

## Python Interview Questions

### 1. What are Data Types?

A data type is a set of values and a set of operations defined on data. An implementation of a data type is an expression of data and operations in terms of a specific programming language such as Java, C ++, or Python.

### 2. Name of the main data types in Python.

Numbers, strings, lists, dictionaries, tuples, files, and sets are generally considered the main types of data. Types, None, and Booleans are sometimes also classified this way. The integer, floating-point, complex, fraction and decimal are numerical data types and simple strings and Unicode strings in Python 2 and text strings and byte strings in Python 3 are the types of string data types.

### 3. What are mutable and immutable types list them?

**Immutable Objects** : These are of in-built types like **int, float, bool, string, unicode, tuple**. In simple words, an immutable object can't be changed after it is created.

**Mutable Objects** : These are of type [list](#), [dict](#), [set](#) . Custom classes are generally mutable.

### 4. What is the difference between list and tuples in Python?

LIST	TUPLES
-> Lists are mutable i.e they can be edited. which can't be edited).	-> Tuples are immutable (tuples are lists
-> Lists are slower than tuples.	-> Tuples are faster than list.
-> Syntax: list_1 = [10, 'Chelsea', 20]	-> Syntax: tup_1 = (10, 'Chelsea' , 20)

### 5. What is type conversion in Python?

Type conversion refers to the conversion of one data type into another.

**int()** – converts any data type into integer type

**float()** – converts any data type into float type

**ord()** – converts characters into integer

**hex()** – converts integers to hexadecimal

**oct()** – converts integer to octal

**tuple()** – This function is used to convert to a tuple.

**set()** – This function returns the type after converting to set.

**list()** – This function is used to convert any data type to a list type.

**dict()** – This function is used to convert a tuple of order (key,value) into a dictionary.

**str()** – Used to convert integer into a string.

**complex(real,imag)** – This function converts real numbers to complex(real,imag) number

6. What are local variables and global variables in Python?

Global Variables:- Variables declared outside a function or in global space are called global variables. These variables can be accessed by any function in the program.

Local Variables:- Any variable declared inside a function is known as a local variable. This variable is present in the local space and not in the global space.

7. What is the difference between Python Arrays and lists?

Arrays and lists, in Python, have the same way of storing data. But, arrays can hold only a single data type elements whereas lists can hold any data type elements.

Example:

```
import array as arr
My_Array=arr.array('i',[1,2,3,4])
My_list=[1,'abc',1.20]
print(My_Array)
print(My_list)
```

## 8. What are functions in Python?

A function is a block of code which is executed only when it is called. To define a Python function, the def keyword is used.

Example: `def Newfunc():`

```
    print("Hello computer.")
```

```
    Newfunc(); #calling the function
```

Output: Hello computer..

## 9. What is the difference between Set and Dictionary?

Set is an unordered collection of data type that is iterable, mutable, and has no duplicate elements.

Dictionary in Python is an unordered collection of data values, used to store data values like a map.

## 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))
```

11. What is difference between / and // in Python?

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

$5//2 = 2$

$5/2 = 2.5$

12. What is the difference between xrange and range function?

range() and xrange() are two functions that could be used to iterate a certain number of times in for loops in Python. In Python 3, there is no xrange, but the range function behaves like xrange in Python 2.

- *range()* – This returns a list of numbers created using range() function.
- *xrange()* – This function returns the generator object that can be used to display numbers only by looping. The only particular range is displayed on demand and hence called *lazy evaluation*.

13. What are python iterators?

Iterators are objects which can be traversed though or iterated upon.

14. How can the ternary operators be used in python?

The Ternary operator is the operator that is used to show the conditional statements. This consists of the true or false values with a statement that has to be evaluated for it.

Syntax:

The Ternary operator will be given as:

[on\_true] if [expression] else [on\_false]x, y = 25, 50big = x if x < y else y

Example:

The expression gets evaluated like if x<y else y, in this case if x<y is true then the value is returned as big=x and if it is incorrect then big=y will be sent as a result.

15. What is the purpose of split and join method in Python?

- You can use **split()** function to split a string based on a delimiter to a list of strings.
- You can use **join()** function to join a list of strings based on a delimiter to give a single string.

Example:-

- `string = "This is a string."`
- `string_list = string.split(' ') #delimiter is 'space' character or ''`
- `print(string_list) #output: ['This', 'is', 'a', 'string.']`
- `print(' '.join(string_list)) #output: This is a string.`

16. What does len() do?

It is used to determine the length of a string, a list, an array, etc.

Example:

```
stg='ABCD'
```

```
len(stg)
```

Output: 4

17. How does break, continue and pass work?

Break :- Allows loop termination when some condition is met and the control is transferred to the next statement.

Continue :- Allows skipping some part of a loop when some specific condition is met and the control is transferred to the beginning of the loop

Pass :- Used when you need some block of code syntactically, but you want to skip its execution. This is basically a null operation. Nothing happens when this is executed.

18. What is the purpose of \*\* operator?

\*\* Exponent – Performs exponential (power) calculation on operators. `a**b` = 10 to the power 20 if `a = 10` and `b = 20`.

19. What does this mean: `*args`, `**kwargs`? And why would we use it?

We use `*args` when we aren't sure how many arguments are going to be passed to a function, or if we want to pass a stored list or tuple of arguments to a function. `**kwargs` is used when we don't know how many keyword arguments will be passed to a function, or it can be used to pass the values of a dictionary as keyword arguments. The identifiers `args` and `kwargs` are a convention, you could also use `*bob` and `**billy` but that would not be wise.

20. What are negative indexes and why are they used?

The sequences in Python are indexed and it consists of the positive as well as negative numbers. The numbers that are positive uses '0' that is uses as first index and '1' as the second index and the process goes on like that.

The index for the negative number starts from '-1' that represents the last index in the sequence and '-2' as the penultimate index and the sequence carries forward like the positive number.

The negative index is used to remove any new-line spaces from the string and allow the string to except the last character that is given as `S[:-1]`. The negative index is also used to show the index to represent the string in correct order.