**Q .In a given list of elements, all elements are equal except the one.Write a code to find the odd man out (Stray number)**

list1 = [1,1,1,1,2,1,1]

list2 = [2,1,1,1,1,1,1]

list3 = [1,1,1,1,1,1,2]

listexamined = list2.copy()

listexamined.sort()

for x in range(1,len(listexamined)):

if(listexamined[x]!=listexamined[x-1]):

break

print(listexamined[x])

**Output:**

**2**

**Q. In a given list of elements, find the elements which is close to its mean**

mylist = [80,20,100,200,0,23,11,44,22,174,249,238]

sumelements = 0

for x in mylist:

sumelements += x

avg = sumelements/len(mylist)

print(avg)

smallest\_deviance = abs(avg - mylist[0])

closest\_element = mylist[0]

for x in mylist:

deviance = abs(avg - x)

if (deviance < smallest\_deviance):

smallest\_deviance = deviance

closest\_element = x

print(closest\_element)

**Output:**

**96.75**

**100**

**Q. Find the average speed of vehicle, given the distance travelled for fixed time intervals, e.g. [ 0, 0.1, 0.25, 0.45, 0.55, 0.7, 0.9, 1.0 ]**

# assuming time measured in seconds and each sample taken at 1 second.

# assuming distances given are in meter and that travelled between measurements

# assuming result needed in m/s

distances = [0,0.1,0.25,0.45,0.55,0.7,0.9,1.0]

timeBetweenMeasurements = 1

sumdistances = 0

for x in distances:

sumdistances += x

avgspeed = sumdistances / len(distances)\*timeBetweenMeasurements

print(avgspeed)

**Output:**

**0.49374999999999997**

**Q. Find the no.of people in a bus, given the data of people onboarding & alighting at each station**

listalight = [0,3,1,2,4,0]

listonboard= [3,1,2,4,2,1]

listdelta = []

for i in range(0,len(listonboard)):

listdelta.append(listonboard[i]-listalight[i])

print(sum(listdelta))

**Output:**

**3**

**Q. Find the missing number, given the original list and modified one**

originalList= [1,2,3,4,5,6,7,22,33,11,44]

modifiedList= [1,2,4,5,6,7,33,11,44]

for x in originalList:

if x not in modifiedList:

print(x)

**Output:**

**3**

**22**

**Q. Find the difference between two lowest numbers in the list**

mylist = [120,54,87,41,57,96,85,10,58,32]

mylist.sort()

print(mylist[1]-mylist[0])

Output:

22

Q. In a given list, count no.of elements smaller than their mean

mylist = [120,54,87,41,57,96,85,10,58,32]

sumelements = sum(mylist)

avg = sumelements/len(mylist)

mylist.sort()

count = 0

for x in mylist:

if x < avg:

count+=1

print(count)

**Output:**

**6**

**Q, Correct the malformed time string , for e.g "5:70:65" to "6:11:05"**

malformed = "5:70:65"

listdigits = malformed.split(":")

listdigits = [int(x) for x in listdigits]

for x in range(2,0,-1):

listdigits[x-1]+= listdigits[x]//60

listdigits[x] = str(listdigits[x]%60)

if len(listdigits[x]) == 1:

listdigits[x] = "0" + listdigits[x]

listdigits[0] = str(listdigits[0])

corrected=":"

print(corrected.join(listdigits))

**Output:**

**6:11:05**

**Q. Correct the malformed date string , for e.g. "45/8/2018" to "14/9/2018"**

maformeddate = "45/8/2018"

correcteddate="/"

listnumbers = maformeddate.split("/")

list31days=[1,3,5,7,8,10,12]

listnumbers = [int(x) for x in listnumbers]

if listnumbers[1] in list31days:

listnumbers[1]+=listnumbers[0]//31

listnumbers[0] = listnumbers[0]%31

else:

listnumbers[1]+=listnumbers[0]//30

listnumbers[0] = listnumbers[0]%30

listnumbers[2]+=listnumbers[1]//12

listnumbers[1]=listnumbers[1]%12

listnumbers = [str(x) for x in listnumbers]

print(correcteddate.join(listnumbers))

**Output:**

**14/9/2018**

**Q. Convert ip address from "a.b.c.d" format into integer and vice versa**

ipstring = "192.168.1.100"

iplist = ipstring.split(".")

iplist = [int(x) for x in iplist]

iplist = [x+1 for x in iplist]

ipstring2="."

iplist = [str(x) for x in iplist]

print(ipstring2.join(iplist))

**Output:**

**193.169.2.101**

**Q. Check whether given string is isogram or not**

stringelement= "Orange"

listelements = []

isogram=True

for x in stringelement:

if x in listelements:

print(" not isogram")

isogram = False

break

if x not in listelements:

listelements.append(x)

if isogram:

print("isogram")

else :

print("not isogram")

**Output:**

**isogram**

**Q. Given a string, find the mexican wave**

given\_string="abcdefghijk"

for i in range(len(given\_string)):

print(f"{given\_string[:i]}{given\_string[i].upper()}{given\_string[i+1:]}")

**Output:**

**Abcdefghijk**

**aBcdefghijk**

**abCdefghijk**

**abcDefghijk**

**abcdEfghijk**

**abcdeFghijk**

**abcdefGhijk**

**abcdefgHijk**

**abcdefghIjk**

**abcdefghiJk**

**abcdefghijK**

**Q. Given a number, find the largest number by deleting single digit (order of digits will remain same)**

number = "183749"

digits =[]

for i in range(len(number)):

digits.append(number[i])

largest = 0

digits\_oneremoved = digits.copy()

for i in range(len(digits)):

digits\_oneremoved.pop(i)

mystring = ""

number\_oneremoved= int(mystring.join(digits\_oneremoved))

if(number\_oneremoved > largest):

largest = number\_oneremoved

digits\_oneremoved= digits.copy()

print(largest)

**Output:**

**83749**

**Q. Given a number, find the largest number by shuffling the digits**

givennumber = 76482

givennumber = str(givennumber)

givennumber = [int(x) for x in givennumber]

givennumber.sort(reverse=True)

givennumber = [str(x) for x in givennumber]

largestnumber ="".join((givennumber))

largestnumber= int(largestnumber)

print(largestnumber)

**Output:**

**87642**

**Q. Compute the word frequency in given message**

mymessage = "Car Bike Bike Truck Trolley Truck Bike Bike Car"

msglist = mymessage.split()

msgWords = []

for x in msglist:

if x not in msgWords:

msgWords.append(x)

for x in msgWords:

print(f"{x} is repeated {msglist.count(x)} times" )

**Output:**

**Car is repeated 2 times**

**Bike is repeated 4 times**

**Truck is repeated 2 times**

**Trolley is repeated 1 times**

**Q. RGB to Hex conversion and vice versa, e.g. (255,0,255) into 0xFF00FF**

RGB = [255,5,255]

Hex = "0x"

for x in RGB:

hexval = hex(x)

if(len(hexval[2:]) == 1):

Hex+="0"

Hex+=hexval[2:].upper()

print(Hex)

**Output:**

**0xFF05FF**

**Q. Generate accumulated strings,e.g. abcd ==> A-Bb-Ccc-Dddd**

givenString = "abcde"

listaccumulated = []

for x in range(0,len(givenString)):

listaccumulated.append(givenString[x]\*(x+1))

listaccumulated[x] = listaccumulated[x].capitalize()

print("-".join(listaccumulated))

Output:

A-Bb-Ccc-Dddd-Eeeee