Data Visualization

1 Mark Questions

Previous Year Question Paper : 1

1. What are Visualization skills for masses ?

A. You have a certain design style based on personal taste

- You just play around until something emerges that you instinctively like the look of .
- You trust software defaults and don't go beyond that in terms of modifying the design.
- You have limited software capabilities, so you don't know how to modify a design.
- You just do as the boss tells you—"can you do me some fancy charts? "

2. Define Role of Data Scientist in Data Visualization ?

A. The data scientist is characterized as the data miner, wearing the miner's hat. They are responsible for sourcing, acquiring, handling, and preparing the data. This means demonstrating the technical skills to work with data sets large and small and of many different types. Once acquired, the data scientist is responsible for examining and preparing the data. And he also holds the statistical , mathematical, patterns, tactical knowledge also.

3. Define Tree hierarchy in Data visualization ?

A. It's Similar to the bubble hierarchy, this technique presents the organization and structure of data through a hierarchical tree network. And it takes both categorical and quantitative data into the hierarchy.

4. What is arrangement in visualization design topic ?

A. You have established how you are going to represent your data, you've identified your visual identity through color, the choices around static or interactive design have been rationalized, and you have identified the range of annotation requirements.
For our final layer, we need to consider how to arrange our design in terms of the layout, placement, and organization of all visible elements.

5. What is design solution in data visualization ?

A. The design solution in the data visualization is filled with styles and order of arranging of the stories in a dashboard here stories means some group of visuals together and they are placed in a dashboard.

6. What is statistical analysis tool ?

A. This category covers some of the main charting productivity tools and the more effective visual analytics or Business Intelligence (BI) applications that offer powerful visualization capabilities. Not only perform

tools and visualization and they provide a data analysis on the dataset.

7. What is a dimension ?

A. Dimensions **contain qualitative values (such as names, dates, or geographical data)**. You can use dimensions to categorize, segment, and reveal the details in your data. Dimensions affect the level of detail in the view. Measures contain numeric, quantitative values that you can measure. And volume of the data, rows, columns, size, visuals in the data or dataset.

8. Define independent axes in the tableau ?

A. This **default setting where the axes share the same range** is helpful because it provides an 'apples to apples' comparison across the four rows. However, it can be difficult to see the trends for each individual row.

9. Define pie chart ?

A. Pie charts are probably the most contentious chart type and attract much negative sentiment. While we know it is harder to accurately interpret angles and judge the area of segments compared to other visual variables, the negativity is arguably more a reflection of their relentless misuse.

10. What is a discreate data ?

A. Discrete data is **a numerical type of data that includes whole, concrete numbers with specific and fixed data values determined by counting**. Continuous data includes complex numbers and varying data values measured over a particular time interval.

Previous Year Question Paper : 2

1. What is predominantly technology related to the data visualization ?

A. The design challenges involved in data visualization are predominantly technology related; the creation and execution of a visualization design will typically require the assistance of a variety of applications and programs. However, the focus of this methodology is intended to be technology-neutral, placing an emphasis on the concepting, reasoning, and decision-making.

2. What is a quote from Stephen few from his book “ Show me the Numbers. “ ?

A. The following is a quote from Stephen Few from his book Show Me the Numbers: "The skills required for most effectively displaying information are not intuitive and rely largely on principles that must be learned."

3. Define Tree hierarchy ?

A. It's Similar to the bubble hierarchy, this technique presents the organization and structure of data through a hierarchical tree network. And it takes both categorical and quantitative data into the hierarchy.

4. Define Analytical visualizations ?

A. "A visualization is more effective than another visualization if the information conveyed by one visualization is more readily perceived than the information in the other." This quote perfectly captures the priority and intent behind pragmatic or analytical visualizations. Some might term them simple or boring but that is short-sighted and lacking in appreciation for the setting in which these types of data portrayal is vital.

5. List out taxonomy of data visualization methods ?

A. The taxonomy of the data visualization methods are :

- Comparing Categoreis
- Assessing hierarchies and part hole relationships
- Showing changes over time
- Plotting connections and relationships
- Mapping geo spatial data

6. What is the design feature that might be included in the visualization ?

A. Here, we should consider the idea of deliberate design, which means that the inclusion, exclusion, and execution of every single mark, characteristic, and design feature is done for a reason. And data representation and data presentation also.

7. Mention some statistical and charting analysis tools used for data visualizations ?

A. Some of the best data visualization tools include Google Charts, Tableau, Grafana, Chartist, FusionCharts, Datawrapper, Infogram, and ChartBlocks etc. These tools support a variety of visual styles, be simple and easy to use, and be capable of handling a large volume of data.

8. Differentiate formatting and annotating accuracy ?

A. Formatting accuracy:

Check the consistency of your typography, in terms of type, style, and size. Make sure your color usage is consistent down to the RGB or CMYK code level.

Annotation accuracy:

Read through all your titles, labels, introductory text, credits, captions, and check any units that you have included. It's not just about spelling or grammatical errors but checking to see if things make sense and are succinctly expressed.

9. Give difference between discrete and countinous data?

BASIS FOR COMPARISON	DISCRETE DATA	CONTINUOUS DATA
Meaning	Discrete data is one that has clear spaces between values.	Continuous data is one that falls on a continuous sequence.
Nature	Countable	Measurable
Values	It can take only distinct or separate values.	It can take any value in some interval.
Graphical Representation	Bar Graph	Histogram
Tabulation is known as	Ungrouped frequency distribution.	Grouped frequency distribution.
Classification	Mutually Inclusive	Mutually Exclusive
Function graph	Shows isolated points	Shows connected points
Example	Days of the week	Market price of a product

10. What is a measure ?

A. 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).

Previous Year Question Paper : 3

1. What are the key elements in the data visualization ?

A. The key elements in the data visualization are :

- Representation
- Presentation
- Visual perception abilites
- Amplify cognition

2. On what factors the focus of data visualization intends?

A. The factors based on data visualization are :

- Visualization skills of masses
- The data visualization methodlogy
- Visualization design objectives

3. List the 8 hats of the data visualization ?

A. The 8 hats of data visualization are :

- The initiator
- The data scientist
- The journalist
- The computer scientist
- The designer
- The cognitive scientist
- The communicator
- The project manager

4. What is the most important features of the visualization design ?

A. The important features of the visualization design are:

- Titles & introduction
- User guides, Narrative story
- Visual annotations and legends
- Data sources, labels
- Presentation & Represntation

5. what are the things to be taken care of the annotation of the data presentation ?

A. It is about taking care of your audience, recognizing who they are, what they might know already, and what they don't know. Done well, annotation can help explain and facilitate the viewing and interpretive experience.

6. what is visualization anatomy of data representation ?

A. The process of identifying the most effective and appropriate solution for representing our data is unquestionably the most important feature of our visualization design. Working on this layer involves making decisions that cut across the artistic and scientific foundations of the field.

7. What are stress and strains that emerges in the construction process of design solution ?

A. The part of the design process where stresses and strains emerge—the ill-timed bugs, dataset problems, functional failures, unwanted interference. During this stage it is important that you keep your cool and see your tasks through as efficiently as possible.

8. Define data aggregation ?

A. Data aggregation is any process in which data is brought together and conveyed in a summary form. It is typically used prior to the performance of a statistical analysis.

9. Differentiate discrete and continous data ?

BASIS FOR COMPARISON	DISCRETE DATA	CONTINUOUS DATA
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10. List the 3 basic steps that involved in creating any tableau analysis report ?

A. There are three basic steps involved in creating any Tableau data analysis report.

- Connect to a data source – It involves locating the data and using an appropriate type of connection to read the data.
- Choose dimensions and measures – This involves selecting the required columns from the source data for analysis.
- Apply visualization technique – This involves applying required visualization methods, such as a specific chart or graph type to the data being analyzed.

Previous Year Question Paper : 4

1. Comment on " tableau as a bi tool. " ?

A. Tableau is the most popular and leading BI tool presently. It has the best visualization capabilities with a perfect front-end graphical UI. It also has some built-in analytics modules which can be used directly by the user on their data.

2. State the benfits of visualization ?

A. Visualization allows business users to recognize relationships and patterns between the data, and also gives it greater meaning. By exploring these patterns, users can focus on specific areas that need attention in the data, to determine the importance of these areas to move their business forward.

3. List the roles and responsilbilites of an data scientist ?

A. They are responsible for sourcing, acquiring, handling, and preparing the data. This means demonstrating the technical skills to work with data sets large and small and of many different types. And they also use the exploratory visual and pattern analysis.

4. Compare histogram and bar chart ?

Histogram	Bar Graph
The histogram is a term that refers to a graphical representation that shows data by way of bars to display the frequency of numerical data.	The bar graph is a graphical representation of data that uses bars to compare different categories of data.
Distribution of non-discrete variables.	Comparison of discrete variables.
Bars touch each other, so there are no spaces between bars.	Bars never touch each other, so there are spaces between bars.
In this type of graph, elements are grouped so that they are considered as ranges.	In this type of graph, elements are taken as individual entities.
Histogram width may vary.	The bar chart is mostly of equal width.
To display the frequency of occurrences.	To compare different categories of data.
In Histogram, the data points are grouped and rendered based on its bin value.	In the Bar graph, each data point is rendered as a separate bar.
The items of the Histogram are numbers, which should be	As opposed to the bar graph, items should be

categorized to represent data range.	considered as individual entities.
In Histogram, we cannot rearrange the blocks.	Bar graph, it is common to rearrange the blocks, from highest to lowest

5. give an example for part to whole relationship ?

A. Examples for the part to whole relationships are :

- Pie Chart
- Stacked bar chart
- Square or waffle pie
- Tree map
- Circle mapping diagram
- Bubble hierarchy
- Tree hierarchy

6. State the factors contributing to a good visualization design ?

A. Factors contributing the good visualization are :

- What is the reason for its existence?
- For whom are we creating it and how well defined are the requirements?
- What function is it seeking to fulfill?
- What is the likely tone of the design we're intending to portray?

7. List the tools used in mapping ?

A. The tools used in mapping are :

- Arc GIS
- IndieMapper
- Instant Atlas
- Geo Commons
- Carto DB
- Poly maps
- KartoGraph
- Open Street map
- Tile Mill

8. Which chart is used to represent the continuous data ?

A. Bar graphs, line graphs, histograms are used to represent the continuous data.

9. list the databases which can be connected to the tableau ?

A. The databases which tableau can connect are :

- Esri Connector.
- Connect Tableau Desktop to Salesforce CDP.
- Salesforce Marketing Cloud.
- Web Data Connector.
- Other Databases (JDBC) Tableau and JDBC.
- Other Databases (ODBC)

10. Differentiate between measure and dimension ?

A. **Measures:** field is aggregated

Dimensions: splits apart another field or measure into groups.

End Of Questions