Course : PS01CMCA51 (Python Programming)
Short Questions
(BBPATEL)

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

Python is a high-level, interpreted, general-purpose programming language. Being a general-purpose language, it can be used to build almost any type of application with the right tools/libraries.

The benefits of pythons are that it is simple and easy, portable, extensible, build-in data structure and it is an open source.

Additionally, python supports objects, modules, threads, exception-handling and automatic memory management which help in modelling real-world problems and building applications to solve these problems.

What type of language is python? Programming or scripting?

Python is capable of scripting, but in general sense, it is considered as a general-purpose programming language.

Python an interpreted language. Explain.

An interpreted language is any programming language which is not in machine-level code before runtime. Therefore, Python is an interpreted language.

How Python is interpreted?

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.

What is the difference between list and tuple?

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.

What are the built-in type does python provides?

There are mutable and Immutable types of Pythons built in types Mutable built-in types

- List
- Sets
- Dictionaries

Immutable built-in types

- Strings
- Tuples
- Numbers

What is pass in Python?

Pass means, no-operation Python statement, or in other words it is a place holder in compound statement, where there should be a blank left and nothing has to be written there.

How will you reverse a list in Python?

The function **list.reverse()** reverses the objects of a list.

What are negative indexes and why are they used?

To access an element from ordered sequences, we simply use the index of the element, which is the position number of that particular element. The index usually starts from 0, i.e., the first element has index 0, the second has 1, and so on.
When we use the index to access elements from the end of a list, it's called reverse indexing. In reverse indexing, the indexing of elements starts from the last element with the index number '−1'. The second last element has index '−2', and so on. These indexes used in reverse indexing are called negative indexes.

In Python what are iterators?

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

In Python what is slicing?

A mechanism to select a range of items from sequence types like list, tuple, strings etc. is known as slicing.

What is docstring in Python?

A Python documentation string is known as docstring, it is a way of documenting Python functions, modules and classes.

How you can convert a number to a string?

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().

Mention the use of // operator in Python?

It is a Floor Divisionoperator , 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.

Mention the use of the split function in Python?

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.

Is python case sensitive?

Yes. Python is a case sensitive language.

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.

What does [::-1} do?

[::-1] is used to reverse the order of an array or a sequence.

For example:

```
import array as arr
My_Array=arr.array('i',[1,2,3,4,5])
My_Array[::-1]
```

Output: array('i', [5, 4, 3, 2, 1])

[::-1] reprints a reversed copy of ordered data structures such as an array or a list. the original array or list remains unchanged.

How do you write comments in python?

Comments in Python start with a # character. However, alternatively at times, commenting is done using docstrings(strings enclosed within triple quotes).

Example:

```
#Comments in Python start like this
print("Comments in Python start with a #")
```

Output: Comments in Python start with a #

How will you capitalize the first letter of string?

In Python, the capitalize() method capitalizes the first letter of a string. If the string already consists of a capital letter at the beginning, then, it returns the original string.

How will you convert a string to all lowercase?

To convert a string to lowercase, lower() function can be used.

Example:

str="GDCST"

What is the difference between append() and extend() methods?

Both append() and extend() methods are methods used to add elements at the end of a list.

append(element): Adds the given element at the end of the list that called this append() method

extend(another-list): Adds the elements of another list at the end of the list that called this extend() method

What are loop interruption statements in Python?

There are two types of loop interruption statements in Python that let users terminate a loop iteration prematurely, i.e., not letting the loop run its full iterations.

Following are the two types of loop interruption statements:

Python break statement: This statement immediately terminates the loop entirely, and the control flow of the program is shifted directly to the outside of the loop.

Python continue statement: Continue statement terminates the current loop iteration and moves the control flow of the program to the next iteration of the loop, letting the user skip only the current iteration.

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

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

What is the usage of help() and dir() function in Python?

help() and dir() both functions are accessible from the Python interpreter and used for viewing a consolidated dump of built-in functions.

1. help() function: The help() function is used to display the documentation string and also facilitates you to see the help related to modules, keywords, attributes, etc.
2. dir() function: The dir() function is used to display the defined symbols.

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

What does len() do?

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

Example:

```
str="GDCST"
len(str)
```

What is the difference between deep and shallow copy?

Shallow copy is used when a new instance type gets created and it keeps the values that are copied in the new instance. Shallow copy is used to copy the reference pointers just like it copies the values. These references point to the original objects and the changes made in any member of the class will also affect the original copy of it. Shallow copy allows faster execution of the program and it depends on the size of the data that is used.

Deep copy is used to store the values that are already copied. Deep copy doesn't copy the reference pointers to the objects. It makes the reference to an object and the new object that is pointed by some other object gets stored. The changes made in the original copy won't affect any other copy that uses the object. Deep copy makes execution of the program slower due to making certain copies for each object that is been called.