**Python Data Type: Dictionary**

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GitHub link:

Structure of task presentation:

* The content of the task
* Theoretical issues
* Code
* Code result

1. Write a Python program to sort (ascending and descending) a dictionary by value.

def sum\_list(items):

sum\_numbers = 0

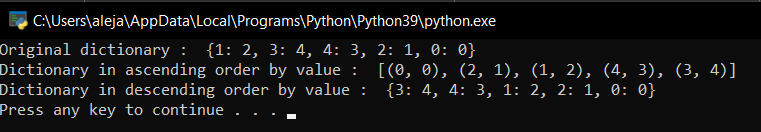
for x in items:

sum\_numbers += x

return sum\_numbers

print(sum\_list([-1, 9, -8]))

OUTCOME:



1. Write a Python script to add a key to a dictionary.

def sum\_list(items):

sum\_numbers = 0

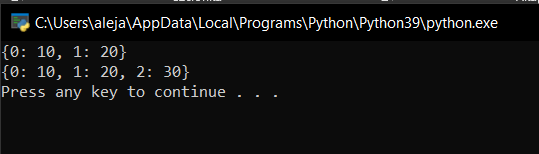
for x in items:

sum\_numbers += x

return sum\_numbers

print(sum\_list([-1, 9, -8]))

OUTCOME:



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

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

def is\_key\_present(x):

if x in d:

print('Key is present in the dictionary')

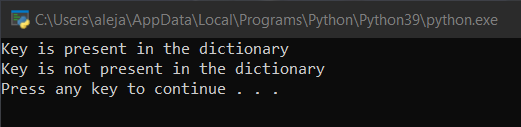
else:

print('Key is not present in the dictionary')

is\_key\_present(5)

is\_key\_present(9)

OUTCOME:



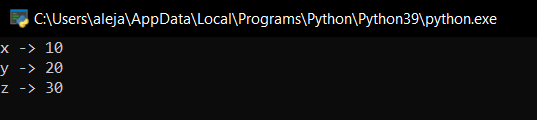
1. Write a Python program to iterate over dictionaries using for loops.

d = {'x': 10, 'y': 20, 'z': 30}

for dict\_key, dict\_value in d.items():

print(dict\_key, '->', dict\_value)

OUTCOME:



1. Write a Python script to merge two Python dictionaries.

d1 = {'a': 100, 'b': 200}

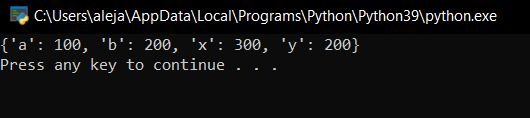
d2 = {'x': 300, 'y': 200}

d = d1.copy()

d.update(d2)

print(d)

OUTCOME:



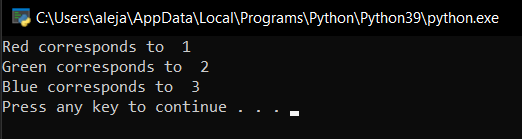
1. Write a Python program to iterate over dictionaries using for loops.

d = {'Red': 1, 'Green': 2, 'Blue': 3}

for color\_key, value in d.items():

print(color\_key, 'corresponds to ', d[color\_key])

OUTCOME:



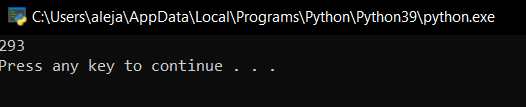
1. Write a Python program to sum all the items in a dictionary.

my\_dict = {'data1': 100, 'data2': -54, 'data3': 247}

result = sum(my\_dict.values())

print(result)

OUTCOME:



1. Write a Python program to multiply all the items in a dictionary.

my\_dict = {'data1': 100, 'data2': -54, 'data3': 247}

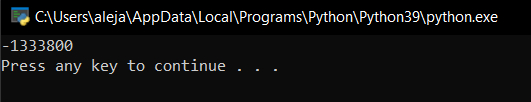
result = 1

for key in my\_dict:

result = result \* my\_dict[key]

print(result)

OUTCOME:



1. Write a Python program to remove a key from a dictionary.

myDict = {'a': 1, 'b': 2, 'c': 3, 'd': 4}

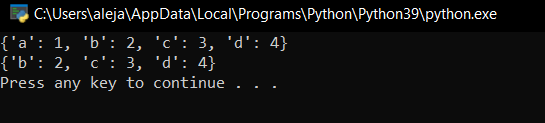
print(myDict)

if 'a' in myDict:

del myDict['a']

print(myDict)

OUTCOME:



1. Write a Python program to map two lists into a dictionary

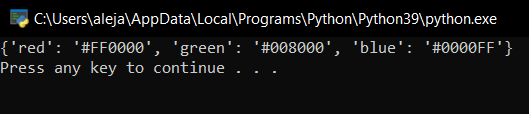
keys = ['red', 'green', 'blue']

values = ['#FF0000', '#008000', '#0000FF']

color\_dictionary = dict(zip(keys, values))

print(color\_dictionary)

OUTCOME:



1. Write a Python program to sort a given dictionary by key.

color\_dict = {

'red': '#FF0000',

'green': '#008000',

'black': '#000000',

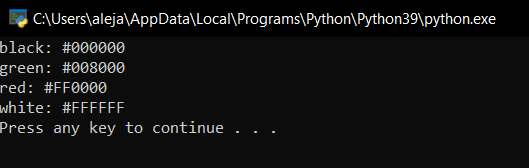
'white': '#FFFFFF'

}

for key in sorted(color\_dict):

print("%s: %s" % (key, color\_dict[key]))

OUTCOME:



1. Write a Python program to get the maximum and minimum values of a dictionary.

color\_dict = {

'red': '#FF0000',

'green': '#008000',

'black': '#000000',

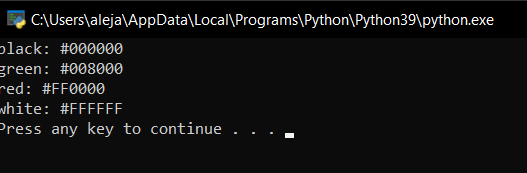
'white': '#FFFFFF'

}

for key in sorted(color\_dict):

print("%s: %s" % (key, color\_dict[key]))

OUTCOME:



1. Write a Python program to get a dictionary from an object's fields.

class dictObj(object):

def \_\_init\_\_(self):

self.x = 'red'

self.y = 'Yellow'

self.z = 'Green'

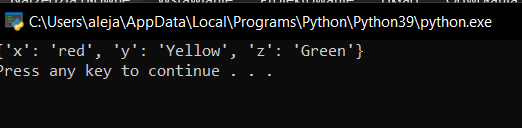
def do\_nothing(self):

pass

test = dictObj()

print(test.\_\_dict\_\_)

OUTCOME:



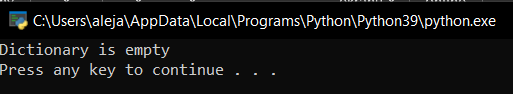
1. Write a Python program to check if a dictionary is empty or not.

my\_dict = {}

if not bool(my\_dict):

print("Dictionary is empty")

OUTCOME:



1. Write a Python program to create and display all combinations of letters, selecting each letter from a different key in a dictionary.

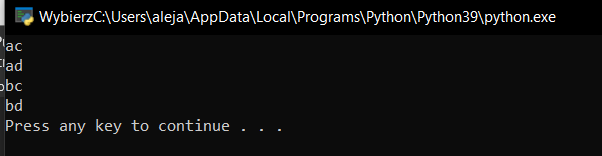
import itertools

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

for combo in itertools.product(\*[d[k] for k in sorted(d.keys())]):

print(''.join(combo))

OUTCOME:



1. Write a Python program to find the highest 3 values of corresponding keys in a dictionary.

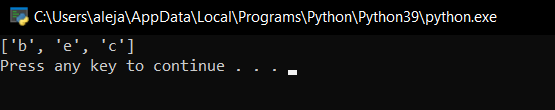
from heapq import nlargest

my\_dict = {'a': 500, 'b': 5874, 'c': 560, 'd': 400, 'e': 5874, 'f': 20}

three\_largest = nlargest(3, my\_dict, key=my\_dict.get)

print(three\_largest)

OUTCOME:



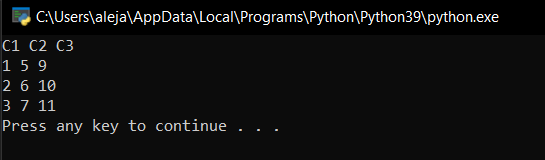
1. Write a Python program to print a dictionary in table format.

my\_dict = {'C1': [1, 2, 3], 'C2': [5, 6, 7], 'C3': [9, 10, 11]}

for row in zip(\*([key] + (value) for key, value in sorted(my\_dict.items()))):

print(\*row)

OUTCOME:



1. Write a Python program to convert a list into a nested dictionary of keys.

num\_list = [1, 2, 3, 4]

new\_dict = current = {}

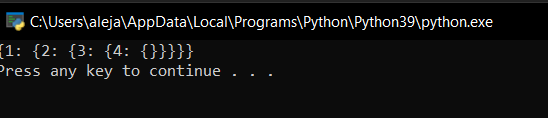
for name in num\_list:

current[name] = {}

current = current[name]

print(new\_dict)

OUTCOME:



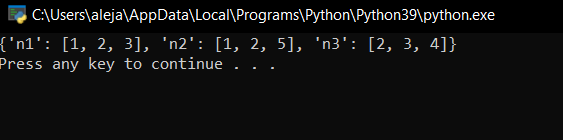
1. Write a Python program to sort a list alphabetically in a dictionary.

num = {'n1': [2, 3, 1], 'n2': [5, 1, 2], 'n3': [3, 2, 4]}

sorted\_dict = {x: sorted(y) for x, y in num.items()}

print(sorted\_dict)

OUTCOME:



1. Write a Python program to replace dictionary values with their sums

def sum\_math\_v\_vi\_average(list\_of\_dicts):

for d in list\_of\_dicts:

n1 = d.pop('V')

n2 = d.pop('VI')

d['V+VI'] = (n1 + n2) / 2

return list\_of\_dicts

student\_details = [

{'id': 1, 'subject': 'math', 'V': 70, 'VI': 82},

{'id': 2, 'subject': 'math', 'V': 73, 'VI': 74},

{'id': 3, 'subject': 'math', 'V': 75, 'VI': 86}

]

print(sum\_math\_v\_vi\_average(student\_details))

OUTCOME:

