The information provided in the multiple-choice questions and answers is based on common knowledge in the fields of Exploratory Data Analysis (EDA) and Data Visualization, which are fundamental topics in data science and analytics. The questions were formulated based on standard practices and commonly used functions and libraries in Python, such as Pandas, Matplotlib, and Seaborn.

For further reading on these topics please visit the below webpages.

1. Pandas Documentation:[Pandas User Guide](https://pandas.pydata.org/pandas-docs/stable/user\_guide/index.html)

2. Matplotlib Documentation: [Matplotlib User Guide](https://matplotlib.org/stable/users/index.html)

3. Seaborn Documentation: [Seaborn User Guide](https://seaborn.pydata.org/tutorial.html)

4. Kaggle Courses on EDA and Data Visualization: [Kaggle Learn](https://www.kaggle.com/learn/overview)

5. Books on Data Science:

* "Python for Data Analysis" by Wes McKinney
* "Data Science from Scratch" by Joel Grus
* “Python tools for scientists An introduction to using Anaconda, Jupyterlab and Python scientific library” by Lee Vaughan
* “Learning Scientific Programming with Python” by Christian Hill

Exploratory Data Analysis (EDA)

1. Which of the following is not a step in EDA?

a. Data Cleaning

b. Data Transformation

c. Data Warehousing

d. Data Visualization

Answer: c. Data Warehousing

2. What is the purpose of EDA?

a. To summarize the main characteristics of a dataset

b. To clean the data

c. To create machine learning models

d. To store data

Answer: a. To summarize the main characteristics of a dataset

3. Which Python library is commonly used for EDA?

a. TensorFlow

b. Pandas

c. Scikit-learn

d. Flask

Answer: b. Pandas

4. Which method is used to check for missing values in a DataFrame in Pandas?

a. isnull()

b. dropna()

c. fillna()

d. replace()

Answer: a. isnull()

5. What type of plot is typically used to understand the distribution of a single continuous variable?

a. Bar plot

b. Histogram

c. Box plot

d. Scatter plot

Answer: b. Histogram

6. Which of the following plots is useful for identifying outliers?

a. Line plot

b. Pie chart

c. Box plot

d. Area plot

Answer: c. Box plot

7. What is the purpose of the describe() function in Pandas?

a. To provide descriptive statistics of a DataFrame

b. To plot a DataFrame

c. To clean a DataFrame

d. To merge DataFrames

Answer: a. To provide descriptive statistics of a DataFrame

8. Which statistic is not provided by the describe() function in Pandas?

a. Mean

b. Median

c. Standard deviation

d. Count

Answer: b. Median

9. What does the term 'correlation' refer to in the context of EDA?

a. The process of cleaning data

b. The relationship between two variables

c. The average value of a dataset

d. The range of a dataset

Answer: b. The relationship between two variables

10. Which of the following methods is used to calculate the correlation between variables in Pandas?

a. corr()

b. cov()

c. mean()

d. var()

Answer: a. corr()

Data Visualization

11. Which Python library is known for its ease of use and versatility in creating static, animated, and interactive visualizations?

a. Matplotlib

b. Seaborn

c. Plotly

d. Bokeh

Answer: c. Plotly

12. What type of plot would you use to display the relationship between two continuous variables?

a. Bar plot

b. Pie chart

c. Scatter plot

d. Line plot

Answer: c. Scatter plot

13. Which function from the Matplotlib library is used to create a plot?

a. plot()

b. scatter()

c. hist()

d. bar()

Answer: a. plot()

14. What is the primary advantage of using Seaborn over Matplotlib?

a. Seaborn is faster

b. Seaborn is more powerful

c. Seaborn provides a high-level interface for drawing attractive statistical graphics

d. Seaborn has better support for 3D plotting

Answer: c. Seaborn provides a high-level interface for drawing attractive statistical graphics

15. Which plot is used to show the distribution of data along with its probability density?

a. Box plot

b. Violin plot

c. Histogram

d. Bar plot

Answer: b. Violin plot

16. Which of the following visualizations is best suited for displaying categorical data?

a. Line plot

b. Histogram

c. Bar plot

d. Scatter plot

Answer: c. Bar plot

17. What is the primary use of a heatmap in data visualization?

a. To display geographical data

b. To show the distribution of a single variable

c. To visualize the correlation between variables

d. To display categorical data

Answer: c. To visualize the correlation between variables

18. Which parameter in the plt.plot() function is used to specify the line style?

a. linestyle

b. linewidth

c. linecolor

d. linestylewidth

Answer: a. linestyle

19. What is a pair plot in Seaborn used for?

a. To plot the pairwise relationships in a dataset

b. To plot the relationship between two variables

c. To plot the correlation matrix

d. To plot a single variable distribution

Answer: a. To plot the pairwise relationships in a dataset

20. In a bar plot, what does the height of each bar represent?

a. The sum of values

b. The average of values

c. The count or frequency of occurrences

d. The standard deviation

Answer: c. The count or frequency of occurrences

21. Which Seaborn function is used to create a bar plot?

a. barplot()

b. bar()

c. countplot()

d. plotbar()

Answer: a. barplot()

22. What is the primary purpose of using the hue parameter in Seaborn plots?

a. To add color to the plot

b. To group data by a categorical variable

c. To change the background color

d. To adjust the size of the plot

Answer: b. To group data by a categorical variable

23. Which Matplotlib function is used to display an image?

a. show()

b. display()

c. imshow()

d. plot()

Answer: c. imshow()

24. What does the sns.set() function do in Seaborn?

a. Sets the theme for the plots

b. Sets the data for the plots

c. Sets the figure size

d. Sets the axis labels

Answer: a. Sets the theme for the plots

25. Which plot is most appropriate for visualizing the distribution of a continuous variable and comparing it across multiple categories?

a. Histogram

b. Box plot

c. Bar plot

d. Scatter plot

Answer: b. Box plot