau users, by pasting results into applications such as Microsoft Office, printing to PDF or by using Tableau Server to publish or embed your views across your organization.

## Q. Tableau Products?

Tableau offers five main products: Tableau Desktop, Tableau Server, Tableau Online, Tableau Reader and Tableau Public.

- 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

## Q. What is Tableau Server?

Tableau Server is browser- and mobile-based insight anyone can use. Publish dashboards with Tableau Desktop and share them throughout your organization. It's easy to set up and even easier to run.

## Q. What is Tableau Public?

Tableau Public is a free service that lets anyone publish interactive data to the web. Once on the web, anyone can interact with the data, download it, or create their own visualizations of it. No programming skills are required. Be sure to look at the gallery to see some of the things people have been doing with it.

## Q. What is Tableau Desktop?

Tableau Desktop is a data visualization application that lets you analyze virtually any type of structured data and produce highly interactive, beautiful graphs, dashboards, and reports in just minutes. After a quick installation, you can connect to virtually any data source from spreadsheets to data warehouses and display information in multiple graphic perspectives. Designed to be easy to use, you'll be working faster than ever before.

## Q. What is Tableau Reader?

Tableau Reader is a free viewing application that lets anyone read and interacts with packaged workbooks created by Tableau Desktop.

## Q. Tableau Versions?

4.0, 5.0, 6.0, 7.0, 8.0, 8.1, 8.2, 8.3, 9.0, 9.1, 9.2, 9.3, 10.0, 10.1, 10.2, 10.3, 10.4, 10.5...2023.2

## Q. What is the current version of Tableau Desktop?

Current versions: Tableau Desktop version 2023.2 (as of June 2023)

## Q. What are the differences between Tableau desktop and Tableau Server?

**Ans:** While Tableau desktop performs data visualization and workbook creation, Tableau server is used to distribute these interactive workbooks and/or reports to the right audience. Users can edit and update the workbooks and dashboards online or Server but cannot create new ones. However, there are limited editing options when compared to desktop. Tableau Public is again a free tool consisting of Desktop and Server components accessible to anyone.

## Q. What are the differences between Tableau Software, GoodData and Traditional BI (Business Objects, etc.)?

At high level there are four major differences. How to view sql which is generated by Tab  
You could talk feature – functionality for days, but at a high level there are four major differences.

**1. Speed:** How fast can you get up and running with the system, answer questions, design and share dashboards and then change them? This is where systems like Tableau and GoodData are far better than old – school business intelligence like Business Objects or Cognos. Traditional systems took months or years to implement, with costs running to millions. Tableau has a free trail that installs in minutes and GoodData is cloud – based, so they are faster to implement by orders of magnitude. They are also faster to results: traditional BI requires IT and developers to make any changes to reports, so business users are struck in a queue waiting to get anything done. Tableau and GoodData provide more of a self – service experience.

**2. Analysis layer:** This is where Tableau excels. It has a powerful and flexible drag & drop visualization engine based on some technology from Stanford. GoodData and traditional BI typically provide some canned reports but changing them requires significant time and money.

**3. Data layer:** This is where the three options are most different:  
GoodData requires you to move your data to its cloud. Traditional BI typically requires you to move your data to its data warehouse system. Tableau connects to a variety of existing data source and also provides a fast in – memory data engine, essentially a local database. Since most enterprises have their data stored all over the place, this provides the most choice and let's companies use the investment they've already made.

**4. Enterprise readiness:** Traditional BI and Tableau do well here, with enterprise – level security and high scalability.

## Q. Mention what are different Tableau files?

Different Tableau files include

- **Workbooks:** Workbooks hold one or more worksheets and dashboards
- **Bookmarks:** It contains a single worksheet and it's an easy way to quickly share your work
- **Packaged Workbooks:** It contains a workbook along with any supporting local file data and background images
- **Data Extraction Files:** Extract files are a local copy of a subset or entire data source
- **Data Connection Files:** It's a small XML file with various connection information

## Q. 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.

**Q. Explain what is Tableau Data Extract?**

A table data extract is a compressed snapshot of data stored on disk and loaded into memory as required to render a Tableau. A TDE is a columnar store and reduce the input/output required to access and aggregate the values.

**Q. What is benefit of Tableau extract file over the live connection?**

Extract can be used anywhere without any connection and you can build your own visualizations without connecting to Database.

**Q. What is a format pane in Tableau?**

A pane that contains formatting settings that control the entire worksheet, as well as individual fields in the view.

**Q. Name the file extensions in Tableau.**

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

- Tableau Workbook (.twb)
- Tableau Packaged Workbook (.twbx)
- Tableau Datasource (.tds)
- Tableau Packaged Datasource (.tdsx)
- Tableau Data extract (.tde)
- Tableau Bookmark (.tdm)
- Tableau Map Source (.tms)
- Tableau Preferences (.tps)

**Q. What is a Tableau workbook?**

It is a file with a .twb extension that contains one or more worksheets (and possibly also dashboards and stories).

**Q. 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.

**Q. What is crosstab chart?**

It is a text table view. Use text tables to display the numbers associated with dimension members.

**Q. What is a Gantt Chart?**

A Gantt chart shows the progress of the value of a task or resource over a period of time. So, Gantt chart a time dimension is an essential field.

**Q. Mention whether you can create relational joins in Tableau without creating a new table?**

Yes, one can create relational joins in tableau without creating a new table.

**Q. Mention when to use Joins vs. Blending in Tableau?**

If data resides in a single source, it is always desirable to use Joins. When your data is not in one place blending is the most viable way to create a left join like the connection between your primary and secondary data sources.

**Q. Which join is used in data blending?**

There won't be any joins as such but we will just give the column references like primary and foreign key relation.

**Q. What is the Max no. of tables we can join in Tableau?**

We can join max 32 table, it's not possible to combine more than 32 tables.

**Q. What is the difference between joining and blending in Tableau?**

**Joins in Tableau:**

For E.g.: your client is in Healthcare domain and using SQL Server as their database. In SQL server there may be many tables like Claims Tables, Rejected Claims Table, and Customer Table. Now, client wants to know customer wise claims and customer wise rejected claims table using the joins. Join is a query that combines the data from 2 or more tables by making use of Join condition.

We can join max 32 tables. its not possible to combine more than 32 tables.

In Tableau the joins can perform in 2 ways.

1. By making use of common columns.
2. By making use of common data types.

If we create joins on the fields in Tableau all the table names are suffixing with \$. While performing the joins on multiple tables, always go with the less amount of data tables, so that we can improve the performance.

In Tableau the joins are divided into 2 types.

1. Equi Join
2. Non Equi Join

**1. Equi Join:** in the join condition if we are using Equality "=" operator then such a kind of join called as Equi join.

**2. Non Equi Join:** in the join condition apart from the Equality "=" if we use any other operator like <, >, <=, >= and != Then such a kind of joins are called as Non Equi Join.

Equi Join is divided into 3 types

1. Inner Join,
2. Outer Join,
3. Self – Join.

**1. Inner Join:** Inner join will load the only matching records from the both tables. Inner join condition:

Tablea.id = Tableb.id

**2. Outer Join:** Again the outer join divided into 3 types.

- a) Left Outer Join,
- b) Right Outer Join,
- c) Full Outer Join.

Left outer join: displays the complete data from the left + matching records from the left.

Condition: tablea.id(+).

Right Outer Join: displays the complete data from the right + matching records from the left.

Condition: tablea.id(+)=tableb.id

Full outer join: full outer join load the complete data from the left table and right table. Condition: Table A full outer join Table B ON tablea.id= tableb.id

**3. Self-Join:** If we are performing join to the same table itself, such a kind of join is called as self-join.

**Non Equi Join:** In the join condition if we are using the operators apart from the equality "=" then such a kind of joins

are called as Non Equi join.

### Data Blending in Tableau:

For ex: your client is the same Healthcare Client. They are operating their services in Asia, Europe, NA and so on & they are maintaining Asia data in SQL, Europe Data in SQL Server and NA data in MY SQL.

Now, your client wants to analyze their business across the world in a single worksheet. So, you can't perform join here. Now you have to make use of Data Blending Concept.

Normally in the Tableau we can perform the analysis on the single data server. If we want to perform the analysis from multiple data sources in a single sheet then we have to make use of a new concept called as data blending.

Data blending mixes the data from different data sources and allows the users to perform the analysis in a single sheet. Blending means mixing. If we are mixing the data sources then it is called as data blending.

### Rules to perform the data blending

In order to perform data blending there are few rules.

1. If we are performing the data blending on 2 data sources, these 2 data sources should have at least 1 common dimension.
2. In that common dimension at least 1 value should match.

In Tableau we can perform the data blending in 2 ways.

- A. Automatic way
- B. Custom way

**1. Automatic way:** In the automatic way Tableau automatically defines the relationship between the 2 data sources based on the common dimensions and based on the matching values and the relationship is indicated with Orange color.

**2. Custom or Manual way:** In the manual or custom way the user need to define the relationship manually.

### Data blending functionality

1. All the primary data sources and the secondary data sources are linked by specific relationship
2. While performing the data blending each work sheet has a primary connection and optionally it might contains several secondary connections.
3. All the primary connections are indicated in the Blue in the work sheet and all the secondary data sources indicated with the Orange color tick mark.
4. In the data blending 1 sheet contains 1 primary data source and 1 sheet can contain end number of secondary data sources.

**Q. Can we perform all kinds of joins using Data blending?**

No

**Q. What does REPLACE function do in Tableau?**

The REPLACE function searches a given string for a substring and replaces it with replacement string.

**Q. Which function returns the number of items in a group?**

The COUNT() function.

**Q. Mention what is the difference between published data sources and embedded data sources in Tableau?**

The difference between published data source and embedded data source is that,

- **Published data source:** It contains connection information that is independent of any workbook and can be used by multiple workbooks.
- **Embedded data source:** It contains connection information and is associated with a workbook.

**Q. Mention what are the characteristics to distinguish data source?**

The data sources are distinguished on the basis of following characteristics

- Icon/Name
- Connection Type
- Connects to
- Live or Last extract

**Q. What is a data Source page?**

A page where you can set up your data source. The Data Source page generally consists of four main areas: left pane, join area, preview area, and metadata area.

**Q. What is the criterion to blend the data from multiple data sources?**

There should be a common dimension to blend the data source into single worksheet.

**Q. What are the types of filters in Tableau?**

Custom Filters, Context Filters, Normal Filters, Quick Filters, Data source Filters.

**Q. What is the difference between Quick Filter and Normal filter?**

Normal Filter is used to restrict the data from database based on selected dimension or measure. But Quick Filters are used to give a chance to user for dynamically changing data members at run time.

**Q. What is a context filter?**

In a context filter the filter condition is applied first to the data source and then some other filters are applied only to the resulting records.

**Q. Which filter is used to get the top 10 values from a view?**

TOP filter.

**Q. What is disadvantage of context filters?**

The context filter is not frequently changed by the user – if the filter is changed the database must recomputed and rewrite the temporary table, slowing performance.

When you set a dimension to context, Tableau crates a temporary table that will require a reload each time the view is initiated. For Excel, Access and text data sources, the temporary table created is in an Access table format. For SQL Server, My SQL and Oracle data sources, you must have permission to create a temporary table on your server. For multidimensional data source, or cubes, temporary tables are not crated, and context filters only defined which filters are independent and dependent.

**Q. What is the Difference between quick filter and Normal filter in tableau?**

Quick filter is used to view the filtering options and can be used to select the option. Normal filter is something you can limit the options from the list or use some conditions to limit the data by field or value.

**Q. How to create cascading filters without context filter?**

I have filter 1 and filter2. Based on filter 1, I need to filter 2 data

Ex: Filter 1 as Country and Filter 2: States

I have chosen country as USA and filter2 should display only USA states

Choose options of Filter2 states: select option of “Only relevant values “

**Q. 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.

**Q. Can we use non used columns (Columns which are not used in reports but data source has columns) in Tableau Filters?**

Yes!

Ex. In data source I have column like

empID, EmpName, EmpDept,EmpDsignation, EmpSalary

In reports I am using empname on columns and empsalry on rows.

I can use empDesigation on Filters

**Q. Define the names for parameters, filters etc.**

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.

Filters are used to restrict the data based on the condition u have mentioned in the filters shelf.

**Q. 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.

**Q. How many ways we use parameters in Tableau?**

We can use parameters with filters, calculated fields, actions, measure-swap, changing views and auto updates

**Q. How do we select multiple values in parameters?**

We cannot select multiple values in parameters

**Q. State limitations of parameters in Tableau.**

Parameters facilitate only four ways to represent data on a dashboard (which are seven in quick filters). Further, parameters do not allow multiple selections in a filter.

**Q. What is a Dimension?**

Tableau treats any field containing qualitative, categorical information as a dimension. This includes any field with text or dates values.

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.

**Q. What is a Measure (Facts)?**

A measure is a field that is a dependent on value of one or more dimensions. Tableau treats any field containing numeric (quantitative) information as a measure.

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.

**Q. Can we create sets using measures?**

No

**Q. What is the difference between sets and groups?**

Group- 1) group is category purpose 2) calculation field not a possible in group  
Sets- 1) sets is a grouping purpose based on some condition. 2) Calculation field possible in sets.

### **Q. What is Forecasting in Tableau?**

Forecasting is about predicting the future value of a measure. There are many mathematical models for forecasting. Tableau uses the model known as exponential smoothing.

### **Q. What is a Trendline in tableau?**

Trend lines are used to predict the continuation of certain trend of a variable. It also helps to identify the correlation between two variables by observing the trend in both of them simultaneously.

### **Q. What is Page shelf?**

Tableau provides a distinct and powerful tool to control the output display known as Page shelf. As the name suggests, the page shelf fragments the view into a series of pages, presenting a different view on each page, making it more user-friendly and minimizing scrolling to analyze and view data and information. You can flip through the pages using the specified controls and compare them at a common axle.

### **Q. What is aggregation and disaggregation of data in Tableau?**

Aggregation and disaggregation in Tableau are the ways to develop a scatter plot to compare and measure data values. As the name suggests, aggregation is the calculated form of a set of values that return a single numeric value. For instance, a measure with values 1,3,5,7 returns 1. You can also set a default aggregation for any measure, which is not user-defined. Tableau supports various default aggregations for a measure like Sum, average, Median, Count and others.

Disaggregating data refers to viewing each data source row, while analyzing data both independently & dependently.

Suppose I have data like

EidName Salary Dept

- 1.abc 2000 java
- 2.bbc 3000 .net
- 3.Krishna 2500 java
- Madhu 300
- 5.Vamshi 3000 mainframes
- 1.abc 1000 testing
- 2.bbc 3000 tableau
- 3.krishna 5000.net
- 4.Madhu 7000 testing
- vanshi 9000 tableau
- 1 abc 11000 Mainframes
- 2 bbc 13000testing
- 3 krishna 15000 java
- 4 Madhu 17000 .nte
- 5 vamshi 19000.net

**Aggregation:** to display aggregate data

Sum/avg salary by each individual employee

drag ename on column and salary on rows we will get sum (salary) of each and individual employee

now change measure type as Avg

Choose salary option – choose measure types as “Avg”

**Disaggregation:** To display each and every transaction

When you look at the aggregated data in the views above, each bar represents all transactions for a specific employee summed up or averaged into a single value. Now say that you want to see the individual salary transactions for each employee. You can create a view like that by selecting Analysis>Aggregate Measures.

**Q. How to remove 'All' options from a Tableau auto-filter?**

The auto-filter provides a feature of removing 'All' options by simply clicking the down arrow in the auto-filter heading. You can scroll down to 'Customize' in the dropdown and then uncheck the 'Show "All" Value' attribute. It can be activated by checking the field again.

**Q. How do we do testing in Tableau?**

You can't test in Tableau as far as I know. It is a data visualization software.

**Q. Can you get values from two different sources as a single input into parameter?**

No you cannot. Each data source corresponds to a Tableau workbook. If you include both data variables in the same data source you can input them in the same workbook.

**Q. What is the use of new Custom SQL Query in tableau?**

Custom SQL Query written after connecting to data for pulling the data in a structured view, One simple example is you have 50 columns in a table, but we need just 10 columns only. So instead of taking 50 columns you can write a sql query. Performance will increase

**Q. How to display top 5 and last 5 sales in same view?**

Using filters or calculated fields we can able to display the top 5 and last 5 sales in same view?

**Q. Design a view to show region wise profit and sales. I did not want line and bar chat should be used for profit and sales. How you will design and please explain?**

Generate the Map using cities → then Drag the Profit and sales to the Details → Add the state as Quick filter

**Q. Design a view in a map such that if user selects any state the cities under that state should show profit and sales.**

If you want to show the Sales and profit in each and every city under the states in the same work sheet. According to your question you should have State, City, Sales and Profit filed in your dataset.

1. Double click on the State filed.
2. Drag the City and drop into Marks card (under the State field)
3. Drag the sales and drop into size.
4. Drag the profit and drop into color.
5. Click on Size legend and increase the size. (75%)
6. Right click on the State field and select show quick filter.
7. Select any state and check whether you got the required view or not. In this view size indicates the amount of sales and color indicates the Profit values.

**Q. What is data modelling?**

Data modelling is the analysis of data objects that are used in a business or other context and the identification of the relationships among these data objects. Data modelling is a first step in doing object-oriented programming

**Q. How to create filled maps?**

Step 1: Build a Map View Double-click a geographic field such as State, Area Code, Zip Code, etc.

Step 2: Select the Filled Map Mark Type The Automatic mark type will show this type of view as circles over a map. On the Marks card, select Filled Map to color the geographic areas.

Step 3: Drag a Field to the Color Shelf Define how the locations are colored by dragging another field to the Color shelf.

### Q. How to rectify SQL Performance for developed Dashboards

After creation of Dashboards if we get problem from sql side that means Custom Sql ....How to Rectify the sql performance from custom sql.

### Q. Suppose my license expires today, can users able to view the dashboards or workbook which i published in server earlier.

If your server license expires today, your user name on the server will have the role 'unlicensed' which means you cannot access, but others can. The Site Admin can 'Change Ownership' to another person, so extracts if enabled do not fail.

### Q. Think that I am using Tableau desktop and have a live connection to Clouderahadoop data. I need to press F5 to refresh the visualization. Is there any way to automatically refresh the visualization every x minutes instead of pressing F5 every-time?

Here is the example of refreshing dashboard in every 3 seconds, Replace apisrc and server url with yours. The interval below is for 3 seconds.

Tableau JavaScript API

### Q. Name the components of a Dashboard

- Horizontal- Horizontal layout containers allow the designer to group worksheets and dashboard components left to right across your page and edit the height of all elements at once.
- Vertical- Vertical containers allow the user to group worksheets and dashboard components top to bottom down your page and edit the width of all elements at once.
- Text
- Image Extract: – A Tableau workbook is in XML format. In order to extracts images, Tableau applies some codes to extract an image which can be stored in XML.
- Web [URL ACTION]:- A URL action is a hyperlink that points to a Web page, file, or other web-based resource outside of Tableau. You can use URL actions to link to more information about your data that may be hosted outside of your data source. To make the link relevant to your data, you can substitute field values of a selection into the URL as parameters.

### Q. What do you mean by addressing and partitioning?

When you add a table calculation, you must use all dimensions in the level of detail either for partitioning (scoping) or for addressing (direction):

- The dimensions that define how to group the calculation, that is, define the scope of data it is performed on, are called partitioning fields. The table calculation is performed separately within each partition.
- The remaining dimensions, upon which the table calculation is performed, are called addressing fields, and determine the direction of the calculation.

### Q. How to use group in calculated field?

By adding the same calculation to 'Group By' clause in SQL query or creating a Calculated Field in the Data Window and using that field whenever you want to group the fields.

- Using groups in a calculation. You cannot reference ad-hoc groups in a calculation
- Blend data using groups created in the secondary data source: Only calculated groups can be used in data blending if the group was created in the secondary data source.
- Use a group in another workbook. You can easily replicate a group in another workbook by copy and pasting a calculation.

### Q. What is the order of execution of table calculation, LOD, reference lines?

Order of execution

1. LOD
2. Table Calculations

### 3. Reference lines

#### **Q. How do you automate reports using Tableau software?**

Steps to automate the reports: while publishing the report to Tableau server, you will find the option to schedule reports. Click on this to select the time when you want to refresh the data.

#### **Q. Difference between scatter plot vs Tree map?**

Tree Maps – Display data in nested rectangles. We use dimensions to define structure of the tree maps and measures to design the size or color of the individual rectangle. We cannot add trend lines in Tree maps.

Scatter plot – provides an easy way to visualize relationships between numerical variables. We can add trend lines.

#### **Q. How do you optimize performance of dashboard?**

- Minimize the number of fields based on the analysis being performed. Use the hide all unused fields option to remove unused columns from a data source.
- Minimize the number of records. Use extract filters to keep only the data you need.
- Optimize extracts to speed up future queries by materializing calculations, removing columns and the use of accelerated views.
- Remove unneeded dimension from the detail shelf
- Reduce number of filters
- Use context filter
- Use Boolean calculations

#### **Q. How is Tableau so fast when working with databases?**

Tableau compiles the elements of your visual canvas into a SQL or MDX query for the remote database to process. Since a database typically runs on more powerful hardware than the laptops / workstations used by analysts, you should generally expect the database to handle queries much faster than most in memory BI applications limited by end-user hardware. Tableau's ability to push computation (queries) close to the data is increasingly important for large data sets, which may reside on a fast cluster and may be too large to bring in memory. Another factor in performance relates to data transfer, or in Tableau's case result set transfer. Since Tableau visualizations are designed for human consumption, they are tailored to the capabilities and limits of the human perception system. This generally means that the amount of data in a query result set is small relative to the size of the underlying data, and visualizations focus on aggregation and filtering to identify trends and outliers. The small result sets require little network bandwidth, so Tableau is able to fetch and render the result set very quickly. And, as Ross mentioned, Tableau will cache query results for fast reuse. The last factor involves Tableau's ability to use in memory acceleration as needed (for example, when working with very slow databases, text files, etc.). Tableau's Data Engine uses memory mapped I/O, so while it takes advantage of in memory acceleration it can easily work with large data sets which cannot fit in memory. The Data Engine will work only with the subsets of data on disk which are needed for a given query, and the data subsets are mapped into memory as needed.

#### **Q. How does Tableau perform with huge datasets?**

Tableau Performance is based on Data source performance. If data source takes more time to execute a query then Tableau must wait up to that time

#### **Q. How do I automate reports using Tableau software?**

You need to publish report to tableau server, while publishing you will find one option to schedule reports. You just need to select the time when you want to refresh data.

#### **Speed:**

How fast can you get up and running with the system, answer questions, design and share dashboards and then change them? This is where systems like Tableau and GoodData are far better than old – school business intelligence

like Business Objects or Cognos. Traditional systems took months or years to implement, with costs running to millions. Tableau has a free trial that installs in minutes and GoodData is cloud – based, so they are faster to implement by orders of magnitude. They are also faster to results: traditional BI requires IT and developers to make any changes to reports, so business users are stuck in a queue waiting to get anything done. Tableau and GoodData provide more of a self – service experience.

### **Analysis layer**

This is where Tableau excels. It has a powerful and flexible drag & drop visualization engine based on some technology from Stanford. Traditional BI typically provides some canned reports but changing them requires significant time and money.

### **Data layer**

**This is where the three options are most different:**

GoodData requires you to move your data to its cloud. Traditional BI typically requires you to move your data to its data warehouse system. Tableau connects to a variety of existing data source and also provides a fast in – memory data engine, essentially a local database. Since most enterprises have their data stored all over the place, this provides the maximum choice and lets companies use the investment they've already made. Enterprise readiness.

### **Q. Explain the integration of Tableau with R?**

R is a popular open-source environment for statistical analysis. [Tableau Desktop](#) can now connect to R through calculated fields and take advantage of R functions, libraries, and packages and even saved models. These calculations dynamically invoke the R engine and pass values to R via the Rserve package, and are returned back to Tableau.

1. Tableau Server can also be configured to connect to an instance of Rserve through the tabadmin utility, allowing anyone to view a dashboard containing R functionality.
2. Combining R with Tableau gives you the ability to bring deep statistical analysis into a drag-and-drop visual analytics environment.

### **Q. How to view underlying SQL Queries in Tableau?**

Viewing underlying SQL Queries in Tableau provides two options:

- Create a Performance Recording to record performance information about the main events you interact with workbook. Users can view the performance metrics in a workbook created by Tableau.

Help> Settings and Performance> Start Performance Recording

Help> Setting and Performance > Stop Performance Recording

- Reviewing the Tableau Desktop Logs located at C:\Users\\My Documents\My Tableau Repository. For live connection to data source, you can check log.txt and tabprotosrv.txt files. For an extract, check tdeserver.txt file.

### **Q. What is LOD expression in Tableau?**

A syntax that supports aggregation at dimensionalities other than the view level. With level of detail expressions, you can attach one or more dimensions to any aggregate expression.

### **Q. What are the possible reasons for slow performance in Tableau?**

More Extracts, filters and depends on data sources.

### **Q. What is marks card in Tableau?**

A card to the left of the view where you can drag fields to control mark properties such as type, color, size, shape, label, tooltip, and detail.

### **Q. What are shelves in Tableau?**

They are Named areas to the left and top of the view. You build views by placing fields onto the shelves. Some shelves are available only when you select certain mark types.

**Q. In Tableau what is a worksheet?**

A sheet where you build views of your data by dragging fields onto shelves.

**Q. What is an alias in Tableau?**

An alternative name that you can assign to a field or to a dimension member.

**Q. What is Dual Axis?**

You can compare multiple measures using dual axes, which are two independent axes that are layered on top of each other.

**Q. What is table calculation in Tableau?**

These are inbuilt calculations in tableau which we normally use to calculate Percentage changes.

**Q. What is Import all data feature in Tableau?**

It Imports the entire data source into Tableau fast data engine as an extract and saves it in the workbook.

**Q. What is Connect live?**

It Creates a direct connect to the data source and speed up access.

**Q. What is a story in Tableau?**

A story is a sheet that contains a sequence of worksheets or dashboards that work together to convey information.

**Q. What is Tableau Show me?**

Show Me is used to apply a required view to the existing data in the worksheet. Those views can be a pie chart, scatter plot or a line chart.

**Q. What is a Tableau data pane?**

A pane on the left side of the workbook that displays the fields of the data sources to which Tableau is connected.

**Q. What is a calculated field in Tableau?**

A new field that you create by using a formula to modify the existing fields in your data source.

**Q. How to check the metadata of a table?**

In the menu Data -> New connection drag the table to the data pane to view its metadata.

**Q. How to create a column Alias?**

In the menu Data -> New connection open the table metadata and click on the column name to create alias.

**Q. How to get current date and time?**

Use the NOW() function.

**Q. How to check if a data is a of type date?**

BY using the ISDATE() function.

**Q. Give an expression to add 4 months to the date 014-03-12?**

DATEADD('month', 3, #2014-03-12#) = 2004-07-15 12:00:00 AM

**Q. What is the difference between heat map and tree map?**

A heat map is a great way to compare categories using color and size. In this, you can compare two different measures. Tree map is a very powerful visualization, particularly for illustrating hierarchical (tree – structured) data and part – to



– whole relationships.

#### **Q. How to view SQL which is generated by Tableau Desktop?**

The Tableau Desktop Log files are located in C:\Users\\My Documents\My Tableau Repository. If you have a live connection to the data source, check the log.txt and tabprotosrv.txt files. If you are using an extract, check the tdeserver.txt file. The tabprotosrv.txt file often shows detailed information about queries.

#### **Q. How will you publish and schedule workbook in tableau server?**

First create a schedule for particular time and then create extract for the data source and publish the workbook for the server. Before you publish, there is an option called Scheduling and Authentication, click on that and select the schedule from the drop down which is created and publish. Also publish data source and assign the schedule. This schedule will automatically run for the assigned time and the workbook is refreshed.

#### **Q. How can we combine database and flat file data in tableau desktop?**

Connect data two times, one for database tables and one for flat file. The Data->Edit Relationships  
Give a join condition on common column from db tables to flat file

#### **Q. How to add custom Color to Tableau?**

Create Custom Color code in “Preferences.tps”

Navigation :: Documents » My Table Repository »Preferences.tps

Add custom color code Note: In tableau 9.0 version we have color picker option.

#### **Q. How to design a view to show region wise profit and sales. I did not want line and bar chat should be used for profit and sales?**

Generate the Map using cities ->then Drag the Profit and sales to the Details->Add the state as Quick filter

#### **Q. What is blended axis?**

Multiple Measures are shown in single axis and also all the marks shown in single pane

Drag a dimension in a column

Drag the first measure in column

Drag 2nd measure in existing axis

[Http://onlinehelp.tableau.com/current/pro/online/mac/en-US/multiplemeasures\\_blendedaxes.html](http://onlinehelp.tableau.com/current/pro/online/mac/en-US/multiplemeasures_blendedaxes.html)

#### **Q. How to do Performance Testing in Tableau?**

Performance testing is again an important part of implementing tableau. This can be done by loading Testing Tableau Server with TabJolt, which is a “Point and Run” load generator created to perform QA. While TabJolt is not supported by tableau directly, it has to be installed using other open source products.

#### **Q. Explain the concept of Dual Axis.**

Dual Axis is an excellent phenomenon supported by Tableau that helps users view two scales of two measures in the same graph. Many websites like Indeed.com and other make use of dual axis to show the comparison between two measures and their growth rate in a septic set of years. Dual axes let you compare multiple measures at once, having two independent axes layered on top of one another.

#### **Q. How to automate reports using Tableau software?**

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