**SHEET 1 Questions and Answer**

Q no 1

In a given list of elements, all elements are equal except the one. Write the code for odd man out.

x = [1, 1, 1, 2, 1, 1]  
y = x[0]  
for i in range(len(x)):  
if y != x[i]:  
print(x[i])

Q no 2

In a given list find the elements which is close to its mean.

x = [2, 4, 6, 9, 100, 45, 899, 56, 3, 6]  
  
sum1 = 0  
for i in range(len(x)):  
 sum1 = sum1 + x[i]  
  
mean = sum1/len(x)  
print(mean)  
y = abs(mean - x[0])  
for i in range(len(x)):  
if abs(mean - x[i]) < y:  
 y = abs(mean - x[i])  
  
print(y)

Q no 3

Find the average speed of the vehicle, given the distance travelled for the fixed time intervals

dist = [2, 4, 6, 9, 100, 45, 899, 56, 3, 6]  
length = len(dist)  
time = 5 # time in seconds  
sum1 = 0  
for i in range(len(dist)):  
 sum1 = sum1 + dist[i]  
avg\_speed = sum1/(len(dist) \* time)  
print(avg\_speed)

Q no 4

Find the no of people in the bus, given the data of people onboarding and alighting at each station

no\_of\_people\_on\_boarding = [2, 4, 6, 7, 9]  
station\_name = ['A', 'B', 'C', 'D', 'E']  
y = 0  
sum1 = 0  
def no\_of\_people\_in\_bus( x ):  
for i in range(len(station\_name)):  
if x == station\_name[i]:  
return i  
  
k = no\_of\_people\_in\_bus('B')  
for i in range(k+1):  
 sum1 = sum1 + no\_of\_people\_on\_boarding[i]  
  
print(sum1)

Q no 5

Find the missing number given the original list and the modified one.

def Diff(orignal\_list, modified\_list):  
return list(set(orignal\_list) - set(modified\_list)) + list(set(modified\_list) - set(orignal\_list))  
  
orignal\_list = [1, 2, 3, 4, 5]  
modified\_list = [1, 2, 3, 5]  
print(Diff(orignal\_list, modified\_list))

Q no 6

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

x = [2, 4, 6, 1, 8, 9]  
x.sort()  
print(x[1]-x[0])

Q no 7

In a given list count the number of elements smaller that mean.

x = [2, 4, 6, 9, 1, 4, 8, 5, 3, 6]  
  
sum1, count = 0, 0  
for i in range(len(x)):  
 sum1 = sum1 + x[i]  
  
mean = sum1/len(x)  
print(mean)  
for i in range(len(x)):  
if(mean > x[i]):  
 count = count + 1  
print(count)

**SHEET 2 Questions and Answer**

Q-3) Convert ip address from “a.b.c.d” format into integer and vice versa

# importing the module  
  
import ipaddress  
  
# converting IPv4 address to int  
  
addr1 = ipaddress.ip\_address('191.255.254.40')  
  
addr2 = ipaddress.ip\_address('0.0.0.123')  
  
print(int(addr1))  
  
print(int(addr2))  
  
# converting IPv6 address to int  
  
addr3 = ipaddress.ip\_address('2001:db7:dc75:365:220a:7c84:d796:6401')  
  
print(int(addr3))  
  
print("\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*")  
# importing the module  
  
import ipaddress  
  
# converting int to IPv4 address  
  
print(ipaddress.ip\_address(3221225000))  
  
print(ipaddress.ip\_address(123))  
  
# converting int to IPv6 address  
  
print(ipaddress.ip\_address(42540766400282592856903984001653826561))

Qno 4

Check the given string is isogram or not.

def is\_isogram(word):  
clean\_word = word.lower()  
  
letter\_list = []  
  
for letter in clean\_word:  
  
if letter.isalpha():  
if letter in letter\_list:  
return False  
letter\_list.append(letter)  
  
return True  
  
  
if \_\_name\_\_ == '\_\_main\_\_':  
print(is\_isogram("Tarang"))

Qno 5

Given the string, find the Mexican value.

s='hello'  
new=[]  
for i, val in enumerate(s[:]):  
 up=s[i].upper()  
 c=s[:i] + up + s[i+1:]  
 new.append(c)  
print(new)

Qno 6

Given a number find the largest number by deleting the single digit(order of digit will remain same)

test\_str = '8669733688942'  
an\_integer,x = 0 , 0  
  
K = 1  
  
res = []  
for idx in range(0, len(test\_str), K):  
# converting to int, after slicing  
res.append(int(test\_str[idx: idx + K]))  
  
for i in range(len(res)):  
 y = res.copy()  
 y.pop(i)  
  
 strings = [str(integer) for integer in y]  
 a\_string = "".join(strings)  
 an\_integer = int(a\_string)  
if an\_integer>x:  
 x = an\_integer  
print(x)

Qno 7

Given a number find the largest number by shuffling the digits

test\_str = '8669733688942'  
  
K = 1  
  
res = []  
for idx in range(0, len(test\_str), K):  
# converting to int, after slicing  
res.append(int(test\_str[idx: idx + K]))  
  
res.sort(reverse=True)  
strings = [str(integer) for integer in res]  
a\_string = "".join(strings)  
inte = int(a\_string)  
print(inte)

Qno 8

Compute the word frequency in given message

def freq(str):  
 str = str.split()  
 str2 = []  
  
for i in str:  
if i not in str2:  
 str2.append(i)  
  
for i in range(0, len(str2)):  
print('Frequency of', str2[i], 'is :', str.count(str2[i]))  
  
  
def main():  
 str = 'tarang aman aman tarang rahul ganesh swapnil aditya hussain aditya shubham isha isha'  
freq(str)  
  
if \_\_name\_\_ == "\_\_main\_\_":  
 main()

Qno 9

RGB to HEX conversion and vice versa

def rgb\_to\_hex(rgb):  
return '%02x%02x%02x' % rgb  
  
def hex\_to\_rgb(value):  
 value = value.lstrip('#')  
 lv = len(value)  
return tuple(int(value[i:i+lv//3], 16) for i in range(0, lv, lv//3))  
  
print(hex\_to\_rgb("FF65BA"))  
print(rgb\_to\_hex((120, 230, 195)))