**Module – 3 (Collections, functions and Modules)**

**1. What is List? How will you reverse a list?**

Lists are used to store multiple items in a single variable. Lists are one of 4 built-in data types in Python used to store collections of data.

A built-in function called reverse() is used to reverse the list.

**2. Differentiate between append () and extend () methods?**

The append() method in the Python programming language adds an item to a list that already exists whereas the extend() method adds each of the iterable elements which is supplied as a parameter to the end of the original list.

**3. How will you compare two lists?**

**The methods of comparing two lists are given below.**

* The cmp() function.
* The set() function and == operator.
* The sort() function and == operator.
* The collection.counter() function.
* The reduce() and map() function.

**4. What is tuple? Difference between list and tuple.**

A Python Tuple is a group of items that are separated by commas. Tuples are an immutable data type, which means that once they have been generated, their elements cannot be changed. Since tuples are ordered sequences.

**Difference between list and tuple:**

List and Tuple in Python are the classes of Python Data Structures. The list is dynamic, whereas the tuple has static characteristics. This means that lists can be modified whereas tuples cannot be modified, the tuple is faster than the list because of static in nature. Lists are denoted by the square brackets but tuples are denoted as parenthesis

**5. How Do You Traverse Through A Dictionary Object In Python?**

* Using dict. items() Method. ...
* Using Keys() Method. ...
* Using Values() Method. ...
* Iterating with Index. ...
* Iterating Over Dictionary In Alphabetical Order. ...
* Sort Using Dictionary Item Values.

**6. How Do You Check The Presence Of A Key In A Dictionary?**

Checking if key exists using the get() method. The get() method is a dictionary method that returns the value of the associated key. If the key is not present it returns either a default value (if passed) or it returns None. Using this method we can pass a key and check if a key exists in the python dictionary.

**7. Why Do You Use the Zip () Method in Python?**

**zip() method** takes iterable containers and returns a single iterator object, having mapped values from all the containers.

It is used tomap the similar index of multiple containers so that they can be used just using a single entity.

***Syntax :****zip(\*iterators)*

**8. How Many Basic Types Of Functions Are Available In Python?**

There are two types of functions in python: User-Defined Functions - these types of functions are defined by the user to perform any specific task. Built-in Functions - these types of functions are pre-defined in python.

**9. How can you pick a random item from a list or tuple?**

In Python, you can randomly sample elements from a list with the choice() , sample() , and choices() functions from the random module. These functions can also be used with strings and tuples. choice() returns a single random element, while sample() and choices() return a list of multiple random elements.

**10. How can you pick a random item from a range?**

Use the random. randrange() function(Returns a random number within the specified range) to generate a random number within the given range by passing minimum, and maximum numbers as arguments.

**11. How can you get a random number in python?**

To generate random number in Python, randint() function is used. This function is defined in random module.

**12. How will you set the starting value in generating random numbers?**

Use the seed() method to customize the start number of the random number generator.

**14. How will you randomizes the items of a list in place?**

The shuffle() method randomizes the items of a list in place.