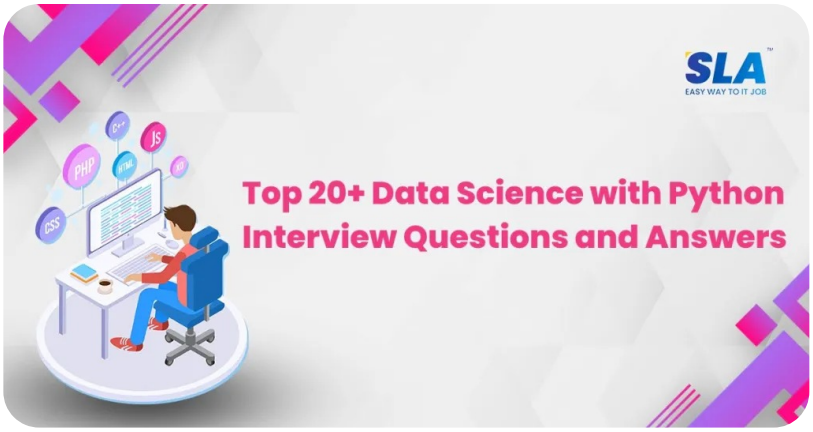

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1. Is Python an object-oriented language?

Yes. Python is indeed an object-oriented programming language; that is, codes can be contained within objects. The feature permits the method and the data to be stored together in an object.

2. Define PEP8

Coding convection is PEP 8. It is made up of coding guidelines, which are suggestions for improving the readability and usability of Python for other users.

3. What are data structures and compound data types?

Compound data types are those that are built using simple, primitive, and basic data types. Python data structures let us store many observations. Lists, tuples, sets, and dictionaries are among them.

4. What makes "==" different from "is"?

"==" verifies that the variables are equal, and "is" verifies that the variables are who they say they are.

5. What makes indexing different from slicing?

While slicing obtains a list of elements, indexing extracts or looks up one or more specific values within a data structure.

6. What do decorators and generators mean?

A generator is a function that takes one value at a time and returns an iterable, or object, over which iterations can be performed. We can change or modify the classes, methods, and functions with the use of a decorator.

7. What distinguishes range, xrange, and range from one another?

range() yields an integer-based Python list object. It is a Python '*BASE*' function.

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xrange() yields an object with a range.

A function in the Numpy library is called '*arange()*'. Additionally, it can return fractional values.

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8. What are namespaces in Python?

A naming mechanism called a namespace is used to make sure that each item has a distinct name. It's as if each variable that is mapped to an item has its own space—imagine this space as a container for visual purposes.

As a result, when we call out this variable, the associated object is also searched together with the designated space or container. For this reason, Python keeps a dictionary updated.

9. What is a default value?

When a function receives a default argument, it indicates that, in the absence of a user-specified parameter value, it will use the default value.

10. What distinguishes local variables from global variables?

The variables that must be used within a function but are defined and declared outside of it are known as global variables. A local variable is declared within the local scope or body of the function.

11. What makes a print different from a return?

There is no value stored in the print. While return provides the result as an output that may be placed in a data structure or variable, it just outputs the value.

12. When are while and for loops used?

When you know ahead of time which items need to be iterated, you use a for loop. Use a for loop to run through each member of the data structure. Conversely, the while loop is employed to verify certain conditions on the variables.

Here, we know precisely which condition to execute, but we are unsure of the optimal number of loop runs.

13. What are an object and a class?

A class is a user-defined prototype, or rather, a blueprint that characterizes the intended functionality of an object in the future. An instance of the class is called an object. Classes can therefore create instances of objects. We call this instantiation.

14. Define docstring

Document strings, often known as docstrings, in **Python**, explain the actions of a function. The triple quotes contain these. Additionally, there are two ways to access it: one is through the __doc__ attribute, and the other is by clicking the tab after putting a period (.) next to the function name. It's a means of connecting Python modules, functions, classes, and methods to their corresponding documentation.

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15. What distinguishes a vector from a series?

Vectors It is limited to assigning values to index points of 0,1,..., (n-1).

Series: There is just a single column. It can set unique values for custom index locations for every data series. Examples are sales, cust_name, and

cust_ID. Dictionary entries, arrays, and lists can all be used to form a series.

16. What makes an array different from a list?

A data structure called an array is made up of several pieces of the same data type, such as strings and integers. Each element in the array has a distinct index number or key, but they all have the same variable name. The goal is to arrange the information so that it may be quickly sorted or searched for a related collection of values.

17. What distinguishes a merge, join, and concatenate?

Merge: The distinct column identification is utilized to integrate the data frames using the merge function. By default, the intersection of all the elements is the inner one on which the merge occurs. Syntax: on='custId', pd.merge(df1, df2, 'outer')

Join: Utilizing the unique index, join is used to join the data frames. Since the left join is the default, all of the exclusive IDs of the data frame that are present in the left table are used. All of the left side of the table's indexes will be returned, together with NaN for any corresponding values that are absent from the right table. Form: df1.join(df2)

Concatenate: This method essentially joins data frames based on their rows or columns. pd.concat(df1,df2) is the syntax.

18. What does the method apply() do?

Applying to series and data frames necessitates using the handy *apply()* function. It applies to all values in the Pandas series and data frames. The *apply()* function uses on a column to ensure that it stays in a dataframe as it iterates over each of the other columns. It can be applied to both built-in and user-defined activities. For this, lambda functions can also be employed.

19. How can a Pandas dataframe be reshaped?

The dataframe can be reshaped in three different ways:

stack(): This method of data reshaping arranges the columns in a row-by-row configuration.

unstack(): The opposite of stacking is unstacking. The row-to-column stacking is undone using this function.

melt() is a function that manipulates a data frame into a format with one or more identifier variables in each column.

20. Which Python libraries did you utilize for the visualization process?

Matplotlib: The common data visualization package Matplotlib helps create two-dimensional graphs. Plotting scatterplots, pie charts, bar or column graphs, histograms, and graphs using non-Cartesian coordinates are all made easier by it. Matplotlib is the foundation for several libraries, and the backend takes advantage of its features. It is also widely used to design the plotting arrangement and axes.

Developed on top of Matplotlib, ***Seaborn*** is a Python data visualization library. It works well with Numpy and Pandas. It provides an advanced sketching tool for making captivating and instructive statistical illustrations.

21. Define FacetGrid

Conditional relationships can be plotted using this multi-plot grid. Using numerous panels facilitates the visualization of the distribution of a single variable as well as the relationships between many variables within subsets of your collection.

It divides the dataset into many axes that are arranged in a grid with rows and columns that

represent the dataset's variable levels.

22. What is Regex? Provide a few of the key Python RegEx functions.

A string of characters called a regular expression, or RegEx is used to construct search patterns. The following RegEx functions are frequently utilized in Python:

match(): only the first character of the string is checked for a match.

search() finds a substring somewhere in the string that matches the RegEx pattern.

sub(): looks for the pattern and substitutes a fresh value

split() is a function that divides text according to a specified RegEx pattern.

findall() is a function that finds every substring that matches a regular expression pattern.

Conclusion

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