Quiz 1

Score: 12/14

1. What does the function 'pd.DataFrame()' do in pandas?

Converts a DataFrame to Python dictionary

Creates a DataFrame

Plots a DataFrame using matplotlib

Calculates the mean of a DataFrame

Explanation

'pd.DataFrame()' is used to create a DataFrame in pandas. It can take various inputs like ndarray, list, dict, or another DataFrame and creates a structured tabular data format.

2. What does the NumPy function 'np.arange(3, 7, 2)' return?

array([3, 5, 7])

array([3, 5])

array([4, 6])

array([2, 3, 4, 5, 6])

Explanation

The 'np.arange(3, 7, 2)' function creates an array of values from 3 to 7 with a step of 2. Therefore, it returns array([3, 5]).

3. Which library can be used to create interactive visualizations in Python?

Matplotlib

Seaborn

Bokeh

Plotly

Explanation

Bokeh is a Python library that is used to create interactive visualizations.

4. What does the 'df.info()' function do in pandas?

Prints the first few rows of a DataFrame

Provides information about the DataFrame

Explanation

The 'df.info()' function provides a concise summary of a DataFrame, including the column data types, non-null values, and memory usage.

Deletes the DataFrame

Sorts the DataFrame

5. What does the 'np.mean()' function do in NumPy?

Calculates the median of the elements in an array

Calculates the mean of the elements in an array

Counts the number of elements in an array

Finds the maximum value in an array

Explanation

The 'np.mean()' function in NumPy calculates the mean of the elements in an array along a specified axis.

6. In pandas, what does the 'df.loc[]' function do?

Calculates the sum of a specific column in a DataFrame

Accesses a group of rows and columns by label(s) or a boolean array

Deletes a specific row in a DataFrame

Rearranges the columns of a DataFrame

Explanation

The 'df.loc[]' function is used to access a group of rows and columns by label(s) or a boolean array.

7. Which of the following statements is true about the 'matplotlib' library?

matplotlib cannot be used for 3D plotting

matplotlib provides an object-oriented API

matplotlib cannot be used to plot histograms

matplotlib is exclusively used for geographical plotting

Explanation

'matplotlib' is a plotting library for Python and its numerical mathematics extension NumPy. It provides an object-oriented API for embedding plots into applications.

8. What is the purpose of the 'np.zeros()' function in NumPy?

Creates an array filled with ones

Creates an array filled with zeros

Creates an empty array

Duplicates an existing array

Explanation

The 'np.zeros()' function in NumPy creates an array filled with zeros of the specified shape and data type.

9. What is the role of 'plt.xlabel()' in the context of matplotlib?

Sets the title of the plot

Sets the label for the x-axis

Adds a legend to the plot

Sets the scale for the plot

Explanation

The 'plt.xlabel()' function in matplotlib is used to set the label for the x-axis in a plot or graph.

10. Which of the following is true about the 'seaborn' library?

Seaborn is not suitable for statistical graphics

Seaborn is built on top of the 'bokeh' library

Seaborn is based on matplotlib

Seaborn does not support categorical data visualization

Explanation

'Seaborn' is a Python data visualization library based on matplotlib. It provides a high-level interface for drawing attractive and informative statistical graphics.

11. In pandas, what does the 'df.dropna()' function do?

Drops the first row of a DataFrame

Removes missing values (NaN) from a DataFrame

Deletes a specific column from a DataFrame

Drops duplicate rows from a DataFrame

Explanation

The 'df.dropna()' function is used to remove missing values (NaN) from a DataFrame.

12. What is the purpose of 'np.random.seed()' in NumPy?

Generates random numbers without any seed

Sets the random seed for reproducible random numbers

Changes the data type of random numbers

Seeds the random number generator for infinite random numbers

Explanation

The 'np.random.seed()' function in NumPy is used to set the random seed, which allows for reproducible random numbers to be generated.

13. What does the 'df.describe()' function do in pandas?

Calculates the correlation matrix of the DataFrame

Generates descriptive statistics of the DataFrame

Sorts the DataFrame in ascending order

Applies a function to each element of the DataFrame

Explanation

The 'df.describe()' function generates descriptive statistics of the DataFrame, such as count, mean, standard deviation, minimum, and maximum values.

14. What is the purpose of 'plt.subplot()' in matplotlib?

Sets the title for the entire subplot grid

Creates a subplot within a grid of plots

Adds a legend to the subplot

Sets the x-axis label for the entire subplot grid

Explanation

The 'plt.subplot()' function in matplotlib is used to create a subplot within a grid of plots.