## INTERVIEW QUESTIONS AND ANSWERS

## Q1. What is Python? What are the benefits of using Python?

## Ans.1 Python is an interpreted, high-level and general-purpose programming language. Python's design philosophy emphasizes code readability with its notable use of significant whitespace. Its language constructs and object-oriented approach aim to help programmers write clear, logical code for small and large-scale projects.

## Benfits of using python:

## Ease of use and read.

## Straightforward and speedy.

## Usability with IoT.

## Asynchronous coding.

## A less limited programming approach.

## Enterprise Application Integration.

## Its use in web development.

## Its use in scientific and numeric applications.

## Application scripting and software testing.

## Python’s use in prototyping and open-source advantage.

## Q2. What is pickling and unpickling?

## Ans 2 Pickling in python refers to the process of serializing objects into binary streams, while unpickling is the inverse of that. It’s called that because of the pickle module in Python which implements the methods to do this.

## Q3. How Python is interpreted?

## Ans3 Python program runs directly from the source code. so, Python will fall under byte code interpreted. The.py source code is first compiled to byte code as.pyc.

## Q4. How memory is managed in Python?

## Ans. - Memory management in Python involves a private heap containing all Python objects and data structures. Interpreter takes care of Python heap and that the programmer has no access to it. - The allocation of heap space for Python objects is done by Python memory manager. The core API of Python provides some tools for the programmer to code reliable and more robust program. - Python also has a build-in garbage collector which recycles all the unused memory. When an object is no longer referenced by the program, the heap space it occupies can be freed. The garbage collector determines objects which are no longer referenced by the sprogram frees the occupied memory and make it available to the heap space. - The gc module defines functions to enable /disable garbage collector:

## gc.enable() -Enables automatic garbage collection. gc.disable() - Disables automatic garbage collection.

## Q5. What is the difference between list and tuple?

## Ans The main difference between lists and tuples is the fact that lists are mutable whereas tuples are immutable.

## Q6 . How are arguments passed by value or by reference?

## Ans Python uses a mechanism, which is known as "Call-by-Object", sometimes also called "Call by Object Reference" or "Call by Sharing"

## If you pass immutable arguments like integers, strings or tuples to a function, the passing acts like Call-by-value. It's different, if we pass mutable arguments.

## All parameters (arguments) in the Python language are passed by reference. It means if you change what a parameter refers to within a function, the change also reflects back in the calling function.

## Q7 What is Dict and List comprehensions are?

## Ans Both list and dictionary comprehension are a part of functional programming which aims to make coding more readable and create list and dictionary in a crisp way without explicitly using for loop. The difference between list and dictionary comprehension is that list comprehension creates list. Whereas dictionary comprehension creates dictionary

## Q8 What are the built-in type does Python provides?

## Ans They are :

## None

## Integer - effectively a BigInt

## Float - effectively a 64 bit floating point number on a 64 bit system

## complex - a pair of floats

## string - A continuous ordered collection of characters

## list - an ordered heterogeneous collection of objects

## set - an unordered heterogeneous collection of unique objects

## dictionary - A key, value pair mapping

## frozenset - a read only set

## frozendict - a read only dict

## tuple - an immutable ordered heterogeneous collection of objects.

## file - an open file

## slice - a type for holding information on slicing collections.

## If you include the standard library - the list above is expanded :

## rational - A numeric type for fractions

## decimal - a fixed precision decimal number

## bytearray - an array indexed per byte

## time - a type to store and manipulate a time of day

## timedelta - a type to hold a relative time difference

## datetime - a type to store and manipulate a date time.

## queues -A synchronised queue

## defaultdict - Dictionary with an automatically generated default for missing keys

## NamedTuple - A read-only tuple like object with named fields

## Counter - A defaultdict implementation designed to count things, and then combine counts etc.

## deque - A simple queue

## and probably more.

## Q9 . What is lambda in Python?

## Ans 9 A lambda function is a small anonymous function.

## A lambda function can take any number of arguments, but can only have one expression.

## Q10 Why lambda forms in python does not have statements?

## Ans 10 A lambda form in python does not have statements as it is used to make new function object and then return them at runtime.

## Q11 . What is pass in Python?

## Ans 11 The pass statement in Python is used when a statement is required syntactically but you do not want any command or code to execute. It is like null operation, as nothing will happen is it is executed. Pass statement can also be used for writing empty loops. Pass is also used for empty control statement, function and classes.

## Q12 . In Python what are iterators?

## Ans 12 An iterator is an object that contains a countable number of values.

## An iterator is an object that can be iterated upon, meaning that you can traverse through all the values.

## Technically, in Python, an iterator is an object which implements the iterator protocol, which consist of the methods \_\_iter\_\_() and \_\_next\_\_().

## Q13 . In Python what is slicing?

## Ans 13 Slicing in Python is a feature that enables accessing parts of sequences like strings, tuples, and lists. You can also use them to modify or delete the items of mutable sequences such as lists. Slices can also be applied on third-party objects like NumPy arrays, as well as Pandas series and data frames.

## Q14. . How can you copy an object in Python?

## Ans  You can copy an object in Python using deepcopy : from copy import deepcopy B = deepcopy (A) The "=" does is to assign another reference to the same object in memory . The deepcopy creates a whole new object in memory with the values of A and B will reference it.

## Q15 What is negative index in Python?

## Ans Negative index is used in python to index starting from the last element of the list, tuple or any other container class which supports indexing. -1 refers to the last index, -2 refers to the second last index and so on

## Q16 How you can convert a number to a string?

## Ans 16 In Python an integer can be converted into a string using the built-in str () function. The str () function takes in any python data type and converts it into a string. But use of the str () is not the only way to do so. This type of conversion can also be done using the "%s" keyword, the.format function or using f-string function.

## Q17What is the difference between Xrange and range?

## Ans range() and xrange() are two functions that could be used to iterate a certain number of times in [for](https://www.geeksforgeeks.org/loops-and-loop-control-statements-continue-break-and-pass-in-python/) loops in Python. In Python 3, there is no xrange , but the range function behaves like xrange in Python 2.If you want to write code that will run on both Python 2 and Python 3, you should use range().

## range() – This returns a range object (a type of iterable). xrange() – This function returns the generator object that can be used to display numbers only by looping. Only particular range is displayed on demand and hence called “lazy evaluation“.

## Q18 What is module and package in Python?

## Ans Module: The module is a simple Python file that contains collections of functions and global variables and with having a .py extension file. It is an executable file and to organize all the modules we have the concept called Package in Python.

## Package: The package is a simple directory having collections of modules. This directory contains Python modules and also having [\_\_init\_\_.py](https://www.geeksforgeeks.org/__init__-in-python/) file by which the interpreter interprets it as a Package. The package is simply a namespace. The package also contains sub-packages inside it.

## Q19 Mention what are the rules for local and global variables in Python?

## Ans19 Local variables: If a variable is assigned a new value anywhere within the function’s body, it’s assumed to be local.

## Global variables: Those variables that are only referenced inside a function are implicitly global.

## Q 20 How can you share global variables across modules?

## Ans 20 The best way to share global variables across modules across a single program is to create a config module. Just import the config module in all modules of your application; the module then becomes available as a global name.

## Q21 Explain how to delete a file in Python?

## AnsTo delete a file, you must import the OS module, and run its os.remove() function:

## Example

## Remove the file "demofile.txt":

## import os os.remove("demofile.txt")

## Q 22 Explain how can you generate random numbers in Python?

## Ans 22 Python defines a set of functions that are used to generate or manipulate random numbers. This particular type of functions are used in a lot of games, lotteries or any application requiring random number generation.

## Randon Number Operations :

## 1. choice() :- This function is used to generate 1 random number from a container.

## 2. randrange(beg, end, step) :- This function is also used to generate random number but within a range specified in its arguments. This function takes 3 arguments, beginning number (included in generation), last number (excluded in generation) and step ( to skip numbers in range while selecting).

## Q23 Mention the use of // operator in Python?

## Ans 23 Here the result is the quotient in which the digits after decimal points are not taken into account.

## Q24 Mention five benefits of using Python?

## Ans 24 Benfits of using python:

## Ease of use and read.

## Straightforward and speedy.

## Usability with IoT.

## Asynchronous coding.

## A less limited programming approach.

## Q25 . Mention the use of the split function in Python?

## Ans 25  Following are the advantages of using a split function in python:

## At some point we may have to break down a large string into smaller chunks or strings.

## It is the opposite of concatenation, which adds two strings together.

## The white spaces are considered as a separator if none is provided in the split function.

## It becomes easier to analyze and deduct conclusions.

## It helps to decode encrypted strings.

## Q26 What are the key features of Python?

## Ans 26 the key features of python programming language that are the following:

## **Understandable And Easy:**

## Python is the easiest and uncomplicated language to use for the developers. It is easy to code and easy to read the language that doesn’t take too much time.

## **Meaningful programming language:**

## It is simple and easy to readable language. It provides a mass of constructs to the developers that assist to mainly focus on the solution rather than on the syntax.

## **Available For Anyone:**

## Python is readily available for everyone. It is an open-source language; its source code is accessible to the public so it can be download for free very easily.

## **Programmer-Friendly Language:**

## While working with this language the programmers don’t have to remember the system architecture and do not need to manage the memory.

## Easily Movable Language:

## Python is really a portable language that doesn’t need to be changed while the transformation of coding between two systems. You can take one code to run it into different machines.

## **Object Oriented:**

## This programming language is an object-oriented language that focuses on objects and functions. It supports both procedures and objects oriented programming to make the tasks easy to handle.

## **Uncomplicated Code Running:**

## The source code of python can be easily converted into an instant form, which is bytecode so that the programmer can run python code without the worry of linking with libraries and other factors.

## **Readily Extended:**

## Python can easily be extended to other languages. It is really an extensible language its code can be written in other languages like C++.

## **Great Standard Library:**

## In python, the programmers don’t have to write code for every single thing because it provides the enormously helpful feature of the large library with different functionalities.

## **Data Specification:**

## It is really an active language that allows us to integrate scripting capabilities into our program of the other languages. There is also no need to specify data in python.

## **Crux:**

## All these special features of python make it the popular programming language. Its qualities motivate the programmers to use it happily while creating apps and websites.

## Q27 Explain the ternary operator in Python.

## Ans 27 Ternary operators also known as conditional expressions are operators that evaluate something based on a condition being true or false. It was added to Python in version [2.5](https://mail.python.org/pipermail/python-dev/2005-September/056846.html). It simply allows to test a condition in a **single line** replacing the multiline if-else making the code compact

## Q28 Is python case sensitive?

## Ans 28 **Yes**, Python is a case-sensitive language. This basically means that writing ‘abc’ and ‘Abc’ are not treated the same. For instance, in Python, if you write count=10 and when you want to print the value of count, if you write print (Count), then it will not provide the output. Instead, it will give an error like ‘Count is not found’.

## Q29. How long can an identifier be in Python?

## Ans 29Python doc says that you can have an identifier with **unlimited length**. But it is just the half truth. Using a large name (more than 79 chars) would lead to the violation of a rule set by the PEP-8 standard. It says. Limit all lines to a maximum of 79 characters

## Q30 . How would you convert a string into lowercase?

## Ans 30 To convert String to lowercase, you can use lower () method on the String. The syntax to use lower () method is: Following is an example python program to convert a string to lower case.

## Q31. [How to **Get** **Keys** of **Python Dictionary** as **List**?](https://www.tutorialkart.com/python/python-dictionary-get-keys-as-list/#:~:text=You%20can%20get%20all%20the%20keys%20in%20the,can%20use%20%2A%20operator%2C%20which%20unpacks%20an%20iterable.)

## Ans You can get all the keys in the dictionary as a **Python List**. dict.keys () returns an iterable of type dict\_keys (). You can convert this into a list using list ()

## Q32. What is slicing?

## Ans Slicing in Python is a feature that **enables accessing parts of sequences like strings, tuples, and lists**. You can also use them to modify or delete the items of mutable sequences such as lists. Slices can also be applied on third-party objects like NumPy arrays, as well as Pandas series and data frames.

## Q33. How would you declare a comment in Python?

## Ans 33Comments can be placed at the end of a line, and Python will ignore the rest of the line: Comments does not have to be text to explain the code, it can also be used to prevent Python from executing code

## Q 34. How will you check if all characters in a string are alphanumeric in python?

## AnsPython String class has a method called isalnum () which can be called on a string and tells us if the string consists only of alphanumerics or not

## Q35. How will you capitalize the first letter of a string in python?

## Ans In Python, the capitalize () method converts the first character of a string to capital (uppercase) letter. If the string has its first character as capital, then it returns the original string.

## Q 36 How do you insert an object at a given index in Python?

## Ans Python List insert() Method. Description. Python list method insert() inserts object obj into list at offset index. Syntax. Parameters. index − This is the Index where the object obj need to be inserted. obj − This is the Object to be inserted into the given list.

## Q 37 how do you reverse a list in python?

## Ans 37The first option is python in-built reverse() method. Every list object in python has a method called reverse() that you can call a list object and it will reverse the list in place. This means we don’t need to create a new list to copy these elements to a new list but instead you can modify the original list.

## Q38. How does a function return values in python?

## Ans A python function can return a specified value anywhere within that function by using a return statement, which ends the function under execution there and then by returning a value to the caller.

## Q39 How would you define a block in Python?

## Ans Python uses **white-space** to distinguish code blocks. You can use spaces or tabs to create a Python block. When several statements use the same indentation, they are considered as a block

## Q40 . Why do we need break and continue in Python?

## Ans In Python, break and continue statements can **alter the flow of a normal loop**. Loops iterate over a block of code until the test expression is false, but sometimes we wish to terminate the current iteration or even the whole loop without checking test expression. The break and continue statements are used in these cases.

## Q41 what is python good for?

## Ans Python is good for many things. Anything that scripting (fairly simple, interpreted) languages in general are good for, like **automation of small repetitive uninteresting computer-based tasks, or quick calculations** a bit beyond the range of the calculators you have handy.

Q42 . How will you convert a list into a string?

Ans Use str.join method. Loop the list and convert each item to string and then add all to one string

Q44 what is dict in python?

Ans Dictionary in Python is an unordered collection of data values, used to store data values like a map, which unlike other Data Types that hold only single value as an element, Dictionary holds key:value pair. Key value is provided in the dictionary to make it more optimized

Q45. What do you understand by relational operation?

 Relational Python Operator carries out the comparison between operands. They tell us whether an operand is greater than the other, lesser, equal, or a combination of those. a. Less than (<) This operator checks if the value on the left of the operator is lesser than the one on the right. b. Greater than (>)

Q 46 . What are assignment operators in Python?

Ans Operators are used to perform operations on values and variables. These are the special symbols that carry out arithmetic, logical, bitwise computations. The value the operator operates on is known as **Operand**.

Q47. Explain logical operators in Python.?

Ans Python Logical Operators are used to combine two or more conditions and perform the logical operations using Logical AND, Logical OR, and Logical NOT in Python.

Q 48. What are membership operators?

Ans Membership operators are **operators used to validate the membership of a value**. It test for membership in a sequence, such as strings, lists, or tuples.

Q49. Explain identity operators in Python?

Ans To compare the memory location of two objects, Identity Operators are used. The two identify operators used in Python are (is, is not). Operator is: It returns true if two variables point the same object and false otherwise Operator is not: It returns false if two variables point the same object and true otherwise

Q50. . Finally, tell us about bitwise operators in Python?

Ans In Python, bitwise operators are used to perform bitwise calculations on integers. The integers are first converted into binary and then operations are performed on bit by bit, hence the name bitwise operators. Then the result is returned in decimal format.

Q51 . How do you take input in Python?

Ans Python has an input function which lets you ask a user for some text input. You call this function to tell the program to stop and wait for the user to key in the data. In Python 2, you have a built-in function **raw\_input** (), whereas in Python 3, you have input (). The program will resume once the user presses the ENTER or RETURN key.

Q52