

Tuple Exercise

1. Write a Python program to create a tuple

Sample Output

```
Tuple = ()
```

2. Write a Python program to create a tuple with different data types

Sample Output

```
('Tutor Joes', True, 'T', 3.21, 10)
```

3. Write a Python program to create a tuple with numbers and print one item

Sample Output

```
10
```

```
Type = tuple
```

4. Write a Python program to unpack a tuple in several variables

Sample Output

```
a = 4, 8, 3
```

```
(4, 8, 3)
```

5. Write a Python program to add an item in a tuple

Sample Output

```
(10, 40, 50, 70, 90)
```

```
add items in list = 20
```

```
(10, 40, 50, 70, 90, 20)
```

6. Write a Python program to convert a tuple to a string

Sample Output

```
('T', 'u', 't', 'o', 'r', ' ', 'J', 'o', 'e', 's')
```

Tutor Joes

7. Write a Python program to get the 4th element and 4th element from last of a tuple

Sample Output

```
('w', 3, 'r', 'e', 's', 'o', 'u', 'r', 'c', 'e')
```

4th Elements From Tuple : e

4th Elements From Last Tuple : u

8. Write a Python program to create the colon of a tuple

Sample Output

```
("Tutor", 'J', 23, 56.67, [23,12], True)
```

```
Copy = ('Tutor', 'J', 23, 56.67, [23, 12], True)
```

9. Write a Python program to find the repeated items of a tuple

Sample Output

```
(2, 34, 45, 6, 7, 2, 4, 5, 78, 34, 2)
```

item = 2

Repeated items of a tuple = 3

10. Write a Python program to check whether an element exists within a tuple***Sample Output***

```
('T', 'u', 't', 'o', 'r', ' ', 'J', 'o', 'e', 's', 8)
```

```
8 in Tuple = True
```

```
'x' in Tuple = False
```

11. Write a Python program to convert a list to a tuple***Sample Output***

```
[12, 45, 87, 54, 89, 4]
```

```
(12, 45, 87, 54, 89, 4)
```

12. Write a Python program to remove an item from a tuple***Sample Output***

```
(23, 45, 56, 68, 10, 45, 7, 9)
```

```
Remove = 56
```

```
(23, 45, 68, 10, 45, 7, 9)
```

13. Write a Python program to slice a tuple***Sample Output***

```
(10, 20, 30, 40, 50, 60, 70, 80, 90, 100)
```

```
(40, 50, 60, 70, 80)
```

14. Write a Python program to find the index of an item of a tuple***Sample Output***

(23, 45, 67, 78, 89, 90, 34, 56)

Item = 78

Index Number : 3

15. Write a Python program to find the length of a tuple

Sample Output

("Lion", "Cat", "Dog", "Panda", "Tiger", "Fox")

Length : 6

16. Write a Python program to convert a tuple to a dictionary

Sample Output

(("Name", "Ram"), ("Age", 23), ("City", "Salem"), ("Mark", 422))

{ 'Name': 'Ram', 'Age': 23, 'City': 'Salem', 'Mark': 422 }

17. Write a Python program to unzip a list of tuples into individual lists

Sample Output

[(10,30), (60,90), (20,50)]

[(10, 60, 20), (30, 90, 50)]

18. Write a Python program to reverse a tuple

Sample Output

Before Reverse : (23, 45, 67, 78, 89, 90, 34, 56)

After Reverse : (56, 34, 90, 89, 78, 67, 45, 23)

19. Write a Python program to convert a list of tuples into a dictionary

Sample Output

```
[ ("Name", "Ram"), ("Name", "Pooja"), ("Age", 21), ("Gender", "Male"), ("Age", 23), ("Gender", "Female") ]
```

```
{ 'Name' : ['Ram', 'Pooja'], 'Age' : [21, 23], 'Gender' : ['Male', 'Female'] }
```

20. Write a Python program to print a tuple with string formatting

Sample Output

```
("watermelons", "strawberries", "mangoes", "bananas", "grapefruits", "oranges", "apples", "pears")
```

```
Fruits ('watermelons', 'strawberries', 'mangoes', 'bananas', 'grapefruits', 'oranges', 'apples', 'pears')
```

21. Create a tuple with single item 23

Sample Output

```
Create a tuple with Item = 23
```

```
Type = tuple
```

22. Unpack the tuple into 5 variables

Sample Output

```
Tuple = (11, 22, 333, 44, 55)
```

```
11
```

```
22
```

```
33
```

44

55

23. Swap two tuples in Python

Sample Output

Before Swap A : 10

Before Swap B : 20

After Swap A : 20

After Swap B : 10

24. Copy specific elements from one tuple to a new tuple

Sample Output

(10, 20, 30, 40, 50, 60, 70, 80, 90, 100)

(30, 40, 50, 60, 70, 80)

25. Modify the tuple

Sample Output

(10, 20, 30, 40, 50)

(10, 20, 33, 40, 50)

26. Sort a tuple of tuples by 2nd item

Sample Output

(('a', 53), ('b', 37), ('c', 23), ('d', 1), ('e', 18))

(('d', 1), ('e', 18), ('c', 23), ('b', 37), ('a', 53))

27. Counts the number of occurrences of item 30 from a tuple

Sample Output

(30, 50, 10, 30, 70, 50, 30)

Number of Counts 30 : 3

28. Write a Python program to compute element-wise sum of given tuples

Sample Output

A = (2, 5, 8)

B = (6, 5, 1)

C = (1, 4, 7)

D = (3, 7, 2)

Sum of Elements = (12, 21, 18)

29. Write a Python program to sort a tuple by its float element

Sample Output

[('Ram', '89.20'), ('Siva', '76.45'), ('Pooja', '84.40'), ('Tara', '68.43'), ('Jeeva', '91.40')]

[('Jeeva', '91.40'), ('Ram', '89.20'), ('Pooja', '84.40'), ('Siva', '76.45'), ('Tara', '68.43')]

30. Write a Python program to replace last value of tuples in a list

Sample Output

[(5, 2, 3), (4, 7, 6), (8, 9, 6)]

Replace value = 10

[(5, 2, 10), (4, 7, 10), (8, 9, 10)]

31. Write a Python program to Extract tuples having K digit elements

Sample Output

```
[ (47, 23), (3, 78), (22, 53), (121, 45), (7,) ]
```

K = 2

```
[ (47, 23), (22, 53) ]
```

32. Write a Python program to Extract Symmetric Tuples

Sample Output

```
[ (18, 23), (2, 9), (7, 6), (9, 2), (10, 2), (23, 18) ]
```

```
{ (2, 9), (18, 23) }
```

33. Write a Python program to Sort Tuples by their Maximum element

Sample Output

```
[ (4, 5, 5, 7), (1, 3, 7, 4), (19, 4, 5, 3), (1, 2) ]
```

```
[ (19, 4, 5, 3), (4, 5, 5, 7), (1, 3, 7, 4), (1, 2) ]
```

34. Write a Python program to Remove nested records from tuple

Sample Output

```
(10, 20, (30,), 40, (50, 60), 70)
```

Removal of Nested Tuple : (10, 20, 40, 70)

35. Write a Python program to Elements Frequency in Mixed Nested Tuple

Sample Output

(10, 20, (20, 10), 30, (40, 50, 60), 60, 70)

Elements Frequency : {10: 2, 20: 2, 30: 1, 40: 1, 50: 1, 60: 2, 70: 1}

36. Write a Python program to get unique elements in nested tuple**Sample Output**

[(1, 3, 5), (4, 5, 7), (1, 2, 6), (10, 9), (10,)]

Unique Element in Nested Tuples : [1, 3, 5, 4, 7, 2, 6, 10, 9]

37. Write a Python program to Concatenate tuples to nested tuples**Sample Output**

Tuple 1 : ((18, 23, 2, 9),)

Tuple 2 : ((10, 3, 11),)

Tuples after Concatenating : ((18, 23, 2, 9), (10, 3, 11))

38. Write a Python program to Sort by Frequency of second element in Tuple List**Sample Output**

[(2, 7), (3, 7), (2, 5), (8, 7), (6, 5), (9, 8)]

Sorted List of tuples : [(2, 7), (3, 7), (8, 7), (2, 5), (6, 5), (9, 8)]

39. Write a Python program to Sort lists in tuple**Sample Output**

([10, 50, 60], [80, 20, 30], [70, 100, 40], (90,))

Tuple after sorting list : ([10, 50, 60], [20, 30, 80], [40, 70, 100], [90])

40. Write a Python program to Order Tuples using external List

Sample Output

[('B', 68), ('D', 70), ('A', 67), ('C', 69)]

Ordered Tuple List : [('A', 67), ('B', 68), ('C', 69), ('D', 70)]

41. Write a Python program to Filter Tuples by Kth element from List

Sample Output

[('B', 68), ('D', 70), ('A', 67), ('C', 69)]

List of kth elements to filter = [67 , 70 , 71, 75]

Kth element index = 1

Filtered tuples : [('D', 70), ('A', 67)]

42. Write a Python program to Closest Pair to Kth index element in Tuple

Sample Output

[(23, 18), (9, 2), (2, 3), (9, 18), (23, 2)]

Given Tuple = (20, 2)

Kth Element Index = 1

Nearest Tuple : (23, 18)

43. Write a Python program to Tuple List intersection (Order irrespective)

Sample Output

List 1 : [(3, 4), (5, 6), (9, 10), (4, 5)]

List 2 : [(5, 4), (3, 4), (6, 5), (9, 11)]

Intersection : { (4, 5), (5, 6), (3, 4) }

44. Write a Python program to Intersection in Tuple Records Data

Sample Output

list 1 : [('A', 65), ('D', 68), ('B', 66)]

list 2 : [('D', 68), ('C', 67), ('A', 65)]

Intersection of data records : [('A', 65), ('D', 68)]

45. Write a Python program to Unique Tuple Frequency (Order Irrespective)

Sample Output

[(3, 4), (1, 2), (4, 3), (5, 6)]

Unique tuples Frequency : [(1, 2), (3, 4), (5, 6)]

Unique tuples Frequency Count : 3

46. Write a Python program to Skew Nested Tuple Summation

Sample Output

(1, (2, (3, (4, (5, None)))))

Summation of 1st positions : 15

47. Write a Python program to Convert Binary tuple to Integer

Sample Output

(1, 0, 1, 0)

Decimal number is : 10

48. Write a Python program to Tuple XOR operation

Sample Output

Tuple 1 : (10, 4, 6, 9)

Tuple 2 : (5, 2, 3, 3)

XOR tuple : (15, 6, 5, 10)

49. Write a Python program to AND operation between Tuples

Sample Output

Tuple 1 : (10, 4, 6, 9)

Tuple 2 : (5, 2, 3, 3)

AND operation Between Tuple : (0, 0, 2, 1)

50. Write a Python program to Elementwise AND in tuples

Sample Output

Tuple 1 : (10, 4, 6, 9)

Tuple 2 : (5, 2, 3, 3)

Elementwise AND Tuple : (0, 0, 2, 1)