Infosys Python Interview Questions

Q. What do you mean by PYTHONPATH?

Answer: Python has an environment option called PYTHONPATH that allows users to specify additional directories that Python should look through for modules and packages. This variable helps Python find the files it needs to import when running code by acting as a search path.

Users can alter the module search behaviour to suit their needs and extend the default search path by configuring the PYTHONPATH variable. With the help of this functionality, developers can neatly structure and organise their Python projects, making it simpler to import modules and improving code reuse.

Q. What are the differences between modules and libraries?

Answer: Modules in Python are akin to stand-alone files that contain particular code elements like variables and functions. However, libraries are just enormous collections of modules that include pre-built features and tools designed for particular tasks or domains. These libraries improve Python's capabilities and make development easier by offering ready-made solutions for a range of programming problems.

Q. How to install Python on Windows and set a path variable?

Answer: The following instructions can be used to install Python on Windows and set a path variable:

Download Python:

- Go to www.python.org, the official Python website.
- Select the tab labelled "Downloads."
- Select the most recent Python version for Windows.
- Choose the installation that is compatible with your system (32- or 64-bit).

Run the Installer:

- Click the installer twice after downloading it.
- During the installation procedure, check the "Add Python to PATH" box.
- If you would like to change the installation location or any of the components, select "Customise installation."

Set the Path Variable:

- Look up "Environment Variables" or "Edit the system environment variables" in the Start menu when it has opened.
- The "Environment Variables" button should be clicked.
- Click "Edit" after locating the "Path" variable under "System Variables."
- After choosing "New," enter the directory location where you installed Python.

- Usually, you can find it in "C:PythonXX," where XX stands for the Python version number.
- To save the changes, click "OK."

Verify the Installation:

- A new Command Prompt window should open.
- Hit Enter after typing "python."
- You should see the Python interpreter prompt with the version information if Python has been installed correctly.

Q. What is the difference between loc and iloc?

Answer: The Pandas package in Python has two functions, loc and iloc, to access various regions of a DataFrame. The main purpose of them is to choose rows and columns.

	loc	iloc
Indexing Type	Label-based	Position-based integer
Input	Data accepts row and column labels	Accepts row and column locations as integers
Slicing	The range includes the end label	End position is the range's unique position.
Subsetting	Able to pick rows with a specific label and condition	Able to choose rows based on integer places irrespective of the DataFrame index
Mixed Selection	Permits the use of labels in both columns and rows	Employs integer locations for columns and rows.
Callable	Callable functions are supported	Supports callable functions as well.

Q. What do you understand by iterators in Python?

Answer: One at a time access to a collection's elements is possible with Python iterators. Until there are none left, they obtain the subsequent element using the __iter__() and __next__() methods. Iterators can

be made for custom objects and are frequently used in loops. They facilitate sluggish element evaluation and encourage effective memory use. In conclusion, iterators offer a practical means of efficiently and controllably iterating across data structures.

Q. Explain the use of ternary operators in Python?

Answer: In Python, the operator that displays conditional expressions is called the ternary operator. This is made up of a statement that needs to be verified and boolean true or false values.

[code] x, y=10,20 count = x if x < y else y JustificationThe evaluation of the phrase count = x if x < y otherwise y is as follows:

The value of x is allocated to count if the condition x < y is true. This indicates that the count will equal x if the value of x is smaller than the value of y.

The value of y is assigned to count if the condition x < y is false. This indicates that the ecount will equal y if the value of x is not smaller than the value of y.

Q. How will you reverse a list in Python?

Answer: Python's slicing mechanism can be used to reverse a list. Here's a quick rundown of the procedure:

If you want to reverse a list, start with the original list.

To make a new list with every entry from the old list in reverse order, use the slicing syntax [::-1].

Either overwrite the original list with the reversed version or assign the reversed list to a new variable.

[1, 2, 3, 4, 5] is the original_list.

list_reversed = list_original[::-1]

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Q. Explain generators in Python?

Answer: Python generators are unique functions that let you make iterable objects. Generators employ the yield keyword to halt execution momentarily and yield values one at a time, in contrast to normal functions that return a value and then exit. Because they only produce values as needed rather than the full series of values at once, this makes generators memory efficient.

When working with enormous datasets or when the entire value sequence is not required at once, generators come in handy. They spare us from using up too much memory by enabling us to loop over an essentially limitless sequence.

Q. Explain the difference between pickling and unpickling?

Answer: The Python object is accepted by the Pickle module, which uses the dump method to transform it into a string representation and save it to a file. We call this process pickling. Conversely, unpickling is the act of obtaining the original Python objects from the textual representation.

Q. What is the difference between %, /, // ?

Answer: The arithmetic operators %, /, and // have different functions in Python:

- The modulo operator, represented by the symbol %, yields the remainder of a division. For example, 5% 2 would yield 1.
- The division operator that divides using floating points and returns a float is '/'. For instance, 5 / 2 would provide 2.5.
- The floor division operator, represented by the symbol //, divides the result but rounds it down to the closest whole number. Thus, 5 / 2 would yield 2.

Q. Describe the split(), sub(), and subn() methods found within Python's 're' module?

Answer: These functions are used to alter strings and are part of the Python RegEx, or "re," package.

- split(): This function divides a supplied string into a list.
- sub(): This function replaces the matched substring with an alternate string after determining which substring a regex pattern matches.
- subn(): This function returns the new string plus the number of replacements; otherwise, it functions similarly to sub().

Q. What is a map function in Python?

Answer: Method and iterable are the two parameters used by Python's map() method. One useful tool that lets you apply a function to each element in an iterable is the map() function. It requires two arguments: an iterable containing the elements you wish to process and the function you wish to apply. With the help of this function, you can work on several objects at once in a flexible manner, which will improve the efficiency and clarity of your code.

For example:

```python
def calculateSq(x):

return x*x

numbers = (5, 6, 7, 8)

result = map( calculateSq,
numbers)
```

Q. Differentiate between a package and a module in python.

Answer: One Python file makes up the module. Other modules, or other Python files, can be imported by a module as objects. On the other hand, a package is a folder or directory that contains modules and various sub-packages.The process of creating a Python module involves saving a file ending in.py. There will be reusable classes and functions in this file that can be used within and between modules.To build a Python package, take the following actions:

- **Make a directory and give it a meaningful name that accurately describes how it works.**
- **Make a file called __init__.py in this directory. Python is informed that the directory we made is a package thanks to this. To repurpose the functionality, its contents can be imported into various modules in other packages.**

Q. What are some of the most commonly used built-in modules in Python?

Answer: Python modules are files containing functions, variables, or classes that are written in Python. Their extension is.py. The built-in modules that are most frequently offered are:

- **os**
- **math**
- **sys**
- **random**
- **re**
- **datetime**
- **JSON**

Q. What are lambda functions?

Answer: Lambda functions are typically single-expression, inline, anonymous functions. They are employed in the runtime to create function objects. Any number of criteria are acceptable to them. When functions are needed for a brief amount of time, they are typically utilised. These are useful for:

mul_func = lambda a,b : a*b

print(mul_func(5, 3))

 # Output: 15

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