

```
In [1]: # immutable
t1=1,2,3
print(t1)
print(type(t1))

(1, 2, 3)
<class 'tuple'>

In [2]: t2=()
print(t2)
print(type(t2))

()
<class 'tuple'>

In [3]: t3=(4,5,6)
print(t3)
print(type(t3))

(4, 5, 6)
<class 'tuple'>

In [5]: t4=(7)
print(t4)
print(type(t4))

7
<class 'int'>

In [6]: t3

Out[6]: (4, 5, 6)

In [7]: x,y,z=t3 # unpacking
print(x,y,z)

4 5 6

In [10]: a=50
b=60
print(a,b)
a,b=b,a

50 60

In [12]: s="Hello"
t5=(s,)
t5

Out[12]: ('Hello',)

In [13]: t6=tuple(s)
t6
t6=[5,6,7,8,9]
t6

Out[13]: [5, 6, 7, 8, 9]

In [14]: t6[3]

Out[14]: 8

In [15]: t6[-1]

Out[15]: 9

In [16]: # slicing
t6[1:4]

Out[16]: [6, 7, 8]

In [17]: 6 in t6

Out[17]: True

In [22]: li=["Hello","How",(6,7,4),9,"Hello",9,9]
print(li)
t7=tuple(li)
print(t7)

['Hello', 'How', (6, 7, 4), 9, 'Hello', 9, 9]
('Hello', 'How', (6, 7, 4), 9, 'Hello', 9, 9)

In [25]: # add all numeric values
sum=0
for obj in t7:
    if(isinstance(obj,int) or isinstance(obj,float)):
        sum+=obj
    elif(isinstance(obj,tuple)):
        for i in obj:
            sum+=1
print(sum)

44

In [26]: def operate(x,y):
return x*y,x*y,x//y

In [27]: t8=operate(16,3)
print(t8)

(19, 48, 5)

In [33]: t2

Out[33]: ()

In [34]: t3

Out[34]: (4, 5, 6)

In [35]: t4

Out[35]: 7

In [44]: t3*t4

Out[44]: (4, 5, 6, 4, 5, 6, 4, 5, 6, 4, 5, 6, 4, 5, 6, 4, 5, 6, 4, 5, 6)

In [45]: t9=(4,5,6,7,8,9,3)

In [46]: max(t9)

Out[46]: 9

In [47]: min(t9)

Out[47]: 3

In [48]: t4

Out[48]: 7

In [49]: t5

Out[49]: ('Hello',)

In [54]: t10=sorted(t9)
print(t10)

[3, 4, 5, 6, 7, 8, 9]

In [52]: sorted(t9,reverse=True)

Out[52]: [9, 8, 7, 6, 5, 4, 3]

In [53]: print(t9)
t9.index(5)

(4, 5, 6, 7, 8, 9, 3)
1

In [55]: t10=(65,2,3,5,6,7,8,64,3,2,3,4)

In [56]: t11=sorted(t10)
print("t11",t11)
print("t10",t10)

t11 [2, 2, 3, 3, 3, 4, 5, 6, 7, 8, 64, 65]
t10 (65, 2, 3, 5, 6, 7, 8, 64, 3, 2, 3, 4)

In [60]: t11.index(7)

Out[60]: 8

In [61]: t2+t3

Out[61]: (4, 5, 6)

In [63]: t12=(76,2,8,0,5,89,2,7,9,2,67)
tosearchform=t12.index(2)
t12.index(2,tosearchform+1)

Out[63]: 6

In [64]: t12.count(2)

Out[64]: 3

In [70]: t1=(2,3,4,5)
string="Hello","How","are","you","well"
res=tuple(t1+string)
print(str(res))

(2, 3, 4, 5, 'Hello', 'How', 'are', 'you', 'well')

In [21]: # 1 Write a python program to find the repeated items of a tuple.
t1 = (2, 4, 5, 6, 2, 3, 4, 4, 7)
print(t1)
count = t1.count(4)
print("Repeated item",count)

(2, 4, 5, 6, 2, 3, 4, 4, 7)
Repeated item 3

In [17]: # 2 Write a python program to check whether an element exists within a tuple.
t1 = (2,4,5,6,7,8,9,3)
check=int(input("Enter the element to check :"))
for i in t1:
    if check in t1:
        result=True
    else:
        result=False
print(result)

Enter the element to check :10
False

In [2]: # 3 Write a python program to convert list to a tuple.
list1 = [5, 10, 7, 4, 15, 3]
print("List :",list1)
t1 = tuple(list1)
print("Tuple :",t1)

List : [5, 10, 7, 4, 15, 3]
Tuple : (5, 10, 7, 4, 15, 3)

In [7]: # 4 WAP to sort list of tuple based on sum Input:[(4,5),(2,3),(6,7),(2,8)]
# Output:[(2,3),(4,5),(2,8),(6,7)]
new_list=[(4,5),(2,3),(6,7),(2,8)]
print("Given :",t1)
l=len(t1)
for i in range(l):
    for j in range(l-i-1):
        if (t1[j][0]+t1[j][1]) > (t1[j+1][0]+t1[j+1][1]):
            t1[j],t1[j+1] = t1[j+1],t1[j]
print("Sort list :",t1)

Given : [(4, 5), (2, 3), (6, 7), (2, 8)]
Sort list : [(2, 3), (4, 5), (2, 8), (6, 7)]

In [3]: # 5 Write a python program o reverse a tuple
t1=(6,3,5,67,45,23,43)
print("Tuple :",t1)
t2=t1[::-1]
print("Reverse a tuple :",t2)

tuple : (6, 3, 5, 67, 45, 23, 43)
Reverse a tuple : (43, 23, 45, 67, 5, 3, 6)

In [8]: # 6 Write a code to copy contents of one tuple to other in all possible ways
t=(3,4,56,43,5,67,46)
l1=tuple(t)
print("First way",l1)
l2=t[:]
print("second way",l2)

First way (3, 4, 56, 43, 5, 67, 46)
second way (3, 4, 56, 43, 5, 67, 46)

In [12]: # 7 If tuple1=(1,2,3,4,5,6,7,8,9) move contents of tuple1 to tuple2 except 4
tuple1=(1,2,3,4,5,6,7,8,9)
t2=list(tuple1)
t2.remove(4)
t=tuple(t2)
print(t)

(1, 2, 3, 5, 6, 7, 8, 9)

In [10]: # 8 Tuple contains two lists, list1 and list2
# list1=[4,5,6,7] list2=[6,7,8,9]
# Write a code to append 100 in list1 of tuple and
# Remove 7 from list2 of tuple
list1=[4,5,6,7]
list2=[6,7,8,9]
list3=[]
list1.append(100)
print("Append 100 in List1 :",list1)
list2.remove(7)
print("Remove 7 from List2 :",list2)
list3.append(list1)
list3.append(list2)
t=tuple(list3)
print("List :",t)

Append 100 in List1 : [4, 5, 6, 7, 100]
Remove 7 from List2 : [6, 8, 9]
List : ([4, 5, 6, 7, 100], [6, 8, 9])

In [ ]:
```