**Q26. What is a string? How can we declare string in Python?**

In Python, **Strings**are arrays of bytes representing Unicode characters.

Python does not have a character data type, a single character is simply a string with a length of

Strings in python are surrounded by either single quotation marks, or double quotation marks.

S= 'hello' is the same as S = "hello".

**Q27. How can we access the string using its index?**

Square brackets can be used to access elements of the string.

S= 'hello'

Print(S[1])=e

Q32. What is escape sequence?

**Q34. What is a list in Python?**

If we want to represent a group of values as a single entity where insertion order required to preserve and duplicates are allowed then we should go for list data type.

list=[10,10.5,'Nikita',True,10]

**Q35. How can you create a list in Python?**

L=[] -- empty list

list=[10,20,30]

list.append("Hi") – used to add element in list

**Q40. What is a tuple? How is it different from list?**

tuple data type is exactly same as list data type except that it is immutable .i.e we cannot change values.

tuple is the read only version of list

**Q41. How can you create a tuple in Python?**

Tuple elements can be represented within parenthesis.

T=(10,30,50,70)

**Q42. Create a tuple and try to add your name in the tuple. Are you able to do it? Support your answer with reason.**

T=(10,20,30)

t.append(40)

7) AttributeError: 'tuple' object has no attribute 'append'

Because tuple is immutable .i.e we cannot change values.

**Q45. What are sets in Python?**

Set is one of 4 built-in data types in Python used to store collections of data, the other 3 are [List](https://www.w3schools.com/python/python_lists.asp), [Tuple](https://www.w3schools.com/python/python_tuples.asp), and [Dictionary](https://www.w3schools.com/python/python_dictionaries.asp), all with different qualities and usage.

Features:

A set is a collection which is unordered, means that the items in a set do not have a defined order.

Set items are unchangeable, meaning that we cannot change the items after the set has been created. But we can remove items and add new items in set.

## Sets cannot have two items with the same value- Duplicates Not Allowed

**Q46. How can you create a set?**

1. Sets are written with curly brackets.

Set={1,2,4,5}

1. We can create set objects using set() function

l=[2.3,4]

s1=set(l)

print(s1)

1. While creating empty set we have to use set() function otherwise it is trated as dictionary.
2. s1={}
3. print(type(s1))

<class 'dict'>

s2=set()

print(type(s2))

<class 'set'>

**Q49. How is update() different from add()?**

We can use add() to add individual item to the Set, where as we can use update() function to add multiple items to Set.

add() function can take only one argument where as update() function can take any number of arguments but all arguments should be iterable objects.

#s.add(10,20,30)  # add takes only one argument

s.update(range(5)) # update takes multiple iterable arguments

print(s)

**Q50. What is clear() in sets?**

To remove all elements from the Set.

ss={10,20,30}

print(ss)

ss.clear()

print(ss)

output : {10, 20, 30}

set()

**Q51. What is frozen set?**

**Python frozenset() Method**creates an immutable Set object from an iterable. It is a built-in Python function. As it is a set object therefore we cannot have duplicate values in the frozenset.

**Q52. How is frozen set different from set?**

Set is a mutable and **frozenset() is** immutable.

**Q53. What is union() in sets? Explain via code.**

We can use this function to return all elements present in both sets

x={10,20,30,40}

y={30,40,50,60}

print(x.union(y)) #{10, 20, 30, 40, 50, 60}

print(x|y) #{10, 20, 30, 40, 50, 60}

**Q54. What is intersection() in sets? Explain via code.**

Returns common elements present in both x and y

x={10,20,30,40}

y={30,40,50,60}

print(x.intersection(y)) #{40, 30}

print(x&y) #{40, 30}

**Q55. What is dictionary in Python?**

If we want to represent a group of objects as key-value pairs then we should go for Dictionary.

Eg:

rollno----name

phone number--address

ipaddress---domain name

**features :**

Duplicate keys are not allowed but values can be duplicated.

Hetrogeneous objects are allowed for both key and values.

insertion order is not preserved

Dictionaries are mutable

Dictionaries are dynamic

indexing and slicing concepts are not applicable

**Q56. How is dictionary different from all other data structures.**

We can use List,Tuple and Set to represent a group of individual objects as a single entity.

If we want to represent a group of objects as key-value pairs then we can use Dictionary.

**Q57. How can we declare a dictionary in Python?**

d={key:value, key:value}

we are creating empty dictionary

d={} or d=dict()

**.**

**Q59. How can we add an element in a dictionary?**

D={1:”nn”,2:”kk”}

D[3]=”aa”

Print(D)

**Q62. What is the use of get() function?**

To get the value associated with the key

d.get(key)

If the key is available then returns the corresponding value otherwise returns None.It wont raise any error.

d.get(key,defaultvalue)

If the key is available then returns the corresponding value otherwise returns default value.

**Q63. What is the use of items() function?**

It returns list of tuples representing key-value pairs.

[(k,v),(k,v),(k,v)]

Eg:

d={100:"nikita",200:"amol",300:"shiva"}

for k,v in d.items():

print(k,"--",v)

**Q64. What is the use of pop() function?**

d.pop(key)

It removes the entry associated with the specified key and returns the corresponding

value

If the specified key is not available then we will get KeyError

**Q65. What is the use of popitems() function?**

It removes an arbitrary item(key-value) from the dictionary and returns it.

**Q66. What is the use of keys() function?**

It returns all keys associated with dictionary

Eg:

d={100:"nikita",200:"amol”,300:"shiva"}

print(d.keys())

for k in d.keys():

print(k)

If the dictionary is empty then we will get KeyError

d={}

print(d.popitem()) ==>KeyError: 'popitem(): dictionary is empty'

**Q67. What is the use of values() function?**

It returns all values associated with the dictionary

E,g.

d={100:"nikita",200:"amol",300:"shiva"}

print(d.values())

for v in d.values():

print(v)

**Q69. How many type of loop are there in Python?**

1. for loop

2. while loop

**Q70. What is the difference between for and while loops?**

If we want to execute some action for every element present in some sequence (it may be string or collection) then we can use for loop.

Syntax:

for x in sequence :

body

If we want to execute a group of statements iteratively until some condition false,then we should go for while loop.

Syntax:

while condition :

body

**Q71. What is the use of continue statement?**

We can use continue statement to skip current iteration and continue next iteration.

for i in range(10):

if i%2==0:

continue

print(i)

**Q72. What is the use of break statement?**

We can use break statement inside loops to break loop execution based on some

condition.

Eg:

for i in range(10):

if i==7:

print("processing is enough..plz break")

break

print(i)

**Q73. What is the use of pass statement?**

In our programming syntactically if block is required which won't do anything then we can define that empty block with pass keyword.

pass

* |- It is an empty statement
* |- It is null statement
* |- It won't do anything

**Q74. What is the use of range() function?**

range Data Type represents a sequence of numbers.

The elements present in range Data type are not modifiable. i.e range Data type is

immutable.

range(10)

generate numbers from 0 to 9

**Q75. How can you loop over a dictionary?**

for k,v in d2.items():

  print("keys is :",k," and value is :",v)