Exercises in python

// finding an average number

import random

x = round(random.uniform(5, 50),1)

random\_list = [x]

sum\_list = sum(random\_list)

len\_list = len(random\_list)

avg\_num = sum\_list / len\_list

print(*f*"The average of the list is: {avg\_num} ")

example of code when compiled:

The average of the list is: 19.4

------------------------------------------------------------------------------------------------------------------------------------------

// combine lists without duplicates or 1.1.1.1

known\_ips = ['12.45.23.1', '89.34.23.67', '67.45.23.43', '90.32.65.98']

new\_ips = ['45.23.98.12', '89.23.21.9', '67.45.23.43', '1.1.1.1']

for item in new\_ips:

    if item != '1.1.1.1':

        known\_ips.append(item)

    else:

        print("Known IP Addresses Updated: ")

for item in known\_ips:

    print(item)

example of code when compiled:

Known IP Addresses Updated:

12.45.23.1

89.34.23.67

67.45.23.43

90.32.65.98

45.23.98.12

89.23.21.9

67.45.23.43

------------------------------------------------------------------------------------------------------------------------------------------

camelcase = ['bees', 'BEES', 'BeEs', 'Bees', 'BeeS']

for bee in camelcase:

    if bee != bee.lower() and bee != bee.upper():

        print('buzz buzz')

example of code when compiled:

buzz buzz

buzz buzz

buzz buzz

------------------------------------------------------------------------------------------------------------------------------------------

//

#variables

fav\_nums = {'sam':56, 'ken':98, 'saul':6}

lookup = ('sam','ben','ken','paul','saul')

theAVG = *int*(theSum/ len(fav\_nums))

theSum= 0

#loops

for key in lookup:

    fav\_nums.setdefault(key)

for node in fav\_nums:

    if fav\_nums.get(node) == None:

        fav\_nums.update({node: input(*f*"What is {node}'s favorite number? ")})

for numx, numy in fav\_nums.items():

    theSum += *int*(numy)

#print outs

print("Favorite numbers: ")

for numx, numy in fav\_nums.items():

    print(numx, numy)

print("Bonus - Average Favorite Number: ")

print(theAVG)

example of code when compiled:

Favorite numbers:

sam 56

ken 98

saul 6

ben 5

paul 10

Bonus - Average Favorite Number:

57

------------------------------------------------------------------------------------------------------------------------------------------

//

# defining function

*def* ips(*a*,*b*,*c*):

    result1=a+b+c

    return(result1)

a = ['45.23.98.12', '89.23.21.9', '67.45.23.43', '1.1.1.1']

b = ['1.1.1.1']

c = ['78.34.23.21', '90.43.65.1']

new\_list = []

result1= ips(a,b,c)

known\_ips = ['12.45.23.1', '89.34.23.67', '67.45.23.43', '90.32.65.98']

final\_list = *set*(known\_ips) | *set*(result1)

item = final\_list

for result in item:

    if result != '1.1.1.1':

       new\_list.append(result)

print("Known ips: ")

for result in new\_list:

    print(result)

example of code when compiled:

Known ips:

90.32.65.98

67.45.23.43

78.34.23.21

89.34.23.67

45.23.98.12

89.23.21.9

12.45.23.1

90.43.65.1

------------------------------------------------------------------------------------------------------------------------------------------

// open and read the contents of a text file //

try:

    with open ("input.txt") as f:

        contents = f.read()

except *FileNotFoundError*:

    print("file not found.  Check your path and try again")

else:

    print(contents)

example of code when compiled:

(this will export the contents of the input.txt file)

------------------------------------------------------------------------------------------------------------------------------------------

// create a text file and json file and a yaml and write a random list of 40 numbers between 5 and 50

import random, json, yaml

#Generate 40 random numbers between 10 and 30

randomlist = random.sample(range(5, 50), 40)

# open file

with open('basic-data.txt', 'w+') as f:

    # write elements of list

    for items in randomlist:

        f.write('%s\n' %items)

    print("File written successfully")

# close the file

f.close()

with open('basic-data.json', 'w') as outfile:

    json.dump(randomlist, outfile)

outfile.close()

with open("basic-data.yaml", "w") as out:

    yaml.dump(randomlist, out)

out.close()

example of code when compiled:

File written successfully. ( plus the three files are created and the list generated)

------------------------------------------------------------------------------------------------------------------------------------------

//

with open("basic-data.txt") as f:

    numbers = []

    for line in f:

        numbers.append(*int*(line))

    numbers.sort()

count = len(numbers)

max\_num = max(numbers)

min\_num = min(numbers)

sum\_of\_nums = sum(numbers)

mean = numbers[sum(numbers)//40]

print(mean)

median = numbers[len(numbers)//2]

print(median)

mode = max(numbers, *key*=*lambda* *n*: numbers.count(n))

print(mode)

example of code when compiled:

35

28

5

------------------------------------------------------------------------------------------------------------------------------------------

// was given a json file and needed to print off the coming Tuesday about eh detailed forecast section

#printed version of part3

import json

with open ('forecast.json') as f:

    file = json.load(f)

print(file['properties']['periods'][11]['detailedForecast'])

example of code when compiled:

A chance of showers and thunderstorms between 8am and 2pm, then a chance of showers and thunderstorms. Mostly sunny, with a high near 88. Chance of precipitation is 40%.

------------------------------------------------------------------------------------------------------------------------------------------

import json

with open ('forecast2.json',) as f:

    data = json.load(f)

temps = data['properties']['periods']

for temp in temps:

    print(temp['name'])

    print(temp['temperature'])

example of code when compiled:

This Afternoon

79

Tonight

68

Thursday

83

Thursday Night

69

Friday

85

Friday Night

66

Saturday

88

Saturday Night

67

Sunday

86

Sunday Night

63

Monday

84

Monday Night

59

Tuesday

80

Tuesday Night

57

------------------------------------------------------------------------------------------------------------------------------------------