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

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

A list is a data structure in Python that is a mutable, or changeable, ordered sequence of elements. Each element or value that is inside of a list is called an item. Just as strings are defined as characters between quotes, lists are defined by having values between square brackets [ ] .

1. How will you remove last object from a list? Suppose list1 is [2, 33, 222, 14, and 25], what is list1 [-1]?

 To delete the last element, we can use the negative index -1. The use of the negative index allows us to delete the last element, even without calculating the length of the list.

Output of list1 [-1] is 25.

1. 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.

1. How will you compare two lists?

sort() method or the sorted() function with the == operator

set() function with the == operator

reduce() and map() functions with the == operator

collection.Counter() class with the == operator

list comprehension

1. What is tuple? Difference between list and tuple.

The primary difference between tuples and lists is that tuples are immutable as opposed to lists which are mutable. Therefore, it is possible to change a list but not a tuple. The contents of a tuple cannot change once they have been created in Python due to the immutability of tuples.

1. How will you create a dictionary using tuples in python?

The following are the methods to convert a tuple into a dictionary −

* Using dict() function
* Using Dictionary Comprehension and enumerate() function
* Using zip() and dict() functions

1. 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.

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

Using has\_key() method returns true if a given key is available in the dictionary, otherwise, it returns a false. With the Inbuilt method has\_key(), use the if statement to check if the key is present in the dictionary or not.

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

Python's zip() function creates an iterator that will aggregate elements from two or more iterables. You can use the resulting iterator to quickly and consistently solve common programming problems, like creating dictionaries

1. 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.

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

Using random.

Create a tuple and add some dummy data to it. Generate a random item from the tuple using random. choice() method(This function returns a random element from the specified sequence i.e tuple here) by passing the input tuple as an argument to the choice() function.

1. 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.

1. 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.

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

The random number generator needs a number to start with (a seed value), to be able to generate a random number. By default the random number generator uses the current system time. Use the seed() method to customize the start number of the random number generator.

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

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