Python Practical (208) – Assignment-3

'''

Q.1. Write a Python program to create a list of numbers by taking input from the user and then remove the duplicates from the list. You can take input of non-zero numbers, with an appropriate prompt, from the user until the user enters a zero to create the list assuming that the numbers are non-zero.

Sample Input: [10, 34, 18, 10, 12, 34, 18, 20, 25, 20]

Output: [10, 34, 18, 12, 20, 25]

'''

```python
#By Using Convert list to set

list1 = []

while True:

    num = input("Enter Number : ")

    try:

        num = int(num)

        if num == 0:

            break

        list1.append(num)

    except:

        print("Please enter Numbers Only...")

    finally:

        print("Enter 0 (zero) to STOP...")


print("Input : ",list1)

set1 = set(list1)

anslist1 = list(set1)

print("Output : ",anslist1)
```

'''

```python
#Check each time item exists or not

list1 = []

anslist1 = []

while True:

    num = input("Enter Number : ")
```

```python
    try:
        num = int(num)
        if num == 0:
            break
        if num not in list1:
            anslist1.append(num)
        list1.append(num)
    except:
        print("Please enter Numbers Only...")
    finally:
        print("Enter 0 (zero) to STOP...")


print("Input : ",list1)
print("Output : ",anslist1)
'''
```

'''

Q.2. Write a Python program to create a list of lists of numbers (i.e. each element of the list is a list of numbers e.g. [[1, 2], [3, 2, 5], [1], [5, 3, 6, 7]]. Then generate a list from the given list where each element of the list is the length of each list in the given list. i.e. for the given example the output should be [2, 3, 1, 4]. You can take input of non-zero numbers, with an appropriate prompt, from the user until the user enters a zero to create the list assuming that the numbers are non-zero.

Sample Input: [[1, 2], [3, 2, 5], [1], [5, 3, 6, 7]]

Output: [2, 3, 1, 4]

'''

```python
list1 = []
anslist1 = []
while True:
    take = input("\nEnter Y or y to enter new list :  ")
    try:
        take = str(take)
        take = take[0]
        if take == 'y' or take == 'Y':
            templist = []
            while True:
                print("Enter 0 (zero) to STOP Current list...")
                num = input("Enter Number : ")
                try:
                    num = int(num)
                    if num == 0:
                        break
                    templist.append(num)
                except:
                    print("Please enter Numbers Only...")

            list1.append(templist)
            anslist1.append(len(templist))
        else:
            print("Terminated...")
            break
    except:
```

```python
        print("Please enter Y to continue..")


print("Input : ",list1)

print("Size of Each List Element : ",anslist1)
```

'''

Q.3. Write a Python program to create a list of numbers by taking input from the user. Split this list into two tuples where one tuple contains odd numbers, and the other tuple contains even numbers from the list. You can take input of non-zero numbers, with an appropriate prompt, from the user until the user enters a zero to create the list assuming that the numbers are nonzero.

Sample Input: [10, 12, 13, 90, 43, 32, 30, 11]

Output:

Tuple of Odd Numbers: (13, 43, 11)

Tuple of Even Numbers: (10, 12, 90, 32, 30)

'''

```python
def funOdd():
    listOdd = []
    for i in list1:
        if i % 2 != 0:
            listOdd.append(i)
    return tuple(listOdd)


def funEven():
    listEven = []
    for i in list1:
        if i % 2 == 0:
            listEven.append(i)
    return tuple(listEven)


list1 = []

while True:
    num = input("Enter Number : ")
    try:
        num = int(num)
        if num == 0:
            break
        list1.append(num)
    except:
```

```
        print("Please enter Numbers Only...")
    finally:
        print("Enter 0 (zero) to STOP...")


print("Input : ",list1)
print("Tuple of Odd Numbers : ",funOdd())
print("Tuple of Even Numbers : ",funEven())
```

'''

Q.4. Write a Python program to create a list of elements of any data type (mixed data type, i.e. some elements maybe of type int, some elements of type float and some elements of type string). Split this list into three tuples containing elements of same data type (i.e. 1st tuple of integers only, 2nd tuple of float only and 3rd tuple of strings only). Take input from the user to create the list.

Sample Input: [25, 4.5, 'Hello', 90, 20, 7.5, 9.25, 'World']

Output:

Tuple of Integers: (25, 90, 20)

Tuple of Float Values: (4.5, 7.5, 9.25)

Tuple of Strings: ('Hello', 'World')

'''

```python
list1 = []
listInt = []
listFloat = []
listStr = []
while True:
    num = input("Enter Input : ")
    try:
        if num == "0":
            break
        try:
            num = int(num)
            listInt.append(num)
        except:
            try:
                num = float(num)
                listFloat.append(num)
            except:
                num = str(num)
                listStr.append(num)
        list1.append(num)
    except:
        print("Please enter Valid Input Only...")
    finally:
```

```python
    print("Enter 0 (zero) to STOP...")


print("Input : ",list1)

print("List of Integers : ",tuple(listInt))

print("List of Float Values : ",tuple(listFloat))

print("List of Strings : ",tuple(listStr))
```

'''

Q.5. Write a Python program to create a dictionary of student data by taking input from the user, where each student data contains Rollno (to be considered as key), and marks in 3 subjects (to be considered as list of values). e.g. {1 : [45, 40, 35], 2 : [41, 38, 39], 3 : [35, 30, 37]}. Prepare mark list in the following format:

Roll No. Mark-1 Mark-2 Mark-3 Total

1 45 40 35 120

'''

```python
dict1 = {}

n = input("\nEnter Number of Student : ")

try:

    n = int(n)

    for i in range(n):

        roll = input("Enter Roll No. : ")

        markList = []

        k=1

        while k<=3:

            num = input("Enter Marks : ")

            try:

                num = int(num)

                markList.append(num)

                k += 1

            except:

                print("Please enter Numbers Only...")

        dict1[roll] = markList

except:

    print("Please enter Positive Number..")


print("Input : ",dict1)

print("Output : ")

print("Roll No. Mark-1 Mark-2 Mark-3 Total")

for i in dict1.items():

    print(i[0],end ="\t")

    sum = 0

    for k in i[1]:
```

```python
    print(k,end ="\t")
    sum += k
print(sum,end="\t")
print("\n")
```

'''

Q.6. Write a Python program to take input of a string from the user and then create a dictionary containing each character of the string along with their frequencies. (e.g. if the string is 'banana' then output should be {'b': 1, 'a': 3, 'n': 2}.

'''

```python
dict1 = {}

str1 = input("\nEnter String : ")

for i in range(len(str1)):

    n = str1[i]

    dict1[n]=str1.count(n)


print("Input : ",str1)

print("Output : ",dict1)
```

'''

Q.7. Write a Python program to create a list of strings by taking input from the user and then create a dictionary containing each string along with their frequencies. (e.g. if the list is ['apple', 'banana', 'fig', 'apple', 'fig', 'banana', 'grapes', 'fig', 'grapes', 'apple'] then output should be {'apple': 3, 'banana': 2, 'fig': 3, 'grapes': 2}.

'''

```python
list1 = []
dict1 = {}
while True:
    print("Enter 0 to STOP...")
    str1 = input("\nEnter String : ")
    if str1 == "0":
        break
    list1.append(str1)

n = (len(list1))
i = 0
while i<n:
    count = list1.count(list1[i])
    dict1[list1[i]] = count
    i += 1

print("Input : ",list1)
print("Output : ",dict1)
```

'''

Q.8. Write a Python program to input a string that is a list of words separated by commas. Construct a dictionary that contains all these words as keys and their frequencies as values. Then display the words with their quantities.

'''

```python
str1 = input("Enter String : ")

list1 = str1.split(",")

dict1 = {}

n = (len(list1))

i = 0

while i<n:

    count = list1.count(list1[i])

    dict1[list1[i]] = count

    i += 1


print("Input : ",str1)

print("Output : ",dict1)
```

'''

Q.9. Consider a very small dictionary that contains the translations of English words to Dutch as shown below:

english_dutch = {"last" : "laatst", "week" : "week", "the" : "de", "royal" : "koninklijk", "festival" : "feest", "hall" : "hal", "saw" : "zaag", "first" : "eerst", "performance" : "optreden", "of" : "van", "a" : "een", "new" : "nieuw", "symphony" : "symphonie", "by" : "bij", "one" : "een", "world" : "wereld", "leading" : "leidend", "modern" : "modern", "composer" : "componist", "composers" : "componisten", "two" : "twee", "shed" : "schuur", "sheds" : "schuren" }

Write a program that uses this dictionary to create a word-for-word translation of a sentence to be taken as an input from the user. A word for which you cannot find a translation, you can leave "as is." The dictionary is supposed to be used case-insensitively, but your translation may consist of all lower-case words. It is nice if you leave punctuation in the translation, but if you take it out, that is acceptable (as leaving punctuation in is quite a bit of work and does not really have anything to do with dictionaries – besides, leaving punctuation in is much easier to do once you have learned about regular expressions).

'''

```python
import re

str1 = input("Enter String : ")

str2 = ""

english_dutch = {"last" : "laatst", "week" : "week", "the" : "de", "royal" : "koninklijk",

"festival" : "feest", "hall" : "hal", "saw" : "zaag", "first" : "eerst", "performance" : "optreden",

"of" : "van", "a" : "een", "new" : "nieuw", "symphony" : "symphonie", "by" : "bij", "one" : "een",

"world" : "wereld", "leading" : "leidend", "modern" : "modern", "composer" : "componist",

"composers" : "componisten", "two" : "twee", "shed" : "schuur", "sheds" : "schuren" }

list1 = str1.lower().split(" ")

for i in list1:

    if(re.match('^[a-z]*[?,.!]$',i) is not None):

        temp = i[0:len(i)-1]

        if temp in english_dutch.keys():

            str2 += english_dutch[temp] + i[len(i)-1:len(i)] + " "

        else:

            str2 += temp + " "

    else:

        if i in english_dutch.keys():

            str2 += english_dutch[i] + " "

        else:

            str2 += i + " "

print("Input : ",str1)

print("Output : ",str2)
```

'''

Q.10. Consider the following list of movies. For each movie it also shows list of ratings. Write a Python program to convert it in such a way that it stores all this data in one dictionary, then use the dictionary to print the average rating for each movie, rounded to one decimal.

movies = ["Where Eagle's Dare", "Enter the Dragon", "Iron Fist", "Fist of Fury"]

dare_ratings = [9, 10, 9.5, 8.5, 3, 7.5, 8] for the movie "Where Eagle's Dare"

dragon_ratings = [10, 10, 0, 9, 1, 8, 7.5, 8, 6, 9] for the movie "Enter the Dragon"

fist_ratings = [7, 6, 5] for the movie "Iron Fist"

fury_ratings = [6, 5, 6, 6] for the movie "Fist of Fury"

Output:

Average ratings of the movie "Where Eagle's Dare" is 7.9

Average ratings of the movie "Enter the Dragon" is 6.9

Average ratings of the movie "Iron Fist" is 6

Average ratings of the movie "Fist of Fury" is 5.8

'''

```python
movies = ["Where Eagle's Dare", "Enter the Dragon", "Iron Fist", "Fist of Fury"]

dare_ratings = [ 9, 10, 9.5, 8.5, 3, 7.5, 8]

dragon_ratings = [ 10, 10, 0, 9, 1, 8, 7.5, 8, 6, 9 ]

fist_ratings = [ 7, 6, 5 ]

fury_ratings = [ 6, 5, 6, 6 ]

ratings = [dare_ratings,dragon_ratings,fist_ratings,fury_ratings]

dict1 = {}

for i in range(len(movies)):

    dict1[movies[i]] = ratings[i]


for i in dict1:

    sum = 0

    for j in dict1[i]:

        sum += j

    dict1[i] = round(sum/len(dict1[i]),1)


for i,j in dict1.items():

    print('Average ratings of the movie "',i,'" is ',j)
```