Python Assignment

Module – 3 (Collections, functions and Modules)

- **QUESTION: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 [ ] .

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

To remove items (elements) from a list in Python, use the list functions clear(), pop(), and remove(). You can also delete items with the del statement by specifying a position or range with an index or slice.

In this article, we will show you how to remove an object/element from a list using Python.

The following are the 4 different methods to accomplish this task − •
Using remove() method
•Using pop() method
•Using clear() method

➢ In list = [55]

➢ QUESTION:3 Differentiate between append () and extend () methods?

- Append() adds an item to the end of a list.
- Insert() inserts and item in a specified position in the list.

➢ QUESTION:4 How will you compare two lists?

Two of the most popular methods are :-

- Set ()
- Cmp ()

➢ The set() function creates an object that is a set object.

➢ The cmp() function is used to compare two elements or lists and return a value based on the arguments passed.

➢ QUESTION:5 How will you create a dictionary using tuples in python?

Create a variable name which will be the name of the dictionary. Then, assign the variable to an empty set of curly braces, {} . Another way of creating an empty dictionary is to use the dict() function without passing any arguments.

➢ QUESTION:6 What is tuple? Difference between list and tuple.

a tuple is an ordered sequence of values. The values can be repeated, but their number is always finite. A tuple is often represented by a comma-delimited list whose values are enclosed in parentheses, although they're sometimes enclosed in square brackets or angle brackets.

- **Difference :-**

List	Tuple
It is mutable	It is immutable
The implication of iterations is timeconsuming in the list.	Implications of iterations are much faster in tuples.
Operations like insertion and deletion are better performed.	Elements can be accessed better.
Consumes more memory.	Consumes less memory.

➢ QUESTION:7 How Do You Traverse Through A Dictionary Object In Python?

In Python, to iterate through a dictionary (`dict`) with a `for` loop, use the `keys()`, `values()`, and `items()` methods. You can also get a list of all the keys and values in a dictionary using those methods and `list()`.

❖ Contents :-

- Iterate through dictionary keys: `keys()`
- Iterate through dictionary values: `values()`
- Iterate through dictionary key-value pairs: `items()`

➢ QUESTION:8 How Do You Check The Presence Of A Key In A Dictionary?

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.

❖ The get() method : -

The get() method is a method offered by the dictionary class in python which takes an input of a key and returns its value. It will return a default value (which is None by default) if the key is not present.

➢ QUESTION:9 Why Do You Use the Zip () Method in Python?

The zip() function in Python is used to combine two or more iterable dictionaries into a single iterable, where corresponding elements from the input iterable are paired together as tuples. When using zip() with dictionaries, it pairs the keys and values of the dictionaries based on their position in the dictionary.

➢ QUESTION:10 How Many Basic Types Of Functions Are Available In Python?

Two types of functions :-

- User-defined functions
- Built-in functions

✓ **User-defined functions –** These functions are defined by the user to perform a specific task.

✓ **Built-in functions –** These functions are pre-defined functions in Python.

➢ QUESTION:11 How can you pick a random item from a list or tuple?

In Python, you can randomly sample elements from a list using 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.

➢ QUESTION:12 How can you pick a random item from a range?

Select the Random Value from a List :-

1. Using random. choice()
2. Using random. randrange()
3. Using random. randint()
4. Using random. random()
5. Using random. sample()
6. Using random. choices()
7. Using numpy. random. choice()
8. Select k random value from a list.

➢ QUESTION:13 How can you get a random number in python?

Generating a random integer within a given range – randint()

1. Firstly, import the random module of Python.
2. Then, we call the randint(min, max) method to get a random integer within the given range and store it in the variable n.
3. Print the randomly generated number.

➢ **QUESTION:14 How will you set the starting value in generating random numbers?**

The seed() method is used to initialize the random number generator. 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.

➢ **QUESTION:15 How will you randomizes the items of a list in place?**

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

❖ Syntax :-

Following is the syntax for shuffle() method −

```
shuffle (lst,[random])
```