1. **Interview Questions with Answers**
2. **What is Python? List some popular applications of Python in the world of technology.**

Python is a widely-used general-purpose, high-level programming language. It was created by Guido van Rossum in 1991 and further developed by the Python Software Foundation. It was designed with an emphasis on code readability, and its syntax allows programmers to express their concepts in fewer lines of code.It is used for:

* System Scripting
* Web Development
* Game Development
* Software Development
* Complex Mathematics

1. **What are the benefits of using Python language as a tool in the present scenario?**

The following are the benefits of using Python language:

1. Object-Oriented Language
2. High-Level Language
3. Dynamically Typed language
4. Extensive support Libraries
5. Presence of third-party modules
6. Open source and community development
7. Portable and Interactive
8. Portable across Operating systems

### ****Is Python a compiled language or an interpreted language?****

Actually, Python is a partially compiled language and partially interpreted language. The compilation part is done first when we execute our code and this will generate byte code internally this byte code gets converted by the Python virtual machine (p.v.m) according to the underlying platform (machine+operating system).

### ****What does the ‘#’ symbol do in Python?****

‘#’ is used to comment on everything that comes after on the line.

### ****What is the difference between a Mutable datatype and an Immutable data type?****

Mutable data types can be edited i.e., they can change at runtime.

Eg–List,Dictionary,etc.  
Immutable data types cannot be edited i.e., they cannot change at runtime.

Eg – String, Tuple, etc.

### ****What is the difference between a Set and Dictionary?****

The set is an unordered collection of data types that is iterable, mutable and has no duplicateelements.  
 A dictionary in Python is an unordered collection of data values, used to store data values like a map.

1. **What is List Comprehension? Give an Example.**

List comprehension is a syntax construction to ease the creation of a list based on existing iterable.

For Example:

my\_list = [i for i in range(1, 10)]

### ****What is a lambda function?****

A lambda function is an anonymous function. This function can have any number of parameters but, can have just one statement. For Example:

a = lambda x, y : x\*y

print(a(7, 19))

### ****What is a pass in Python?****

Pass means performing no operation or in other words, it is a placeholder in the compound statement, where there should be a blank left and nothing has to be written there.

### ****What is the difference between / and // in Python?****

// represents floor division whereas / represents precise division. For Example:

5//2 = 2

5/2 = 2.5

### ****How is Exceptional handling done in Python?****

There are 3 main keywords i.e. try, except, and finally which are used to catch exceptions and handle the recovering mechanism accordingly. Try is the block of a code that is monitored for errors. Except block gets executed when an error occurs.

The beauty of the final block is to execute the code after trying for an error. This block gets executed irrespective of whether an error occurred or not. Finally, block is used to do the required cleanup activities of objects/variables.

### ****What is swapcase function in Python?****

It is a string’s function that converts all uppercase characters into lowercase and vice versa. It is used to alter the existing case of the string. This method creates a copy of the string which contains all the characters in the swap case. For Example:

string = "GeeksforGeeks"

string.swapcase() ---> "gEEKSFORgEEKS"

### ****Difference between for loop and while loop in Python****

The “for” Loop is generally used to iterate through the elements of various collection types such as [List](https://www.geeksforgeeks.org/python-lists/), [Tuple](https://www.geeksforgeeks.org/python-tuples/), [Set](https://www.geeksforgeeks.org/sets-in-python/), and [Dictionary](https://www.geeksforgeeks.org/python-dictionary/). Developers use a “for” loop where they have both the conditions start and the end. Whereas, the “while” loop is the actual looping feature that is used in any other programming language. Programmers use a Python while loop where they just have the end conditions.

### Can we Pass a function as an argument in Python?

Yes, Several arguments can be passed to a function, including objects, variables (of the same or distinct data types), and functions. Functions can be passed as parameters to other functions because they are objects. Higher-order functions are functions that can take other functions as arguments.

### What are \*args and \*kwargs?

To pass a variable number of arguments to a function in Python, use the special syntax [\*args and \*\*kwargs](https://www.geeksforgeeks.org/args-kwargs-python/) in the function specification. It is used to pass a variable-length, keyword-free argument list. By using the \*, the variable we associate with the \* becomes iterable, allowing you to do operations on it such as iterating over it and using higher-order operations like map and filter.

### Is Indentation Required in Python?

Yes, [indentation](https://www.geeksforgeeks.org/indentation-in-python/) is required in Python. A [Python](https://www.geeksforgeeks.org/python-programming-language/) interpreter can be informed that a group of statements belongs to a specific block of code by using Python indentation. Indentations make the code easy to read for developers in all programming languages but in Python, it is very important to indent the code in a specific order.

1. **What is Scope in Python?**

The location where we can find a variable and also access it if required is called the scope of a variable.

* **Python Local variable:** Local variables are those that are initialized within a function and are unique to that function. It cannot be accessed outside of the function.
* **Python Global variables:** Global variables are the ones that are defined and declared outside any function and are not specified to any function.
* **Module-level scope:** It refers to the global objects of the current module accessible in the program.
* **Outermost scope:**It refers to any built-in names that the program can call. The name referenced is located last among the objects in this scope.

1. **What is docstring in Python?**

Python documentation strings (or docstrings) provide a convenient way of associating documentation with Python modules, functions, classes, and methods.

* **Declaring Docstrings:** The docstrings are declared using ”’triple single quotes”’ or “””triple double quotes””” just below the class, method, or function declaration. All functions should have a docstring.
* **Accessing Docstrings:** The docstrings can be accessed using the \_\_doc\_\_ method of the object or using the help function.

1. **What is a dynamically typed language?**

[Typed languages](https://www.geeksforgeeks.org/what-is-a-typed-language/) are the languages in which we define the type of data type and it will be known by the machine at the compile-time or at runtime. Typed languages can be classified into two categories:

* **Statically typed languages:**In this type of language, the data type of a variable is known at the compile time which means the programmer has to specify the data type of a variable at the time of its declaration.
* **Dynamically typed languages:**These are the languages that do not require any pre-defined data type for any variable as it is interpreted at runtime by the machine itself. In these languages, interpreters assign the data type to a variable at runtime depending on its value.

### What is a break, continue, and pass in Python?

The [break statement](https://www.geeksforgeeks.org/python-break-statement/) is used to terminate the loop or statement in which it is present. After that, the control will pass to the statements that are present after the break statement, if available.

[Continue](https://www.geeksforgeeks.org/python-continue-statement/) is also a loop control statement just like the break statement. continue statement is opposite to that of the break statement, instead of terminating the loop, it forces to execute the next iteration of the loop.

[Pass](https://www.geeksforgeeks.org/python-pass-statement/)means performing no operation or in other words, it is a placeholder in the compound statement, where there should be a blank left and nothing has to be written there.

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