

Interview Questions

1. What is Python? What are the benefits of using Python?

Ans: Python is a programming language with objects, modules, threads, exceptions and automatic memory management. The benefits of python are that it is simple and easy, portable, extensible, built-in data structure and it is an open source.

2. How Python is interpreted?

Ans: Python language is an interpreted language. Python program runs directly from the source code. It converts the source code that is written by the programmer into an intermediate language, which is again translated into machine language that has to be executed.

Data types:

3. What are the built-in types of python?

Ans: Built-in types in Python are as follows –

- Integers
- Floating-point
- Complex numbers
- Strings
- Boolean
- Built-in functions

4: Define tuples in Python?

Answer: Tuples is a sequence data type in Python. The number of values in tuples are separated by commas.

5. What is the difference between list and tuple?

Ans: The difference between list and tuple is that list is mutable while tuple is not. Tuple can be hashed for e.g as a key for dictionaries

6. What is Dict and List comprehensions are?

Ans: They are syntax constructions to ease the creation of a Dictionary or List based on existing iterable.

7. What are the built-in type does python provides?

Ans: There are mutable and Immutable types of Python's built-in types

List Sets

Dictionaries Immutable built-in types

Strings Tuples Numbers

8. In Python what are iterators?

Ans: In Python, iterators are used to iterate a group of elements, containers like list.

9. How you can convert a number to a string?

Ans: In order to convert a number into a string, use the inbuilt function `str()`. If you want a octal or hexadecimal representation, use the inbuilt function `oct()` or `hex()`.

10. What are some mutable and immutable datatypes/data-structures in python?

Ans:

Mutable Types Immutable Types

Dictionary number
List boolean
string
tuple

11. Do you know what is the difference between lists and tuples? Can you give me an example for their usage?

Ans:

First list are mutable while tuples are not, and second tuples can be hashed e.g. to be used as keys for dictionaries. As an example of their usage, tuples are used when the order of the elements in the sequence matters e.g. a geographic coordinates, "list" of points in a path or route, or set of actions that should be executed in specific order. Don't forget that you can use them a dictionary keys. For everything else use lists

12: What are the supported standard data types in Python?

Answer: The supported standard data types in Python include the following.

1. List.
2. Number.
3. String.
4. Dictionary.
5. Tuples.

13. What is type conversion in Python?

Ans: 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.

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

Ans: 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.

15. What is Tuple Matching in Python?

Tuple Matching in Python is a method of grouping the tuples by matching the second element in the tuples. It is achieved by using a dictionary by checking the second element in each tuple in python programming. However, we can make new tuples by taking portions of existing tuples.

Operators:

16. Mention the use of // operator in Python?

Ans: It is a Floor Division operator, which is used for dividing two operands with the result as quotient showing only digits before the decimal point. For instance, $10//5 = 2$ and $10.0//5.0 = 2.0$

17. What is the purpose of is, not and in operators?

Ans: Operators are special functions. They take one or more values and produce a corresponding result.

is: returns true when 2 operands are true (Example: "a" is 'a')

not: returns the inverse of the boolean value

in: checks if some element is present in some sequence

18: What is the purpose of relational operators in Python?

Answer: The purpose of relational operators in Python is to compare values

19: What are assignment operators in Python?

Answer: The assignment operators in Python can help in combining all the arithmetic operators with the assignment symbol.

20: Why do we need membership operators in Python?

Answer: We need membership operators in Python with the purpose to confirm if the value is a member in another or not.

21: How are identity operators different than the membership operators?

Answer: Unlike membership operators, the identity operators compare the values to find out if they have the same value or not.

22. Explain Arithmetic operators

Arithmetic Operators perform various arithmetic calculations like addition, subtraction, multiplication, division, %modulus, exponent, etc. There are various methods for arithmetic calculation in Python, like you can use the eval function, declare variable & calculate, or call functions.

23 Explain membership operators

These operators test for membership in a sequence such as lists, strings, or tuples. Two membership operators are used in Python. (in, not in). It gives the result based on the variable present in a specified sequence or string.

Conditional Statements:

24. What is Python If Statement?

Python if Statement is used for decision-making operations. It contains a body of code that runs only when the condition given in the if statement is true. If the condition is false, then the optional else statement runs, which contains some code for the else condition.

When you want to justify one condition while the other condition is not true, then you use Python if-else statement.

Looping Statements:

25. Explain While loop in Python

While loop does the exact same thing what “if statement” does, but instead of running the code block once, they jump back to the point where it began the code and repeat the whole process again.

Functions:

26. What are functions in Python?

Ans: 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.

27. How are arguments passed by value or by reference?

Ans: Everything in Python is an object and all variables hold references to the objects. The references values are according to the functions; as a result you cannot change the value of the references. However, you can change the objects if it is mutable.

28. What is lambda in Python?

Ans: It is a single expression anonymous function often used as In-line function.

29. Mention the use of the split function in Python?

Ans: The use of the split function in Python is that it breaks a string into shorter strings using the defined separator. It gives a list of all words present in the string.

30. How can we pass optional or keyword parameters from one function to another in Python?

Ans:

Gather the arguments using the * and ** specifiers in the function's parameter list. This gives us positional arguments as a tuple and the keyword arguments as a dictionary.

Then we can pass these arguments while calling another function by using * and **:

```
deffun1(a,*tup,**keywordArg):
```

```
...
```

```
keywordArg['width']='23.3c'
```

```
...
```

```
Fun2(a,*tup,**keywordArg)
```

31. Python How do you make a higher order function in Python?

Ans:

A higherorder function accepts one or more functions as input and returns a new function. Sometimes it is required to use function as data To make high order function , we need to import functools module The functools.partial() function is used often for high order function.

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

Ans: 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.

