SESSION 1 – LAB 1

Q1.

Source code

l1 = input("Enter the first list elements:")

l2 = input("Enter the second list elements:")

list1 = l1.split()

list2 = l2.split()

list3 = []

#converting string to int

for i in range(len(list1)):

list1[i] = int(list1[i])

for i in range(len(list2)):

list2[i] = int(list2[i])

#selecting odd numbers from the first list

for i in list1:

if i%2 == 1:

list3.append(i)

#selecting even numbers from th e second list

for i in list2:

if i%2 == 0:

list3.append(i)

print("List 3 = odd elements of list1 + even elements of list 2")

print("list 3=",list3)

Sample output

Enter the first list elements:4 3 1 6 5 3 6

Enter the second list elements:3 1 10 3 5 43

List 3 = odd elements of list1 + even elements of list 2

list 3= [3, 1, 5, 3, 10]

Q2 Source Code

#code to print a pattern

num=1

for i in range(5):

for j in range(i+1):

print(num, end = " ")

num+=1

print("\n")

Sample Output

======================= RESTART: D:\180953352\Lab1\Q2.py =======================

1

2 3

4 5 6

7 8 9 10

11 12 13 14 15

Q3. Source Code

n = int(input("How many strings:"))

str = []

for i in range(n):

x = input("Enter the string :")

str.append(x)

print("The strings are:", end = " ")

print(str)

count = 0

for word in str:

if len(word)>=2:

if word[0] == word[len(word)-1]:

count += 1

if len(word) % 2 == 1:

print(word, end = ", ")

print("are the strings having odd length.\n")

print(count, " words in the entered strings have the same first and last letters with length 2 or more.")

Sample output

======================= RESTART: D:\180953352\Lab1\Q3.py =======================

How many strings:3

Enter the string :hello

Enter the string :lenovo

Enter the string :race car

The strings are: ['hello', 'lenovo', 'race car']

hello, are the strings having odd length.

1 words in the entered strings have the same first and last letters with length 2 or more.

LAB 2

Q1. Source Code

sen = input("Enter any sentence:")

d = dict()

sen = sen.split()

for word in sen:

if word not in d:

d[word] = 1

else:

d[word] += 1

count = 0

for keys in d:

count += d[keys]

print(count)

Sample Output

Enter any sentence: Hello! What are you doing?

5 words in the sentence

Q2. Source code

r1 = int(input("Enter the row of the first matrix:"))

c1 = int(input("Enter the column of the first matrix:"))

r2 = int(input("Enter the row of the second matrix:"))

c2 = int(input("Enter the column of the second matrix:"))

matrix1 = []

matrix2 = []

print("Enter the entries rowwise of matrix 1:")

# For user input

for i in range(r1): # A for loop for row entries

a =[]

for j in range(c1): # A for loop for column entries

a.append(int(input()))

matrix1.append(a)

for i in range(r1):

for j in range(c1):

print(matrix1[i][j], end = " ")

print()

print("Enter the entries rowwise of matrix 2:")

# For user input

for i in range(r2): # A for loop for row entries

a =[]

for j in range(c2): # A for loop for column entries

a.append(int(input()))

matrix2.append(a)

for i in range(r2):

for j in range(c2):

print(matrix2[i][j], end = " ")

print()

d1 = dict()

d2 = dict()

for i in range(r1):

for j in range(c2):

if matrix1[i][j] != 0:

d1[ (i,j) ] = matrix1[i][j]

for i in range(r2):

for j in range(c2):

if matrix2[i][j] != 0:

d2[ (i,j) ] = matrix2[i][j]

d3 = dict()

for i in d1.keys():

if i in d2:

d3[i] = d1[i] + d2[i]

else:

d3[i] = d1[i]

for i in d2.keys():

if i not in d2:

d3[i] = d2[i]

print("dict 1", d1)

print("dict 2",d2)

print("dict 3 = sum = ", d3)

print("The sum in matrix form is ")

for i in range(r1):

for j in range(c1):

try:

print( d3[ (i,j) ] , end = " ")

except:

print( 0, end = " ")

print()

Sample Output

======================= RESTART: D:/180953352/Lab2/Q2.py =======================

Enter the row of the first matrix:3

Enter the column of the first matrix:3

Enter the row of the second matrix:3

Enter the column of the second matrix:3

Enter the entries row-wise of matrix 1:

0

0

1

0

1

0

1

0

0

0 0 1

0 1 0

1 0 0

Enter the entries row-wise of matrix 2:

1

0

0

0

1

0

1

0

0

1 0 0

0 1 0

1 0 0

dict 1 {(0, 2): 1, (1, 1): 1, (2, 0): 1}

dict 2 {(0, 0): 1, (1, 1): 1, (2, 0): 1}

dict 3 = sum = {(0, 2): 1, (1, 1): 2, (2, 0): 2}

The sum in matrix form is

2 0 1

0 2 0

2 0 0

Q3. Source code

import random

d = dict()

d2 = dict()

n = int(input("How many elements:"))

print("Enter integers or strings")

sum = 0

l=0

for i in range(n):

x = random.randrange(0,100)

d[x] = (input("Enter the value:"))

try:

d[x] = int(d[x])

except:

d[x]

#calculating the average of the dict values

for i in d.keys():

if isinstance(d[i], int) == True:

sum = sum + d[i]

l+=1

print("The average of the dictionary values is", sum/l)

#concatenating the strings

s = ""

for i in d.keys():

if isinstance(d[i], str) == True:

s = s+d[i]

print(d, "is the dictionary")

print(s,"is the concatenated string ")

#searching for the required string

srch = input("Enter the string to be searched:")

flag = 1

for i in d.keys():

if d[i] == srch:

print("Value found with key =", i)

flag = 0

if flag == 1:

print("Required string not found in the dictionary")

# searches for strings with only special characters

flag=0

for i in d.keys():

flag=0

if isinstance(d[i],str)== True:

for letter in d[i]:

if letter.isalnum() == False:

continue

else:

flag=1

break

if flag == 0:

print(d[i], end = ", ")

print("are the strings with special characters only")

Sample Output

How many elements:5

Enter integers or strings

Enter the value:43

Enter the value:hello

Enter the value:98

Enter the value:%^$

Enter the value:34er

The average of the dictionary values is 70.5

{49: 43, 82: 'hello', 19: 98, 28: '%^$', 0: '34er'} is the dictionary

hello%^$34er is the concatenated string

Enter the string to be searched:56

Required string not found in the dictionary

%^$, are the strings with special characters only