Home Work - Day 8

Python Tuple Datatype

1: Reverse the tuple

Given:

tuple1 = (10, 20, 30, 40, 50)

Expected output:

(50, 40, 30, 20, 10)

2: Access value 20 from the tuple

The given tuple is a nested tuple. write a Python program to print the value 20.

Given:

tuple1 = ("Orange", [10, 20, 30], (5, 15, 25))

Expected output:

20

3: Create a tuple with single item 50

4: Unpack the tuple into 4 variables

Write a program to unpack the following tuple into four variables and display each variable.

Given:

tuple1 = (10, 20, 30, 40)

Expected output:

tuple1 = (10, 20, 30, 40)

 # Your code

```
print(a) # should print 10
print(b) # should print 20
print(c) # should print 30
print(d) # should print 40
```

5: Swap two tuples in Python

Given:

tuple1 = (11, 22)
tuple2 = (99, 88)

Expected output:

tuple1: (99, 88)
tuple2: (11, 22)

6: Copy specific elements from one tuple to a new tuple

Write a program to copy elements 44 and 55 from the following tuple into a new tuple.

Given:

tuple1 = (11, 22, 33, 44, 55, 66)

Expected output:

tuple2: (44, 55)

7: Modify the tuple

Given is a nested tuple. Write a program to modify the first item (22) of a list inside a following tuple to 222

Given:
tuple1 = (11, [22, 33], 44, 55)

Expected output:
tuple1: (11, [222, 33], 44, 55)

8: Sort a tuple of tuples by 2nd item

Given:
tuple1 = (('a', 23), ('b', 37), ('c', 11), ('d',29))

Expected output:
(('c', 11), ('a', 23), ('d', 29), ('b', 37))

9: Counts the number of occurrences of item 50 from a tuple

Given:
tuple1 = (50, 10, 60, 70, 50)

Expected output:
2

10: Check if all items in the tuple are the same: tuple1 = (45, 45, 45, 45)

Expected output:
True

11. Write a Python program to create a tuple

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

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

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

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

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

17. Write a Python program to check whether an element exists within a tuple

18. Write a Python program to convert a list to a tuple

19. Write a Python program to remove an item from a tuple

20. Write a Python program to slice a tuple

21. Write a Python program to find the index of an item of a tuple

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

23. Write a Python program to reverse a tuple

24. Unpack the tuple into 5 variables

Given:

tuple1= (11, 22, 333, 44, 55)

Expected output:
11
22
33
44
55

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

26. Modify the tuple

Given:
t1 = (10,20,30,40,50)

Expected output:
Original Tuple: (10, 20, 30, 40, 50)
Modify Tuple: (10, 20, 33, 40, 50)

27. Write a Python program to Concatenate tuples to nested tuples

Given:

tup1 = (18, 23, 2, 9)
tup2 = (10, 3, 11)

Expected output:

Tuple 1: ((18, 23, 2, 9),)
Tuple 2: ((10, 3, 11),)
Tuples after Concatenating: ((18, 23, 2, 9), (10, 3, 11))

28. What is the output of the following code:

Given:
aTuple = (100, 200, 300, 400, 500)
aTuple[1] = 800
print(aTuple)

29. we assume that t1 and t2 are tuples, x, i, j, k, n are integers.

t1 = (10, 20, 30, 40, 50) and t2 = (60, 70, 80, 60)

Operation	Description
x in t1	Check if the tuple t1 contains the item x.
x not in t2	Check if the tuple t1 does not contain the item x.
t1 + t2	Concatenate the tuples t1 and t2. Creates a new tuple containing the items from t1 and t2.
t1 * 5	Repeat the tuple t1 5 times.
t1[i]	Get the item at the index i. Example, t1[2] is 30
t1[i:j]	Tuple slicing. Get the items from index i up to index j (excluding j) as a tuple. An example t1[0:2] is (10, 20)
t1[i:j:k]	Tuple slicing with step. Return a tuple with the items from index i up to index j taking every k-th item. An example t1[0:4:2] is (10, 30)
len(t1)	Returns a count of total items in a tuple
t2.count(60)	Returns the number of times a particular item (60) appears in a tuple. Answer is 2
t1.index(30)	Returns the index number of a particular item(30) in a tuple. Answer is 2
t1.index(40, 2, 5)	Returns the index number of a particular item(30) in a tuple. But search only from index number 2 to 5.
min(t1)	Returns the item with a minimum value from a tuple
max(t1)	Returns the item with maximum value from a tuple

30. What is the output of the following tuple operation

Given:

```
aTuple = (100, 200, 300, 400, 500)
aTuple.pop(2)
print(aTuple)
```