1. What is the output of the following code?

nums = set([1,1,2,3,3,3,4,4])

print(len(nums))

Ans : 4

1. What will be the output? d = {"john":40, "peter":45} print(list(d.keys()))

Ans : ['john', 'peter']

1. A website requires a user to input username and password to register. Write a program to check the validity of password given by user. Following are the criteria for checking password:
2. At least 1 letter between [a-z]
3. At least 1 number between [0-9]
4. At least 1 letter between [A-Z]
5. At least 1 character from [$#@]
6. Minimum length of transaction password: 6
7. Maximum length of transaction password: 12

Ans :

import re

def check\_password\_validity(password):

if (6 <= len(password) <= 12 and

re.search("[a-z]", password) and

re.search("[0-9]", password) and

re.search("[A-Z]", password) and

re.search("[$#@]", password)):

return True

else:

return False

password = "Anu@er"

#password = input("Enter your password: ")

if check\_password\_validity(password):

print("Password is valid.")

else:

print("Password is invalid.")

1. Write a for loop that prints all elements of a list and their position in the list.

a = [4,7,3,2,5,9]

Ans :

a = [4,7,3,2,5,9]

for index, value in enumerate(a):

print(f"Position: {index}, Value: {value}")

1. Please write a program which accepts a string from console and print the characters that have even indexes.

Example: If the following string is given as input to the program: H1e2l3l4o5w6o7r8l9d

Then, the output of the program should be: Helloworld

Ans :

inputstring = input("Enter a string: ")

#inputstring = 'H1e2l3l4o5w6o7r8l9d '

for i in range(len(inputstring)):

if i % 2 == 0:

print(inputstring[i], end='')

1. Please write a program which accepts a string from console and print it in reverse order.

Example: If the following string is given as input to the program: **rise to vote sir**

Then, the output of the program should be: **ris etov ot esir**

Ans :

#inputstring = input("Enter a string: ")

inputstring = 'rise to vote sir '

print("Reversed string:", inputstring[::-1])

1. Please write a program which count and print the numbers of each character in a string input by console.

Example: If the following string is given as input to the program: **abcdefgabc**

Then, the output of the program should be:

a,2

c,2

b,2

e,1

d,1

g,1

f,1

Ans :

#inputstring = input("Enter a string: ")

inputstring = 'Hello'

charcount = {}

for char in inputstring:

if char in charcount:

charcount[char] += 1

else:

charcount[char] = 1

print(charcount.items())

for char, count in charcount.items():

print(f"Character: {char}, Count: {count}")

1. With two given lists [1,3,6,78,35,55] and [12,24,35,24,88,120,155], write a program to make a list whose elements are intersection of the above given lists.

Ans :

list1 = [1, 3, 6, 78, 35, 55]

list2 = [12, 24, 35, 24, 88, 120, 155]

intersection = list(set(list1) & set(list2))

print(f"The intersection of two list is {intersection}")

1. With a given list [12,24,35,24,88,120,155,88,120,155], write a program to print this list after removing all duplicate values with original order reserved.

Ans :

list = [12,24,35,24,88,120,155,88,120,155]

print(list)

result = []

occur = set()

for val in list:

if val not in occur:

result.append(val)

occur.add(val)

print(f"list after removing duplicate {result}")

print(f"list in reverse order {result[::-1]}")

1. By using list comprehension, please write a program to print the list after removing the value 24 in [12,24,35,24,88,120,155].

Ans :

list = [12,24,35,24,88,120,155]

result = [x for x in list if x != 24 ]

print(f"List after removing 24 : {result}")

1. By using list comprehension, please write a program to print the list after removing the 0th,4th,5th numbers in [12,24,35,70,88,120,155].

Ans :

list = [12,24,35,70,88,120,155]

result = [x for i , x in enumerate(list) if x not in [0 , 4, 5]]

print(f"List after removing 0th, 4th, and 5th elements : {result}")

1. . By using list comprehension, please write a program to print the list after removing delete numbers which are divisible by 5 and 7 in [12,24,35,70,88,120,155].

Ans :

list = [12,24,35,70,88,120,155]

result = [x for x in list if not (x % 5 == 0 and x % 7 ==0)]

print(f"List after removing numbers divisible by 5 and 7:{result}")

1. Please write a program to randomly generate a list with 5 numbers, which are divisible by 5 and 7 , between 1 and 1000 inclusive.

Ans :

import random

divisibleby = [x for x in range(1, 1000) if x % 5 == 0 and x % 7 == 0 ]

#print(divisibleby)

#result = [ x for i , x in enumerate(divisibleby) if i < 5 ]

result = random.sample(divisibleby, 5)

print(f"Randomly generated numbers divisible by 5 and 7 {result}")

1. Write a program to compute 1/2+2/3+3/4+...+n/n+1 with a given n input by console (n>0).

Example: If the following n is given as input to the program: 5

Then, the output of the program should be: 3.55

Ans :

#n = (input("Enter a value for n "))

n = 5

sum = 0

for i in range( 1, n+1):

sum += (i / (i + 1))

# print("sum", sum , "i" , i)

print(f"The result of the series is {sum:.2f}")

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