1. What is the output of the following code?

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

print(len(nums))

Nikhil : 4

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

Nikhil : ['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

Nikhil :

import re

def checkPassword(p):

if len(p)>=6 and len(p)<=12:

if re.search("[a-z]",p) and re.search("[A-Z]",p) and re.search("[0-9]",p) and re.search("[$#@]",p):

print("Valid password")

else:

print("Invalid")

else:

print("Password does not meet the criteria.")

p = input("Enter password:")

checkPassword(p)

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]

Nikhil :

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

l = len(a)

c =0

for i in a:

print(f"Elemen {i} & position of element is {c}")

c=c+1

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

Nikhil :

s = input("Enter string :")

print(s[::2])

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**

Nikhil: s = input("Enter string :")

print(s[::-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

Nikhil :

from collections import Counter

s = input("Enter string :")

counter = Counter(s)

for s,c in counter.items():

print(f"{s},{c}")

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.

Nikhil:

l1= [1,3,6,78,35,55]

l2= [12,24,35,24,88,120,155]

interection\_set = set(l1) & set(l2)

inter\_list = list(interection\_set)

print(inter\_list)

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.

Nikhil:

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

s = set(l)

l1= list(s)

print(l1)

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].

Nikhil:

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

l = [x for x in l if x!=24]

print(l)

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]

Nikhil

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

r = [l[i] for i in range(len(l)) if i not in [0,4,5]]

print(r)

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].

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

r = [x for x in l if x%5!=0 or x%7!=0]

print(r)

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.

Nikhil:

import random

divisible = [x for x in range(1,1001) if x%5==0 or x%7==0]

print(divisible)

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

Nikhil:

import random

num = int(input("Enter number:"))

c = 0

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

c = c+ i/(i+1)

print("output is :",c)