

3/7/20

ASSIGNMENT-13

MODULE-5

1) What is dictionary in python? Explain with an example

Ans: A dictionary is a collection of unordered set of key: value pairs, with a requirement that keys are unique in one dictionary.

eg:- >>> d = {}

>>> d["Mango"] = "Fruit"

>>> d["Banana"] = "Fruit"

>>> d["Cucumber"] = "veg"

>>> print(d)

{'Mango': 'Fruit', 'Banana': 'Fruit', 'Cucumber': 'Veg'}

2) What is tuple in python? Explain with an example

Ans: A tuple is a sequence of items, similar to lists.

eg: >>> t = 'Mango', 'Banana', 'Apple' (without parenthesis)

>>> print(t)

('Mango', 'Banana', 'Apple')

>>> t1 = ('Tom', 341, 'Jerry')

>>> print(t1)

('Tom', 341, 'Jerry')

3) Write a python program to sum all items in a list

```
def sum_list(items):
    sum_numbers = 0
    for x in items:
        sum_numbers += x
    return sum_numbers

print(sum_list([1, 2, -8]))
```

Output: -5

- 4) Write a python program to create a list of empty dictionaries.

```
n = 3
l = [{} for _ in range(n)]
print(l)
```

Output: [{}, {}, {}]

- 5) Write a python program to access dictionary keys element by index

```
num = {'physics': 80, 'maths': 90, 'chemistry': 86}
print(list(num)[0])
```

Output: physics

- 6) Write a python program to iterate over a dictionaries using for loops

```
d = {'Red': 1, 'Green': 2, 'Blue': 3}
for color_key, value in d.items():
    print(color_key, 'corresponds to', d[color_key])
```

Output:

Red corresponds to 1
Blue corresponds to 3
Green corresponds to 2

- 7) Write a python program to sum all the items in a dictionary

```
my_dict = {'data1': 100, 'data2': -54, 'data3': 2473}
print(sum(my_dict.values()))
```

Output: 293

- 8) Write a python script to concatenate following dictionaries to create a new one.

Example Dictionary:

a. dic 1 = {1:10, 2:20}

b. dic 2 = {3:30, 4:40}

c. dic 3 = {5:50, 6:60}

```
dic1 = {1:10, 2:20}
```

```
dic2 = {3:30, 4:40}
```

```
dic3 = {5:50, 6:60}
```

```
dic4 = {}
```

```
for d in (dic1, dic2, dic3): dic4.update(d)
```

```
print(dic4)
```

Output: {1:10, 2:20, 3:30, 4:40, 5:50, 6:60}

- 9) Write a python program to create a tuple and with different data types

A tuple can be created in python as a comma separated list of items - may or may not be enclosed with parenthesis

```
>>> t = 'Mango', 'Banana', 'Apple'  
>>> print(t)  
( 'Mango', 'Banana', 'Apple' )
```

```
>>> t1 = ('Tom', 341, 'Jerry')  
>>> print(t1)  
( 'Tom', 341, 'Jerry' )
```

Create a tuple with single value

```
>>> x = (3)  
>>> print(x)  
3  
>>> type(x)  
<class 'int'>
```

Using comma

```
>>> t = 3,  
>>> type(t)  
<class 'tuple'>
```

Using string

```
>>> t = tuple('Hello')  
>>> print(t)  
( 'H', 'e', 'l', 'l', 'o' )
```

Using list

```
>>> t = tuple([3, [12, 5], 'Hi'])  
>>> print(t)  
(3, [12, 5], 'Hi')
```

Using another tuple

```
>>> t = ('Mango', 34, 'hi')  
>>> t1 = tuple(t)  
>>> print(t1)  
( 'Mango', 34, 'hi')  
>>> t is t1  
True
```

10) Write a python program to create or convert a tuple to a string

```
def convertTuple(tup):  
    str = ''.join(tup)  
    return str  
tuple = ('g', 'i', 't', 'a', 'm')  
str = convertTuple(tuple)  
print(str)
```

Output: gitam

11) Write a python program to slice a tuple

```
tuple = (2,4,3,5,4,6,7,8,6,1)
```

```
slice = tuple[3:5]
```

```
print(_ slice)
```

```
_ slice = tuple[:6]
```

```
print(_ slice)
```

```
_ slice = tuple[5:]
```

```
print(_ slice)
```

```
_ slice = tuple[:]
```

```
print(_ slice)
```

```
_ slice = tuple[-8:-4]
```

```
print(_ slice)
```

```
tuple1 = tuple("Hello Gitam")
```

```
print(tuple1)
```

```
_ slice = tuple1[2:9:2]
```

```
print(_ slice)
```

```
_ slice = tuple1[::4]
```

```
print(_ slice)
```

```
_ slice = tuple1[9:2:-4]
```

```
print(_ slice)
```

Output :

(5, 4)

(2, 4, 3, 5, 4, 6)

(6, 7, 8, 6, 1)

(2, 4, 3, 5, 4, 6, 7, 8, 6, 1)

(3, 5, 4, 6)

('H', 'e', 'l', 'l', 'o', ' ', 'G', 'i', 't', 'a', 'm')

('l', 'o', 'g', 't')

('H', 'o', 't')

('a', ' ')

2) Write a python program to find the length of a tuple


```

tuple1 = tuple("Gitam")
print(tuple1)
print(len(tuple1))

```

Output: 'G', 'i', 't', 'a', 'm'
5

- 13) Write a python program to convert a tuple to a dictionary

```

tuple1 = ((2, "S"), (3, "K"))
print(dict((y, x) for x, y in tuple1))

```

Output: {'K': 3, 'S': 2}

- 14) Write a python program to reverse a tuple

```

x = ("Gitam University")
y = reversed(x)
print(tuple(y))
x = (5, 10, 15, 20)
y =

```

```

def reverse(tuple):
    new_tuple = tuple[::-1]
    return new_tuple
x = ("Gitam University")
print(reverse(x))

```

Output

('u', 't', 'i', 's', 'h', 'e', 'v', 'i', 'n', 'U', ' ', 'm', 'a', 't', 'i', 'G')

- 15) Write a python program to convert a list of tuples into a dictionary

```

l = [("x", 1), ("x", 2), ("y", 1), ("y", 2), ("z", 1)]
d = {}
for a, b in l:
    d.setdefault(a, []).append(b)
print(d)

```

Output: {'y': [1, 2], 'z': [1], 'x': [1, 2, 3]}

16) Write a python program to convert a list to a tuple

```
list x = [5, 10, 6, 28, 15]
```

```
print(list x)
```

```
tuple x = tuple (list x)
```

```
print (tuple x)
```

Output: [5, 10, 6, 28, 15]

(5, 10, 6, 28, 15)