What is data visualization?

Data visualization is the graphical representation of information and data. By using visual elements like charts, graphs, and maps, data visualization tools provide an accessible way to see and understand trends, outliers, and patterns in data.

How do you explain data visualization to a layman?

Data visualization is the practice of translating information into a visual context, such as a map or graph, to make data easier for the human brain to understand and pull insights from. The main goal of data visualization is **to make it easier to identify patterns, trends and outliers in large data sets**.

Why did you choose data visualization?

Data visualization gives us a **clear idea of what the information means by giving it visual context through maps or graphs**. This makes the data more natural for the human mind to comprehend and therefore makes it easier to identify trends, patterns, and outliers within large data sets.

Why Do We Visualize Data?

Data visualization **helps to tell stories by curating data into a form easier to understand**, highlighting the trends and outliers. A good visualization tells a story, removing the noise from data and highlighting the useful information

How do you define a dashboard?

A dashboard is a **type of graphical user interface** which often provides at-a-glance views of key performance indicators (KPIs) relevant to a particular objective or business process. ... The "dashboard" is often accessible by a web browser and is usually linked to regularly updating data sources. a user interface or web page that gives a current summary, usually in graphic, easy-to-read form, of key information relating to progress and performance, especially of a business or website

Briefly explain the process you follow in a data visualization project from start to finish?

Acquire
Obtain the data, whether from a file on a disk or a source over a network.

Parse
Provide some structure for the data's meaning, and order it into categories.

Filter
Remove all but the data of interest.

Mine
Apply methods from statistics or data mining as a way to discern patterns or place the data in mathematical context.

Represent
Choose a basic visual model, such as a bar graph, list, or tree.

Refine
Improve the basic representation to make it clearer and more visually engaging.

Interact
Add methods for manipulating the data or controlling what features are visible.

How do you choose a visual to represent data?

If you have categorical data, use a bar chart if you have more than 5 categories or a pie chart otherwise.
If you have nominal data, use bar charts or histograms if your data is discrete, or line/ area charts if it is continuous.
If you want to show the relationship between values in your dataset, use a scatter plot, bubble chart, or line charts.
If you want to compare values, use a pie chart — for relative comparison — or bar charts — for precise comparison.
If you want to compare volumes, use an area chart or a bubble chart.
If you want to show trends and patterns in your data, use a line chart, bar chart, or scatter plot

Data Types

https://www.upgrad.com/blog/types-of-data/
Qualitative - nominal(gender,colors), ordinal(ranks, grades, size of shirts)
Quantative - discrete (whole nums and integers), continuous(fractions)

What is a Column chart?

A column chart is a data visualization where each category is represented by a rectangle, with the height of the rectangle being proportional to the values being plotted. Column charts are also known as vertical bar charts.

What is a Bar chart?

A bar chart or bar graph is a chart or graph that presents categorical data with rectangular bars with heights or lengths proportional to the values that they represent. The bars can be plotted vertically or horizontally. A vertical bar chart is sometimes called a column chart

What is a Line chart?

A line chart or line plot or line graph or curve chart is a type of chart which displays information as a series of data points called 'markers' connected by straight line segments. It is a basic type of chart common in many fields

What is a Stacked Bar chart?

A stacked bar chart, also known as a stacked bar graph, is **a graph that is used to break down and compare parts of a whole**. Each bar in the chart represents a whole, and segments in the bar represent different parts or categories of that whole.

What is a Stacked Column Chart?

A stacked column chart is **a basic Excel chart type to allow part-to-whole comparisons over time, or across categories**. In a stacked column chart, data series are stacked one on top of the other in vertical columns. Stacked column charts can show change over time because it's easy to compare total column lengths

What is a Scatter Plot?

A scatter plot is a type of plot or mathematical diagram using Cartesian coordinates to display values for typically two variables for a set of data.

What is an Area Chart?

An area chart or area graph displays graphically quantitative data. It is based on the line chart. The area between axis and line are commonly emphasized with colors, textures and hatchings. Commonly one compares two or more quantities with an area chart

What is a TreeMap?
In information visualization and computing, treemapping is a method for displaying hierarchical data using nested figures, usually rectangles. Treemaps display hierarchical data as a set of nested rectangles

What is a Heat Map?
A heat map is a data visualization technique that shows magnitude of a phenomenon as color in two dimensions. The variation in color may be by hue or intensity, giving obvious visual cues to the reader about how the phenomenon is clustered or varies over space

What is a Histogram chart?
A histogram is **a chart that groups numeric data into bins**, displaying the bins as segmented columns. They're used to depict the distribution of a dataset: how often values fall into ranges

What are some of the charts you avoid and why?
Pie charts, 3D and different tricks, radar graphs, donuts and surface graphs

Why did you choose to work on Tableau or What makes it different from other tools?
ableau is a very effective tool to create interactive data visualizations very quickly. It is very simple and user-friendly. Tableau can create complex graphs giving a similar feel as the pivot table graphs in Excel. Moreover, it can handle a lot more data and quickly provide calculations on datasets.

Users can create visuals quickly and switch between types easily to find the model that best represents your message.
Users can manage a huge amount of data.
The user interface is well-organized which allows customizing the view with a few clicks.
It is extremely easy to integrate with multiple data sources.
It can create visualizations for a large amount of data without crashing.
It gives businesses the ability to perform fairly complex data visualization in a very intuitive, drag and drop manner.Data visualization by Tableau is remarkably interac

What are interactive dashboards?
An interactive dashboard is a data management tool that tracks, analyzes, monitors, and visually displays key business metrics while allowing users to interact with data, enabling them to make well-informed, data-driven, and healthy business decisions.

What is Show Me feature in Tableau?
Helps the user select the best chart to display the selected measures and dimensions.

What is a Tableau data pane?
Tableau **displays data source connections and data fields for the workbook in** the Data pane on the left side of the workspace. ... For details on the many ways you can customize the fields in the Data pane, see Organize and Customize Fields in the Data Pane and Edit Default Settings for Fields.

What are different ways of connecting data?
live(logic to data), extract(data to logic)

How do you prepare data for reporting?

Gather data. The data preparation process begins with finding the right data. ...
Discover and assess data. After collecting the data, it is important to discover each dataset. ...
Cleanse and validate data. ...
Transform and enrich data. ...
Store data.

What is marks card in Tableau?

In Tableau, the Marks card **provides you with control over how the data is displayed in the view**. The options on this card allow you to change the level of detail as well as the appearance of the marks without affecting the headers built by fields on Columns and Rows. Take a look at the Marks card drop-down menu.

When do you use horizontal and vertical containers?

Their names give a slight hint on this one. **Vertical containers are really great at letting you position other objects above or below each other**. On the other hand, horizontal containers excel at letting you position other objects to the left or right of each other.

What is Page shelf?

The Pages shelf lets you break a view into a series of pages so you can better analyze how a specific field affects the rest of the data in a view. ... When you place a measure on the Pages shelf, Tableau automatically converts the measure into a discrete measure

Tableau data publish

https://help.tableau.com/current/pro/desktop/en-us/publish_datasources_about.htm

What is a story in tableau?

In Tableau, a story is **a sequence of visualizations that work together to convey information**. You can create stories to tell a data narrative, provide context, demonstrate how decisions relate to outcomes, or to simply make a compelling case

What is the difference between a story and a dashboard in tableau?

A dashboard is a collection of **views** from multiple worksheets. ... A story contains a sequence of worksheets or dashboards that work together to convey information

What is a Dimension?

According to Tableau's Knowledge Base, a dimension is a field that can be considered an independent variable. By default, Tableau treats any field containing qualitative, categorical information as a dimension. ... Generally, the measure is the number; the dimension is what you “slice and dice” the number by.

What is a Measure?

Measures contain **numeric, quantitative values** that you can measure. Measures can be aggregated. When you drag a measure into the view, Tableau applies an aggregation to that measure (by default).

What are Filter Actions?

Filter actions send information between worksheets. Typically, a filter action sends information from a selected mark to another sheet showing related information. Behind the scenes, filter actions send data values from the relevant source fields as filters to the target sheet.

What are the three types of dashboard actions?

There are three types of dashboard actions: **filter actions, highlight actions and URL actions**.

What are the different file extensions in Tableau?

Workbooks (.twb) – Tableau workbook files have the .twb file extension. Workbooks hold one or more worksheets, plus zero or more dashboards and stories.

Bookmarks (.tbm) – Tableau bookmark files have the .tbm file extension. Bookmarks contain a single worksheet and are an easy way to quickly share your work. For more information, see Save a bookmark(Link opens in a new window).

Packaged Workbooks (.twbx) – Tableau packaged workbooks have the .twbx file extension. A packaged workbook is a single zip file that contains a workbook along with any supporting local file data and background images. This format is the best way to package your work for sharing with others who don't have access to the original data. For more information, see Packaged Workbooks.

Extract (.hyper or .tde) – Depending on the version the extract was created in, Tableau extract files can have either the .hyper or .tde file extension. Extract files are a local copy of a subset or entire data set that you can use to share data with others, when you need to work offline, and improve performance. For more information, see Extract Your Data.

Data Source (.tds) – Tableau data source files have the .tds file extension. Data source files are shortcuts for quickly connecting to the original data that you use often. Data source files do not contain the actual data but rather the information necessary to connect to the actual data as well as any modifications you've made on top of the actual data such as changing default properties, creating calculated fields, adding groups, and so on. For more information, see Save Data Sources.

Packaged Data Source (.tdsx) – Tableau packaged data source files have the .tdsx file extension. A packaged data source is a zip file that contains the data source file (.tds) described above as well as any local file data such as extract files (.hyper or .tde), text files, Excel files, Access files, and local cube files. Use this format to create a single file that you can then share with others who may not have access to the original data stored locally on your computer. For more information, see Save Data Sources.

What are Tableau data types?

We saw that there are seven basic data types in Tableau namely, **String, Numeric, Boolean, Date, Date & time, Geographic and Mixed or cluster**. Tableau is capable of detecting the data type of newly uploaded values and assigns it to them instantly

What is the difference between filter and parameter?

Remember, filters are different than parameters. Filters are specific to a data source, parameters are not. Filters are created on the worksheet level. Parameters can be reused across the entire workbook. Both of these distinctions are the reason we must use a parameter instead of a filter when we are trying to filter across different data sources.

Filter is something where you can filter out multiple things that you want to see in the graph.

Parameter is something which can be created separately for certain condition based analysis. For Example, i want to filter out products which have sales between 200$ to 500$. You can create this condition in parameter. You can do the same thing with filter as well. But major difference is that we cannot use these filters in any further calculations but parameters can be used in calculations and sets.

Types of joins in Tableau

Inner
When you use an inner join to combine tables, the result is a table that contains values that have matches in both tables.
When a value doesn't match across both tables, it is dropped entirely.

Left
When you use a left join to combine tables, the result is a table that contains all values from the left table and corresponding matches from the right table.
When a value in the left table doesn't have a corresponding match in the right table, you see a null value in the data grid.

Right
When you use a right join to combine tables, the result is a table that contains all values from the right table and corresponding matches from the left table.
When a value in the right table doesn't have a corresponding match in the left table, you see a null value in the data grid.

Full outer
When you use a full outer join to combine tables, the result is a table that contains all values from both tables.
When a value from either table doesn't have a match with the other table, you see a null value in the data grid.

Union
Though union is not a type of join, union is another method for combining two or more tables by appending rows of data from one table to another. Ideally, the tables that you union

have the same number of fields, and those fields have matching names and data types. For more information about union,

how many maximum tables can you join in tableau

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What are groups?

A Tableau Group is **a set of multiple members combined in a single dimension to create a higher category of the dimension**. Tableau allows the grouping of single-dimensional members and automatically creates a new dimension adding the group at the end of the name.

How to create an hierarchy in Tableau?

To create a hierarchy: In the Data pane, drag a field and drop it directly on top of another field. Note: When you want to create a hierarchy from a field inside a folder, right-click (control-click on a Mac) the field and then select Create Hierarchy. When prompted, enter a name for the hierarchy and click OK.

What are sets?

Group: **Simplifies large numbers of dimension members** by combining them into higher-level categories. Set: A subset of your data that meets certain conditions based on existing dimensions

What are the different filters in Tableau and how are they different from each other?

Extract Filters
Data Source Filters
Context Filters
Dimension Filters
Measure Filters

How to create a calculated field in Tableau?

In Tableau, select Analysis > Create Calculated Field.
In the Calculation Editor that opens, do the following: Enter a name for the calculated field. ...
When finished, click OK. The new calculated field is added to Measures in the Data pane because it returns a number.

What is a dual axis?

This is mainly used when two mesaures are used in dual lines graphs or charts. One axis represents one measure and other axis represents second mesaure. Both axis will be parallel to each other with different range of values from the source data.

What is the difference between discrete and continuous in Tableau?

It is easy to know if a field is being used as discrete or continuous based on its color. Blue indicates that a field is discrete, while green indicates that a field is continuous.
Continuous means "forming an unbroken whole, without interruption"; discrete means "individually separate and distinct." In Tableau, fields can be either continuous or discrete. When you drag a field from the Data pane to Columns or Rows, the values are continuous by default and Tableau creates an axis.