**Assessment 17-02-2025**

**1.Create a tuple and any one operation on it?**

#Create a tuple  
tuple\_=(1,2,4,5)  
#Convert the tuple into list  
list\_=list(tuple\_)  
#Append an element  
list\_.append(3)  
#convert the list into tuple and print the tuple.  
print(tuple(list\_))

Output:

(1, 2, 4, 5, 3)

**2.Delete the tuple and display the tuple.**

#Delete the tuple and Display it  
list\_.clear()  
print(tuple(list\_))

Output:

()

**3.Differences between List, Tuple, Set and Dictionary.**

|  |  |  |  |
| --- | --- | --- | --- |
| **List** | **Tuple** | **Set** | **Dictionary** |
| **1.**List is an ordered collection of elements. | **1.**Tuple is an ordered collection of elements. | **1.**Set is an unordered collection of elements. | **1.**As earlier in 3.6 version, it is unordered, but after 3.7 version it is ordered collection of elements. |
| **2.**List can be represented by **[]** | **2.**Tuple can be represented by **()** | **2.**Set can be represented by **{}** | **2.**Dictionary can be represented by **{}** |
| **3.**The list allows duplicate elements. | **3.**The tuple allows duplicate elements. | **3.**The set does not allow duplicate elements. | **3.**The dictionary does not allow duplicate keys. |
| **4.**The list can be nested among all. | **4.**The tuple can be nested among all. | **4.**The set can be nested among all. | **4.**The dictionary cannot be nested among all. |
| **5.**List is Mutable i.e., we can make any changes in list. | **5.**Tuple is immutable i.e., we cannot make any changes in tuple. | **5.**Set is mutable i.e., we can make any changes in the set, its elements are not duplicated. | **5.** A dictionary is mutable, its Keys are not duplicated. |
| **6.** Example: [1, 2, 3, 4, 5] | **6.** Example: (1, 2, 3, 4, 5) | **6.** Example: {1, 2, 3, 4, 5} | **6.** Example: {1: “a”, 2: “b”, 3: “c”, 4: “d”, 5: “e”} |
| **7.** A list can be created using the list() function | **7.** Tuple can be created using the tuple() function. | **7.** A set can be created using the set() function. | **7.** A dictionary can be created using the dict() function. |
| **8.** Creating an empty list  l=[] | **8.** Creating an empty Tuple  t=() | **8.** Creating a set  a=set() b=set(a) | **8.** Creating an empty dictionary  d={} |
| **9.**Methods in List:  append()  insert()  extend()  pop()  remove() | **9.**Methods in Tuple:  count()  index() | **9.**Methods in Set:  add()  clear()  difference()  intersection()  union()  symmetric\_difference() | **9.**Method in dict:  get()  items()  keys()  values()  pop()  popitem() |

**4.Create 5 sets.**

s1={1,2,4,8,3}  
s2={9,3,1,6,4}  
s3={1,10.3,'cherry',True}  
s4={'apple','orange','kiwi','banana'}  
s5={'watermelon','papaya','orange','apple'}  
print(s1)  
print(s2)  
print(s3)  
print(s4)  
print(s5)

Output:

{1, 2, 3, 4, 8}

{1, 3, 4, 6, 9}

{1, 10.3, 'cherry'}

{'orange', 'banana', 'kiwi', 'apple'}

{'orange', 'watermelon', 'papaya', 'apple'}

**5.Perform the Union, Intersection and Difference operation on 2 sets.**

s1={1,2,4,8,3}  
s2={9,3,1,6,4}  
print('The union of the sets :',s1.union(s2))  
print('The intersection of the sets :',s1.intersection(s2))  
print('The difference of the sets :',s1.difference(s2))

Output:

The union of the sets : {1, 2, 3, 4, 6, 8, 9}

The intersection of the sets : {1, 3, 4}

The difference of the sets : {8, 2}

**6.Write a python program to print even numbers.**

l=[1,2,3,4,5,6,7,8,9]  
even\_list=[]  
for i in l:  
 if i%2==0:  
 even\_list.append(i)  
print('The even numbers in the given list are :',even\_list)

Output:

The even numbers in the given list are : [2, 4, 6, 8]

**7.Write a python program to print odd numbers.**

l=[1,2,3,4,5,6,7,8,9]  
odd\_list=[]  
for i in l:  
 if i%2!=0:  
 odd\_list.append(i)  
print('The odd numbers in the given list are :',odd\_list)

Output:

The odd numbers in the given list are : [1, 3, 5, 7, 9]

**8.** **Python program to print the given number is even or odd.**

n=int(input('Enter a number :'))  
if n%2==0:  
 print('The given number is even')  
else:  
 print('The given number is odd')

Output:

Enter a number :3

The given number is odd

**9.Python program to print only the capital letters in a set/tuple/list.**

Using list:

l=['Apple','Banana','Orange']  
capital\_letters=[]  
s="".join(l)  
for i in s:  
 if i.isupper():  
 capital\_letters.append(i)  
print(capital\_letters)

Output:

['A', 'B', 'O']

Using Tuple:

t=('Alice','Bob','JAI')  
capital\_letters=[]  
s="".join(t)  
for i in s:  
 if i.isupper():  
 capital\_letters.append(i)  
print(tuple(capital\_letters))

Output:

('A', 'B', 'J', 'A', 'I')

Using Set:

s='Python Is A ProgramMing Language'  
capital\_letters=set()  
for i in s:  
 if i.isupper():  
 capital\_letters.add(i)  
print(capital\_letters)

Output:

{'L', 'M', 'I', 'A', 'P'}

**10.Take 2 lists and print the common elements in them.**

l1=[1,2,3,4]  
l2=[3,4,5,6]  
common\_elements=[]  
for i in l1:  
 for j in l2:  
 if i==j:  
 common\_elements.append(i)  
print(common\_elements)

Output:

[3,4]

**11.Take 2 lists and print the unique elements in them.**

l1=[1,2,3,4]  
l2=[3,4,5,6]  
s1=set(l1)  
s2=set(l2)  
print(list(s1.symmetric\_difference(s2)))

Output:

[1, 2, 5, 6]

**12.** **Take 2 tuples and print the common elements in them.**

t1=(1,2,3,4)  
t2=(3,4,5,6)  
common\_elements=[]  
for i in t1:  
 for j in t2:  
 if i==j:  
 common\_elements.append(i)  
print(tuple(common\_elements))

Output:

(5,6)

**13.Take 2 tuples and print the unique elements in them.**

t1=(1,2,3,4)  
t2=(3,4,5,6)  
s1=set(t1)  
s2=set(t2)  
print(tuple(s1.symmetric\_difference(s2)))

Output:

(1,2,5,6)

**14.Take 2 dictionaries and print the common elements in them.**

d1={'name':'Alice','age':30,'city':'Hyd'}  
d2={'name':'Bob','age':50,'place':'khammam'}  
common\_elements=set(d1.keys()) & set(d2.keys())  
print('Common\_elements :',common\_elements)

Output:

Common\_elements : {'age', 'name'}

**15.Take 2 dictionaries and print unique elements in them.**

d1={'name':'Alice','age':30,'city':'Hyd'}  
d2={'name':'Bob','age':50,'place':'khammam'}  
unique\_elements=set(d1.keys()) ^ set(d2.keys())  
print('Unique\_elements :',unique\_elements)

Output:

Unique\_elements : {'city', 'place'}