**PYTHON ASSIGNMENT-5**

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1. Create a tuple of favorite movies.

Input:

mov=()

n=int(input("Enter the number of favorite movies: "))

while n>0:

movie=input("Enter your favorite movie: ")

mov=mov+(movie,)

n-=1

print(mov)

output:

Enter the number of favorite movies: 3

Enter your favorite movie: Inception

Enter your favorite movie: The Matrix

Enter your favorite movie: Interstellar

('Inception', 'The Matrix', 'Interstellar')

10. Check if two tuples are anagrams (same elements in different order).Input:

t=(1,2,3,4,5,6,7)

t1=(7,6,5,4,3,2,1)

print(t)

print(t1)

t2=sorted(t1)

t3=sorted(t1)

if t2==t3:

print('Both tuples are Anagram')

else:

print('Both tuples are not Anagram')

Output:

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

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

Both tuples are Anagram

11. Find a pair of numbers in a tuple that add up to a target sum.Input:

t=(1,2,3,4,5,6,7,8,9,10)

sum=int(input('Enter the sum: '))

i=0

print(t)

print('Targeted Sum:',sum)

for i in range(len(t)):

for j in range(i+1,len(t)):

if t[i]+t[j]==sum:

print('Pairs of numbers:',t[i],t[j])

Output:

Enter the sum: 10

(1, 2, 3, 4, 5, 6, 7, 8, 9, 10)

Targeted Sum: 10

Pairs of numbers: 1 9

Pairs of numbers: 2 8

Pairs of numbers: 3 7

Pairs of numbers: 4 6

12. Count frequency of elements in a tuple and store in a dictionary.Input:

t=tuple(input('Enter tuples: ').split(','))

dis={}

for i in t:

if i in dis:

dis[i]+=1

else:

dis[i]=1

print('Frequency of elements in the tuple:',dis)

Output:

Enter tuples: a,b,c,a,b

Frequency of elements in the tuple: {'a': 2, 'b': 2, 'c': 1}

14. Use set methods: add(), clear(), copy(), discard(), pop(), remove().Input:

c={1,2,3,4,5,6,7,8,9,10}

print(c)

c.add(11)

print(c)

c.remove(11)

print(c)

c.pop()

print(c)

c1=c.copy()

print(c1)

c.discard(3)

print(c)

c.clear()

print(c)

Output:

{1, 2, 3, 4, 5, 6, 7, 8, 9, 10}

{1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11}

{1, 2, 3, 4, 5, 6, 7, 8, 9, 10}

{2, 3, 4, 5, 6, 7, 8, 9, 10}

{2, 3, 4, 5, 6, 7, 8, 9, 10}

{2, 4, 5, 6, 7, 8, 9, 10}

set()

23. Count character frequency in a string using a dictionary.Input:

def count\_char\_frequency(s):

freq\_dict = {}

for char in s:

if char in freq\_dict:

freq\_dict[char] += 1

else:

freq\_dict[char] = 1

return freq\_dict

input\_string = str(input("Enter string: "))

result = count\_char\_frequency(input\_string)

print(result)

Output:

Enter string: hello

{'h': 1, 'e': 1, 'l': 2, 'o': 1}

24. Find the student with the highest marks.Input:

s = {

"John": 85,

"Jane": 90,

"Doe": 78

}

print(s)

print("Highest Marks is of: ")

print(max(s,key=s.get))

Output:

{'John': 85, 'Jane': 90, 'Doe': 78}

Highest Marks is of:

Jane

26. Merge two dictionaries and calculate average marks.Input:

dict1={

"John": 85,

"Jane": 90,

"Doe": 78

}

dict2={

"Alice": 95,

"Bob": 88,

"Charlie": 82

}

dict3 = dict1.copy()

dict3.update(dict2)

print(dict3)

Output:

{'John': 85, 'Jane': 90, 'Doe': 78, 'Alice': 95, 'Bob': 88, 'Charlie': 82}

27. Remove duplicate dictionaries from a list based on a key.Input:

dict\_list = [

{"name": "John", "age": 30},

{"name": "Jane", "age": 25},

{"name": "John", "age": 30},

{"name": "Doe", "age": 22}

]

unique\_dicts = {frozenset(d.items()): d for d in dict\_list}.values()

print(list(unique\_dicts))

Output:

[{'name': 'John', 'age': 30}, {'name': 'Jane', 'age': 25}, {'name': 'Doe', 'age': 22}]

28. Create an inverted dictionary where values become keys and keys become grouped in a list.Input:

d1= {

"a": 1,

"b": 2,

"c": 3,

"d": 4

}

d2 = {}

for key, value in d1.items():

if value not in d2:

d2[value] = [key]

else:

d2[value].append(key)

print(d2)

Output:

{1: ['a'], 2: ['b'], 3: ['c'], 4: ['d']}

2. Display the 2nd and 4th elements from a tuple.Input:

t=(1,2,3,4,5,6,7,8,9,10)

print(t)

print('Second element:',t[1])

print('Fourth element:',t[3])

Output:

(1, 2, 3, 4, 5, 6, 7, 8, 9, 10)

Second element: 2

Fourth element: 4

3. Replace an element in a tuple (convert to list and back).Input:

t=(1,2,3,4,5,6,7,8,9,10)

print(t)

l=list(t)

print(l)

l[3]=100

print(l)

t=tuple(l)

print(t)

Output:

(1, 2, 3, 4, 5, 6, 7, 8, 9, 10)

[1, 2, 3, 4, 5, 6, 7, 8, 9, 10]

[1, 2, 3, 100, 5, 6, 7, 8, 9, 10]

(1, 2, 3, 100, 5, 6, 7, 8, 9, 10)

4. Add and remove elements in a tuple using conversion.Input:

t=(1,2,3,4,5,6,7,8,9,10)

print(t)

l=list(t)

print(l)

l.remove(1)

l.append(200)

print(l)

t=tuple(l)

print(t)

Output:

(1, 2, 3, 4, 5, 6, 7, 8, 9, 10)

[1, 2, 3, 4, 5, 6, 7, 8, 9, 10]

[2, 3, 4, 5, 6, 7, 8, 9, 10, 200]

(2, 3, 4, 5, 6, 7, 8, 9, 10, 200)

5. Convert a list of fruits into a tuple.Input:

l=['mango','banana','apple','orange','kiwi']

print(l)

t=tuple(l)

print(t)

Output:

['mango', 'banana', 'apple', 'orange', 'kiwi']

('mango', 'banana', 'apple', 'orange', 'kiwi')

6. Use count() and index() methods on a tuple.Input:

t=(1,1,2,3,4,5,6,7,8,9,10)

print(t)

print('1 comes ',t.count(1),' times in the tuple')

print('Element on index 3 = ',t[3])

Output:

(1, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10)

1 comes 2 times in the tuple

Element on index 3 = 3

7. Find all duplicate elements in a tuple.Input:

l=[1,2,3,4,5,5,6,7,8,9,10]

print(l)

l1=[]

l2=[]

for l in l:

if l in l1:

l2.append(l)

else:

l1.append(l)

print('Duplicates are:')

print(l2)

Output:

[1, 2, 3, 4, 5, 5, 6, 7, 8, 9, 10]

Duplicates are:

[5]

8. Find the index of the first even number in a tuple.Input:

t=(1,1,2,3,4,5,6,7,8,9,10)

print(t)

i=0

print('First even number in the tuple is on index:')

while i<len(t):

if t[i]%2==0:

print('Index: ',i,' Value: ',t[i])

break

i+=1

print('End of program')

Output:

(1, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10)

First even number in the tuple is on index:

Index: 2 Value: 2

End of program

9. Swap two values in a tuple (e.g., first and third).Input:

l=[1,2,3,4,5,6,7,8,9,10]

print(l)

n=l[2]

l[2]=l[3]

l[3]=n

t=tuple(l)

print(t)

Output:

[1, 2, 3, 4, 5, 6, 7, 8, 9, 10]

(1, 2, 4, 3, 5, 6, 7, 8, 9, 10)

14. Use set methods: add(), clear(), copy(), discard(), pop(), remove().Input:

c={1,2,3,4,5,6,7,8,9,10}

print(c)

c.add(11)

print(c)

c.remove(11)

print(c)

c.pop()

print(c)

c1=c.copy()

print(c1)

c.discard(3)

print(c)

c.clear()

print(c)

Output:

{1, 2, 3, 4, 5, 6, 7, 8, 9, 10}

{1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11}

{1, 2, 3, 4, 5, 6, 7, 8, 9, 10}

{2, 3, 4, 5, 6, 7, 8, 9, 10}

{1, 2, 3, 4, 5, 6, 7, 8, 9, 10}

{1, 2, 4, 5, 6, 7, 8, 9, 10}

set()

15. Perform union and update operations between two sets.Input:

s={1,2,3,4,5,6}

s1={7,8,9,10}

s2=s.union(s1)

print(s2)

s3={11,12,13,14}

s1.update(s3)

print(s1)

Output:

{1, 2, 3, 4, 5, 6, 7, 8, 9, 10}

{7, 8, 9, 10, 11, 12, 13, 14}

16. Find common elements between two sets.Input:

s={2,1,3,4,5,6,7}

s1={8,9,10,1,2,3,4}

print(s)

print(s1)

s2=s.intersection(s1)

print(s2)

Output:

{1, 2, 3, 4, 5, 6, 7}

{1, 2, 3, 4, 8, 9, 10}

{1, 2, 3, 4}

17. Check if one set is a subset of another.Input:

s={2,1,3,4,5,6,7}

s1={1,2,3,4}

print(s)

print(s1)

s2=s1.issubset(s)

print(s2)

Output:

{1, 2, 3, 4, 5, 6, 7}

{1, 2, 3, 4}

True

28. Create an inverted dictionary where values become keys and keys become grouped in a list.Input:

d1= {

"a": 1,

"b": 2,

"c": 3,

"d": 4

}

d2 = {}

for key, value in d1.items():

if value not in d2:

d2[value] = [key]

else:

d2[value].append(key)

print(d2)

Output:

{1: ['a'], 2: ['b'], 3: ['c'], 4: ['d']}

27. Remove duplicate dictionaries from a list based on a key.Input:

dict\_list = [

{"name": "John", "age": 30},

{"name": "Jane", "age": 25},

{"name": "John", "age": 30},

{"name": "Doe", "age": 22}

]

unique\_dicts = {frozenset(d.items()): d for d in dict\_list}.values()

print(list(unique\_dicts)) dict\_list = [

{"name": "John", "age": 30},

{"name": "Jane", "age": 25},

{"name": "John", "age": 30},

{"name": "Doe", "age": 22}

]

unique\_dicts = {frozenset(d.items()): d for d in dict\_list}.values()

print(list(unique\_dicts))

Output:

[{'name': 'Doe', 'age': 22}, {'name': 'Jane', 'age': 25}, {'name': 'John', 'age': 30}]

24. Find the student with the highest marks.Input:

s = {

"John": 85,

"Jane": 90,

"Doe": 78

}

print(s)

print("Highest Marks is of: ")

print(max(s,key=s.get))

Output:

{'John': 85, 'Jane': 90, 'Doe': 78}

Highest Marks is of:

Jane

25. Group words by their length using a dictionary.Input:

words = list(input("Enter words separated by spaces: ").split())

dict= {}

for i in words:

dict[i]=len(i)

print(dict)

Output:

Enter words separated by spaces: apple banana cherry

{'apple': 5, 'banana': 6, 'cherry': 6}

26. Merge two dictionaries and calculate average marks.Input:

dict1={

"John": 85,

"Jane": 90,

"Doe": 78

}

dict2={

"Alice": 95,

"Bob": 88,

"Charlie": 82

}

dict3 = dict1.copy()

dict3.update(dict2)

print(dict3)

Output:

{'John': 85, 'Jane': 90, 'Doe': 78, 'Alice': 95, 'Bob': 88, 'Charlie': 82}

28. Create an inverted dictionary where values become keys and keys become grouped in a list.

Input:

d1= {

    "a": 1,

    "b": 2,

    "c": 3,

    "d": 4

}

d2 = {}

for key, value in d1.items():

    if value not in d2:

        d2[value] = [key]

    else:

        d2[value].append(key)

print(d2)

Output:

{1: ['a'], 2: ['b'], 3: ['c'], 4: ['d']}