

## INFO 7390 ADVANCES IN DATA SCIENCE AND ARCHITECTURE

### WEEK 3: Class Quiz

Instructions: This is a multiple-choice quiz. Choose one correct answer out of the given set of questions.

1) Why is it beneficial to demonstrate Data Improvements through Graphics?

- A) To make the data more confusing and difficult to understand.
- B) To create a visually appealing presentation.
- C) To help conceptualize and understand complex causal relationships more easily.
- D) To hide patterns and anomalies within the data.
- E) To engage the audience with colorful visuals.

Correct Answer: C) To help conceptualize and understand complex causal relationships more easily.

2) What is one of the benefits of using graphics for data improvement?

- A) Making data analysis more complex.
- B) Decreasing engagement with the audience.
- C) Identifying patterns and anomalies in the data.
- D) Reducing the need for decision support.
- E) Adding unnecessary visual elements to the presentation.

Correct Answer: C) Identifying patterns and anomalies in the data.

3) What is the first step in creating informative graphics that showcase data improvements?

- A) Understanding your data
- B) Choosing the right chart type
- C) Fine-tuning the visualization
- D) Using data storytelling

Correct Answer: A) Understanding your data

4) Which type of chart is most suitable for comparing categorical data, such as sales across different product categories?

- A) Line chart
- B) Bar chart
- C) Pie chart
- D) Scatter plot

Correct Answer: B) Bar chart

5) Which of the following is NOT one of the categories of charts mentioned for representing data?

- A) Comparison
- B) Composition
- C) Relationship
- D) Highlights

Correct Answer: D) Highlights

6) Which category of charts is most suitable for displaying how a whole is divided into its individual parts?

- A) Comparison
- B) Composition
- C) Relationship
- D) Distribution

Correct Answer: B) Composition

7) What is one of the key purposes of using charts for data representation, as mentioned in the introduction?

- A) To create complexity in data visualization.
- B) To confuse decision-makers.
- C) To highlight points and make insights actionable.

D) To reduce the need for decision-making.

Correct Answer: C) To highlight points and make insights actionable.

8) When choosing a chart type, what should be the primary consideration?

A) The number of colors used in the chart.

B) The size of the chart.

C) How well it aligns with the analytical question and data.

D) The complexity of the chart's design.

Correct Answer: C) How well it aligns with the analytical question and data.

9) Which category of charts is best suited for showing how data values change over time?

A) Comparison

B) Composition

C) Distribution

D) Trends

Correct Answer: D) Trends

10) Which category of charts is ideal for illustrating the correlation between two or more variables?

A) Comparison

B) Composition

C) Relationship

D) Trends

Correct Answer: C) Relationship

11) What is the primary purpose of a scatter chart?

A) To display how data values change over time.

B) To illustrate the correlation between two or more variables.

C) To show the distribution of data across categories.

D) To represent data as slices of a pie.

Correct Answer: B) To illustrate the correlation between two or more variables.

12) Which chart type is suitable for comparing means or percentages between 2 to 7 different groups, especially when comparing mutually exclusive categories?

A) Vertical Bar Chart

B) Horizontal Bar Chart

C) Area Graph

D) Scatter Chart

Correct Answer: A) Vertical Bar Chart

13) What type of chart is typically used to explain changes in performance or revenue over time, such as explaining the change in earnings from one year to the next?

A) Waterfall chart

B) Funnel chart

C) Mekko chart

D) Grid chart

Correct Answer: A) Waterfall chart

14) When would you use a grid chart, which can display a third dimension in the form of small pie charts as plot symbols?

A) To represent data as slices of a pie.

B) To show how data values change over time.

C) To display relationships between expressions and dimensions.

D) To illustrate changes in performance or revenue.

Correct Answer: C) To display relationships between expressions and dimensions.

15) When is a scatter plot chart most useful, and what does it allow for?

- A) It is useful for displaying single-point data and allows for quick and easy comparisons between competing variables.
- B) It is used for showing data in flows and processes and allows for proportional segment area representation.
- C) It is used for time series data and displays data points in a circular pattern.
- D) It is suitable for presenting dimensions and expressions in table form.

Correct Answer: A) It is useful for displaying single-point data and allows for quick and easy comparisons between competing variables.

16) Which aspect of visual design primarily involves strategically implementing images, colors, fonts, and other elements to enhance the user experience and build trust and interest in the brand?

- A) Typography
- B) Repetition
- C) Contrast
- D) White Space

Correct Answer: C) Contrast

17) Which basic principle of visual design is concerned with the distribution of visual elements to create a sense of equilibrium and stability in a design?

- A) Contrast
- B) Movement
- C) Balance
- D) Variety

Correct Answer: C) Balance

18) Which of the following is NOT one of the seven basic typographical design elements?

- A) Typeface
- B) Consistency
- C) Texture

D) Hierarchy

Correct Answer: C) Texture

19) What are the three basic kinds of typefaces commonly used in typography?

- A) Serif, bold, and italic
- B) Sans-serif, decorative, and script
- C) Serif, sans-serif, and cursive
- D) Serif, sans-serif, and decorative

Correct Answer: B) Serif, sans-serif, and decorative

20) What is the primary role of the typographical design element "contrast" in typography?

- A) To ensure consistency in font usage.
- B) To create a visually pleasing color scheme.
- C) To emphasize differences between text elements.
- D) To control the alignment of text.

Correct Answer: C) To emphasize differences between text elements.

21) Which of the following typographical design elements focuses on the even distribution of elements on a page and their alignment to create a visually appealing layout?

- A) Color
- B) Hierarchy
- C) Alignment
- D) Typeface

Correct Answer: C) Alignment

22) What is the primary purpose of hierarchy in visual design?

- A) To create an imbalance of elements for a dynamic composition.
- B) To maintain consistent font styling throughout a design.
- C) To organize ideas and help viewers identify different categories of information.
- D) To use various colors and typefaces to enhance text appeal.

Correct Answer: C) To organize ideas and help viewers identify different categories of information.

23) How can contrast be achieved in typography design?

- A) By using the same font style and color throughout.
- B) By maintaining consistent alignment for all elements.
- C) By varying size, typeface, weight, color, and style of text.
- D) By avoiding the use of italics or serif typefaces.

Correct Answer: C) By varying size, typeface, weight, color, and style of text.

24) Which design principle emphasizes using the same font styling for the same information to avoid a confusing and messy look?

- A) Hierarchy
- B) Contrast
- C) Consistency
- D) Alignment

Correct Answer: C) Consistency

25) What does alignment refer to in design, and why is overusing center alignment discouraged?

- A) Alignment refers to the choice of colors in a design, and center alignment is preferred for body text.
- B) Alignment refers to the orientation of text or objects, and center alignment can create an imbalanced look.
- C) Alignment refers to the use of whitespace, and center alignment is recommended for a clean design.
- D) Alignment refers to the balance of elements, and center alignment enhances readability.

Correct Answer: B) Alignment refers to the orientation of text or objects, and center alignment can create an imbalanced look.

26) How does whitespace contribute to visual design?

- A) Whitespace enhances color schemes in a design.
- B) Whitespace creates a pleasing visual experience and can improve readability.
- C) Whitespace increases the size of text elements.
- D) Whitespace draws attention away from text.

Correct Answer: B) Whitespace creates a pleasing visual experience and can improve readability.

