**Question\_1:** Explain in detail about area graphs and line graphs in tableau and how to create them with example.

**Ans:**

Area Graphs and Line Graphs are two of the most popular and commonly used chart types in Tableau for visualizing trends over time.

Area Graph: An area graph shows a graph in which the area between the x-axis and the line connecting data points is shaded or filled with color. The filled area between the x-axis and line makes it easy to compare values across different categories, especially when there are multiple categories.

Steps to create an area graph in Tableau:

1. Open a new worksheet and drag the "Date" field to the Columns shelf and the "Sales" field to the Rows shelf.
2. Change the mark type to "Area" by selecting "Area" from the drop-down menu in the Marks card.
3. Drag the "Product Category" field to the Color shelf to color-code the area graph by product category.

Example: Let's say we have a dataset of monthly sales by product category, and we want to create an area graph to visualize the trend in sales over time.

1. Open a new worksheet and drag the "Order Date" field to the Columns shelf and the "Sales" field to the Rows shelf.
2. Change the mark type to "Area".
3. Drag the "Product Category" field to the Color shelf to color-code the area graph by product category.

Line Graph: A line graph shows a graph in which a line connects data points, which can be used to show trends over time, comparing data points and identifying relationships between them.

Steps to create a line graph in Tableau:

1. Open a new worksheet and drag the "Date" field to the Columns shelf and the "Sales" field to the Rows shelf.
2. Change the mark type to "Line".
3. Drag the "Product Category" field to the Color shelf to color-code the line graph by product category.

Example: Let's say we have a dataset of daily website traffic by channel, and we want to create a line graph to visualize the trend in website traffic over time.

1. Open a new worksheet and drag the "Date" field to the Columns shelf and the "Visits" field to the Rows shelf.
2. Change the mark type to "Line".
3. Drag the "Channel" field to the Color shelf to color-code the line graph by channel.

**Question\_2:** What are the different steps in grouping fields and combining tables in tableau?

**Ans:**

Grouping fields and combining tables are two common data manipulation techniques used in Tableau.

Grouping Fields:

1. Open your Tableau workbook and navigate to the worksheet where you want to group fields.
2. Select the fields you want to group together by holding down the Ctrl key and clicking on each field name.
3. Right-click on one of the selected fields and choose "Group" from the drop-down menu.
4. Enter a name for the new group and click "OK".
5. You can now use this new group of fields in your analysis by dragging it onto the Rows or Columns shelf.

Combining Tables:

1. Open your Tableau workbook and navigate to a new worksheet.
2. Click on the "Connect to Data" button and select the data sources you want to combine.
3. Drag and drop each table onto the worksheet. Tableau will automatically link the tables based on any common fields.
4. If the tables are not automatically linked, you can manually link them by dragging a field from one table to a matching field in the other table.
5. You can now use the combined data source in your analysis by dragging fields from both tables onto the Rows or Columns shelf.

**Question\_3:** What is the use of color and size options in marks cart of tableau.

**Ans:**

In Tableau, the marks card controls how your data is displayed in your visualization. The color and size options on the marks card are used to visually encode additional information about your data points.

Color:

Using color to represent data points is a powerful tool for visually encoding categorical or qualitative data. For example, if you have a scatter plot showing the performance of different products, you could color-code the points by product category. This would allow the viewer to easily distinguish between the different categories without having to read the labels.

Size:

Size is often used to encode quantitative data. By increasing or decreasing the size of the data points, you can convey the relative value of a particular data point compared to others. For example, if you have a bubble chart showing the revenue of different companies, you could size the bubbles based on revenue to emphasize the largest companies.

**Question\_4:** What are the different types of joins supported in tableau.

**Ans:**

Tableau supports several types of joins between tables, which allow you to combine data from multiple sources. Here are the main types of joins in Tableau:

1. Inner Join: An inner join returns only the rows from each table that have matching values in both tables. This type of join is commonly used to combine data from two or more tables where there are matching records.
2. Left Join: A left join returns all the rows from the left table and the matching rows from the right table. If there are no matching rows in the right table, the result will contain null values for the right table columns.
3. Right Join: A right join returns all the rows from the right table and the matching rows from the left table. If there are no matching rows in the left table, the result will contain null values for the left table columns.
4. Full Outer Join: A full outer join returns all the rows from both tables, including null values where there are no matches in the other table.
5. Cross Join: A cross join returns all possible combinations of the rows from both tables. This type of join is rarely used because it can result in a very large number of rows.

**Question\_5:** Explain the steps to create a dashboard in tableau with examples.

**Ans:**

Steps to create a dashboard in Tableau:

Example: Let's say we have two worksheets, one showing sales by region and the other showing sales by product category. We want to create a dashboard that shows both views side by side.

1. Open your Tableau workbook and make sure you have the two worksheets created. In this example, one worksheet shows sales by region and the other shows sales by product category.
2. Click on the "New Dashboard" button at the bottom of the Tableau interface or select "New Dashboard" from the "Dashboard" menu.
3. In the dashboard interface, drag a "Horizontal" container onto the blank canvas.
4. Drag the worksheet showing sales by region onto the left side of the container.
5. Drag the worksheet showing sales by product category onto the right side of the container.
6. Adjust the size of the worksheets by dragging the edges of the container. You can also adjust the spacing between the worksheets by dragging the border between them.
7. Add a title to your dashboard by dragging a text box onto the canvas and typing in your desired title.
8. Add filters or other dashboard elements as desired. For example, you could add a filter that allows viewers to select a specific region or product category.
9. Customize your dashboard by using the formatting options in the "Dashboard" menu. You can change the background color, font, and other settings to make your dashboard look polished and professional.
10. Save your dashboard by selecting "Save" from the "File" menu or by clicking on the "Save" button in the top left corner of the dashboard interface.

**Question\_6:** Explain in detail about heatmaps and scatter plots in tableau and how to create them with examples.

**Ans:**

**Heatmaps in Tableau:** A heatmap is a visualization that displays the magnitude of values in a matrix by using different colors. The intensity of the color indicates the density or frequency of the data. In Tableau, heatmaps can be created using the "Density" mark type.

Steps to create a heatmap in Tableau:

1. Connect to your data source and drag the fields you want to visualize onto the Rows and Columns shelves.
2. In the "Marks" card, select "Density" from the drop-down menu to change the mark type to a heatmap.
3. Adjust the color scale and opacity as desired to highlight the density of the data.
4. Add labels, titles, and other formatting as desired.

Example: Let's say we have a dataset of customer orders that includes the total sales for each order and the shipping region. We want to create a heatmap that shows the density of sales by region.

1. Connect to the data source and drag the "Sales" field to the Columns shelf and the "Shipping Region" field to the Rows shelf.
2. In the "Marks" card, select "Density" from the drop-down menu.
3. Adjust the color scale and opacity as desired to highlight the density of the data.
4. Add labels and a title to the heatmap.

**Scatter plots in Tableau:** A scatter plot is a visualization that displays the relationship between two variables. Each data point is represented as a dot, with one variable shown on the x-axis and the other variable shown on the y-axis. Scatter plots can be useful for identifying patterns, trends, and outliers in data. In Tableau, scatter plots can be created using the "Scatter" mark type.

Steps to create a scatter plot in Tableau:

1. Connect to your data source and drag the two fields you want to compare onto the Rows and Columns shelves.
2. In the "Marks" card, select "Scatter" from the drop-down menu to change the mark type to a scatter plot.
3. Adjust the size and color of the marks as desired to highlight different aspects of the data.
4. Add labels, titles, and other formatting as desired.

Example: Let's say we have a dataset of employee salaries and years of experience. We want to create a scatter plot that shows the relationship between salary and experience.

1. Connect to the data source and drag the "Salary" field to the Columns shelf and the "Years of Experience" field to the Rows shelf.
2. In the "Marks" card, select "Scatter" from the drop-down menu.
3. Adjust the size and color of the marks as desired to highlight different aspects of the data, such as job title or gender.
4. Add labels and a title to the scatter plot.

**Question\_7:** How to create table calculations in tableau with examples.

**Ans:**

Table calculations in Tableau are used to calculate values based on a specific set of data points in a table, rather than the entire dataset. Table calculations can be used to perform running totals, percent of total, moving averages, and other calculations.

Steps to create table calculations in Tableau:

1. Open the worksheet that you want to create a table calculation in.
2. Select the field that you want to create the table calculation for.
3. Click on the "Analysis" menu and select "Create Calculated Field".
4. In the "Edit Calculation" dialog box, enter the formula for the table calculation.
5. Click "OK" to create the table calculation.
6. Drag the table calculation to the appropriate location in your visualization.

Example 1: Running Total A running total is a table calculation that shows the cumulative sum of a field over time or another dimension. Let's say we have a dataset of monthly sales by region, and we want to create a running total of sales by region.

1. Open a new worksheet and drag the "Sales" field to the Columns shelf and the "Order Date" field to the Rows shelf.
2. Right-click on the "Sales" field in the view and select "Add Table Calculation".
3. In the "Table Calculation" dialog box, select "Running Total" from the drop-down menu.
4. Select "Order Date" as the "Compute Using" field and "Ascending" as the direction.
5. Click "OK" to create the running total.
6. Drag the "Region" field to the Color shelf to group the running total by region.

Example 2: Percent of Total A percent of total is a table calculation that shows the percentage of a field's value in relation to the total value of that field. Let's say we have a dataset of sales by product category, and we want to create a percent of total calculation for each category.

1. Open a new worksheet and drag the "Sales" field to the Columns shelf and the "Product Category" field to the Rows shelf.
2. Right-click on the "Sales" field in the view and select "Add Table Calculation".
3. In the "Table Calculation" dialog box, select "Percent of Total" from the drop-down menu.
4. Select "Product Category" as the "Compute Using" field and "Table (Across)" as the direction.
5. Click "OK" to create the percent of total calculation.
6. Drag the "Product Category" field to the Label shelf to display the percentage value for each category.

**Question\_8:** Explain in detail the distribution bands in tableau and how to create them with examples.

**Ans:**

In Tableau, distribution bands are used to show the frequency of values within a particular range or bin. The distribution bands are often used to identify patterns, outliers, and gaps in the data.

Creating distribution bands in Tableau involves the following steps:

1. Create a histogram by dragging the desired dimension (the field to be binned) to the Columns shelf and the Measure (the field to be counted) to the Rows shelf.
2. Right-click the axis and select "Edit Axis" from the dropdown menu.
3. In the Axis dialog box, select "Bins" from the drop-down menu, and set the bin size to the desired value.
4. Click "OK" to close the Axis dialog box.

Now, we have a histogram showing the distribution of values in our dataset.

Next, we can add distribution bands to the histogram to better visualize the frequency of values within a particular range or bin. Here's how to do it:

1. Right-click the axis and select "Add Reference Line" from the dropdown menu.
2. In the Add Reference Line dialog box, select "Distribution" from the drop-down menu and choose the appropriate options for the distribution band.
3. Click "OK" to close the Add Reference Line dialog box.

There are two types of distribution bands that can be added to a histogram in Tableau:

1. Standard Deviation Band: This shows the distribution of values within a certain number of standard deviations from the mean. By default, Tableau adds two standard deviation bands to the histogram.
2. Percentile Band: This shows the distribution of values within a certain percentile range.

Example:

Let's say we have a dataset of monthly sales by region, and we want to create a histogram with standard deviation bands to visualize the distribution of sales.

1. Open a new worksheet and drag the "Sales" field to the Rows shelf.
2. Right-click the "Sales" axis and select "Edit Axis" from the dropdown menu.
3. In the Axis dialog box, select "Bins" from the drop-down menu and set the bin size to 5000.
4. Click "OK" to close the Axis dialog box.
5. Right-click the "Sales" axis again and select "Add Reference Line" from the dropdown menu.
6. In the Add Reference Line dialog box, select "Distribution" from the drop-down menu.
7. Select "Standard Deviation" from the "Line" drop-down menu and choose the desired options for the standard deviation band.
8. Click "OK" to close the Add Reference Line dialog box.

The resulting histogram will show the distribution of sales by region, with standard deviation bands indicating the frequency of sales within a certain number of standard deviations from the mean.

**Question\_9:** Explain the steps to create bar and pie charts in tableau with examples.

**Ans:**

Bar charts and pie charts are two of the most commonly used visualization types in Tableau. Here are the steps to create each type of chart along with examples:

Creating a Bar Chart in Tableau:

1. Open a new worksheet and drag the desired dimension to the Columns shelf and the measure to the Rows shelf. For example, if we want to create a bar chart showing sales by region, we would drag the "Region" field to the Columns shelf and the "Sales" measure to the Rows shelf.
2. Tableau will automatically create a bar chart based on the selected fields. However, you can customize the chart further by adding filters, color-coding the bars, or adjusting the formatting.
3. To color-code the bars by a certain dimension, drag that dimension to the Color shelf. For example, if we want to color-code the sales by region by year, we would drag the "Year" field to the Color shelf.
4. To adjust the formatting, click on the "Format" tab and choose the desired options for the chart's appearance.

Example: Let's say we have a dataset of monthly sales by region, and we want to create a bar chart to visualize the sales by region.

1. Open a new worksheet and drag the "Region" field to the Columns shelf and the "Sales" measure to the Rows shelf.
2. Tableau will automatically create a horizontal bar chart showing the sales by region.
3. To color-code the bars by a certain dimension, drag the "Category" field to the Color shelf.
4. To adjust the formatting, click on the "Format" tab and choose the desired options for the chart's appearance.

Creating a Pie Chart in Tableau:

1. Open a new worksheet and drag the desired dimension to the "Pie" section of the "Marks" card and the measure to the "Angle" section of the "Marks" card. For example, if we want to create a pie chart showing the percentage of sales by category, we would drag the "Category" field to the "Pie" section and the "Sales" measure to the "Angle" section.
2. Tableau will automatically create a pie chart based on the selected fields. However, you can customize the chart further by adding filters or adjusting the formatting.
3. To adjust the formatting, click on the "Format" tab and choose the desired options for the chart's appearance.

Example: Let's say we have a dataset of monthly sales by category, and we want to create a pie chart to visualize the percentage of sales by category.

1. Open a new worksheet and drag the "Category" field to the "Pie" section of the "Marks" card and the "Sales" measure to the "Angle" section of the "Marks" card.
2. Tableau will automatically create a pie chart showing the percentage of sales by category.
3. To adjust the formatting, click on the "Format" tab and choose the desired options for the chart's appearance.

**Question\_10:** How to add story points to dashboard.

**Ans:**

Adding story points to a dashboard in Tableau is a great way to provide context and insights to your data. Here are the steps to add story points to a dashboard:

1. Create a new dashboard by clicking on the "New Dashboard" button on the Tableau homepage.
2. Once you have created your dashboard, click on the "New Story" button at the bottom of the screen.
3. Tableau will open the Story Editor, where you can add and edit your story points. The first step is to create a title for your story point by clicking on the "Add Title" button.
4. To add a new story point, click on the "Add Blank" button or the "Duplicate" button to duplicate an existing story point. Each story point can contain its own charts and visualizations.
5. To add visualizations to a story point, simply drag and drop the desired fields onto the view. You can also adjust the formatting and layout of each visualization to make it look exactly the way you want it to.
6. Once you have added all of your visualizations to a story point, you can add annotations or text boxes to provide additional context to your data.
7. Repeat steps 4-6 for each additional story point that you want to add.
8. Once you have finished creating your story points, you can preview your entire story by clicking on the "Preview" button. This will allow you to see how your story will look when it is presented to others.
9. When you are satisfied with your story, save it and add it to your dashboard by dragging and dropping it onto the dashboard canvas.