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code

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# GitHub repository link :- https://github.com/20CS071/CE259_PYTHON.git

# Dictionary
# a. Write a Python script to check whether a given key already exists in a
dictionary.

student= {
     'Id': '20CS071',
     'Name': 'Mansi',
     'Age': '19',
     'gender': 'Female',
     'skills': ['Art', 'Music','Programming']
}

print('Name' in student)
print( 'Address' in student)

# b. Write a Python script to merge two Python dictionaries.

student1= {
     'Id': 'ab123',
     'Name': 'abc',
     'Age': '19'
 }
student2= {
     'Id': '20CS071',
     'Name': 'Mansi',
     'Age': '19',
     'gender': 'Female',
     'skills': ['Art', 'Music', 'Programming']
 }
student3=student1.copy()
student3.update(student2)
print(student3)

# c. Write a Python program to sum all the items in a dictionary.

Dict1= {
     'a': 23,
     'b': 12,
     'c': 19,
     'd': 55,
     'e': 76
 }

sum=0;
for i in Dict1:
     sum=sum+Dict1[i]

print(sum)

# d. Write a Python script to add a key to a dictionary.

#Sample Dictionary : {0: 10, 1: 20}
#ExpectedResult : {0: 10, 1: 20, 2: 30}
```

```
dict={
     0: 10,
     1: 20
 }
dict.update({2: 30})
print(dict)

# Another example for above question

student_ = {
     'Id': 'ab123',
     'Name': 'abc',
     'Age': '19'
 }

print("before updating")
print(student_)
student_.update({'roll_no':55})
print("after updating")
print(student_)

 #e. Write a Python script to concatenate following dictionaries to create a
new one.
#Sample Dictionary :
#dic1={1:10, 2:20}
#dic2={3:30, 4:40}
#dic3={5:50,6:60}
#Expected Result : {1: 10, 2: 20, 3: 30, 4: 40, 5: 50, 6: 60}

dict1={1:10, 2:20}
dict2={3:30, 4:40}
dict3={5:50,6:60}
dict4 = {}
for d in (dict1, dict2, dict3): dict4.update(d)
print(dict4)

# Tuple

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

tuple1 = ("Mansi",2.131,False,982)
print(tuple1)

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

#Creating a tuple with numbers
tuple2 = 5, 10, 15, 20, 25
print(tuple2[0])

# c. Write a Python program to add an item in a tuple.

#create a tuple
tuple3 = (4, 6, 2, 8, 3, 1)
print(tuple3)
#tuples are immutable, so you can not add new elements
#using merge of tuples with the + operator you can add an element and it will
create a new tuple
```

```
tuple4 = tuple3 + (9,)
print(tuple4)
#adding items in a specific index
tuple5 = tuple3[:5] + (15, 20, 25)
print(tuple5)
#converting the tuple to list
list1 = list(tuple3)
#use different ways to add items in list
list1.append(30)
tuple6 = tuple(list1)
print(tuple6)

# d. Write a Python program to convert a tuple to a string.

tuple7 = ('M', 'I', 'H', 'I', 'R')
str =''.join(tuple7)
print(str)

# e. Write a Python program to find the length of a tuple.

#create a tuple
tuple8 =(12,21,32,23,43,34,54,45)
print(tuple8)
#use the len() function to known the length of tuple
print(len(tuple8))

# Set
print("\nAdding one element:")
Fruits_basket.add("apple")
print(Fruits_basket)
print("\nAdding multiple items:")
Fruits_basket.update(["orange","mango","banana","grapes"])
print(Fruits_basket)
print("\nclearing the Fruits_basket set")
Fruits_basket.clear()
print(Fruits_basket)

# b. Write a Python program to remove an item from a set if it is present in
the set.

set1 = {"mansi", "rahi", "krishna", "mahi", "azy", "ira", "vishwa"}
print(set1)
name = input("insert a name to remove from a list")
initial_length=len(set1)
for i in set1:
     if name == i:
         set1.discard(name)
         break
final_length=len(set1)
if initial_length == final_length:
     print("item entered by you is not present inside the list")
else :
     print("item removed successfully from the set")
print(set1)

# c. Write a Python program to create an intersection, Union, difference of
sets.
```

```
# sets are define
A = {21, 31, 43, 62, 82, 32, 46};
B = {89, 32, 46, 23, 31, 44, 53};
# intersection
print("Intersection :", A & B)
# union
print("Union :", A | B)
# difference
print("Difference :", A - B)

# d. Write a Python program to find maximum and the minimum value in a set.

#Create a set
set_ex = {522, 103, 32, 1245, 2, 230}
print("Original set elements:")
print(set_ex)
print(type(set_ex))
print("\nMaximum value of the said set:")
print(max(set_ex))
print("\nMinimum value of the said set:")
print(min(set_ex))

# e. Write a Python program to find the most common elements and their counts
from list, tuple, dictionary.

from collections import Counter
list_1 = [14, 24, 45, 45, 94, 19]
cntr = Counter(list_1)
#most_common(1) returns top 1 most common element with its frequency.
most_common_element,frequency = cntr.most_common(1)[0] # Return the most
common element and its frequency with most_common
print("The most common element is {}, and the frequency of that element is
{}".format(most_common_element,frequency))
```

Output

Dictionary

 # a

```
True
False
{'Id': '20CS071', 'Name': 'Mansi', 'Age': '19', 'gender': 'Female', 'skills': ['Art', 'Music', 'Programming']}
```

 # b

```
{'Id': '20CS071', 'Name': 'Mansi', 'Age': '19', 'gender': 'Female', 'skills': ['Art', 'Music', 'Programming']}
```

 # c

```
185
```

 # d

```
{0: 10, 1: 20, 2: 30}
before updating
{'Id': 'ab123', 'Name': 'abc', 'Age': '19'}
after updating
{'Id': 'ab123', 'Name': 'abc', 'Age': '19', 'roll_no': 55}
```

 # e

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

Tuple

 # a

```
('Mansi', 2.131, False, 982)
```

 # b

```
5
```

 # c

```
(4, 6, 2, 8, 3, 1)
(4, 6, 2, 8, 3, 1, 9)
(4, 6, 2, 8, 3, 15, 20, 25)
(4, 6, 2, 8, 3, 1, 30)
```

 # d

```
MANSI RAVAL
```

 # e

```
(12, 21, 32, 23, 43, 34, 54, 45)
8
```

Set

 # a

```
Adding one element:
Traceback (most recent call last):
  File "main.py", line 2, in <module>
    Fruits_basket.add("apple")
NameError: name 'Fruits_basket' is not defined
```

 # b

```
{'vishwa', 'azy', 'mansi', 'ira', 'krishna', 'rahi', 'mahi'}
insert a name to remove from a listmansi
item removed successfully from the set
{'vishwa', 'azy', 'ira', 'krishna', 'rahi', 'mahi'}
```

	# c Intersection : {32, 46, 31} Union : {32, 43, 44, 46, 82, 21, 53, 23, 89, 62, 31} Difference : {82, 43, 21, 62}
	# d Original set elements: {32, 2, 230, 103, 522, 1245} <class 'set'> Maximum value of the said set: 1245 Minimum value of the said set: 2
	# e The most common element is 45, and the frequency of that element is 2