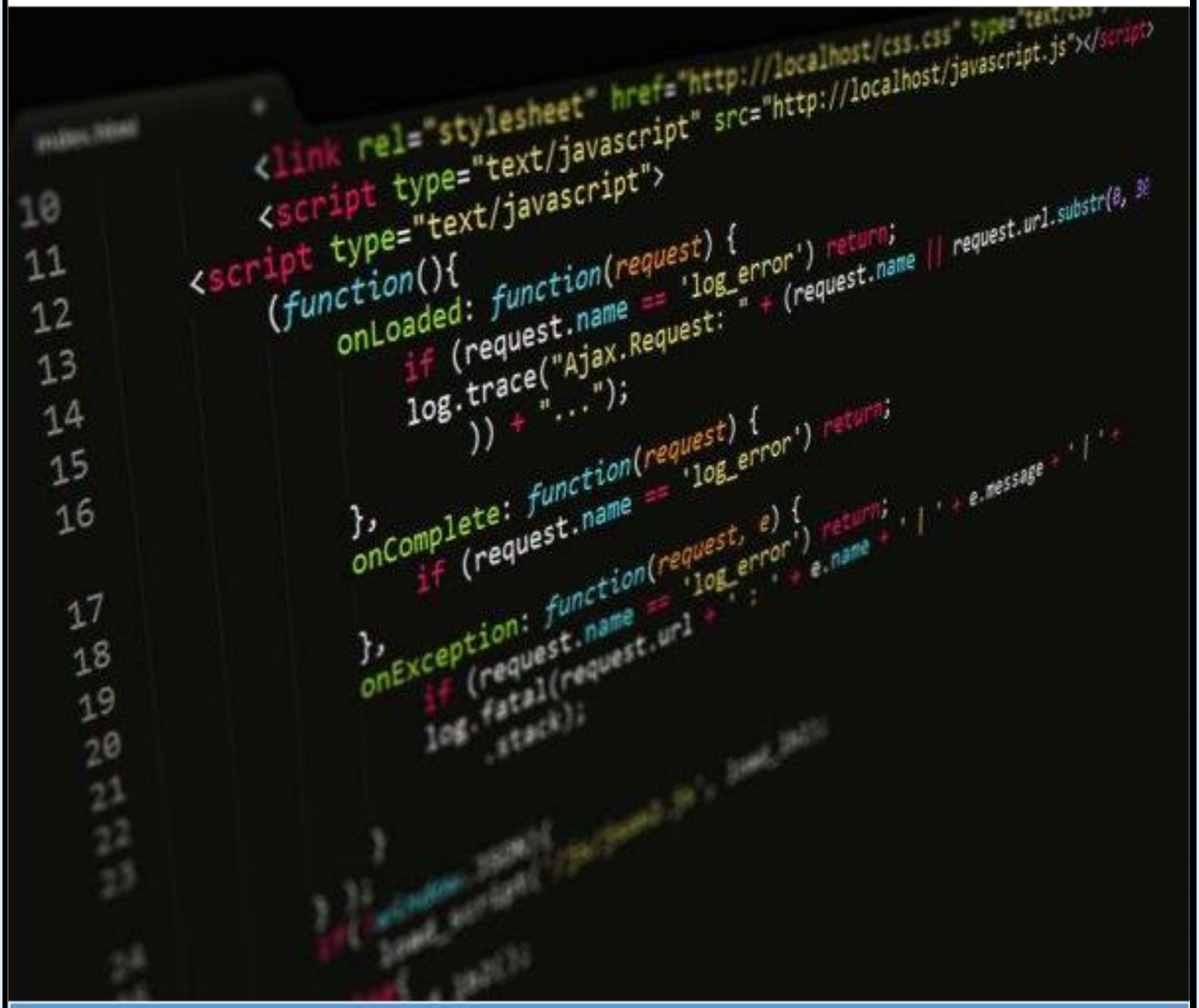

# COMPUTER SCIENCE PRACTICAL FILE TERM 2

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**Class : 11-L** **Roll Number : 1** Session : 2021-22

# PRACTICAL FILE INDEX

# PROGRAM 1

## Program Question:-

Write a python program that inputs a list of numbers and shifts all the zero's to the right and all non-zero numbers to the left of the list.
Example:
Enter a list
[6,8 ,-5,0,4,0,-2]
The result is
[6,8,-5,4,-2,0,0]

## Program Source Code:-

program1ZeroShift.py

```
#program1 : ZeroShift
L = eval (input ("Enter a list"))
CNT = L.count (0)
ZeroL = [0]
for i in L :
    if 0 in L :
        L.remove(0)
ZeroL = ZeroL*CNT
L.extend(ZeroL)
print (L)
```

## Program Output Code:-

```
Enter a list[6,8,-5,0,4,0,-2]
[6, 8, -5, 4, -2, 0, 0]

Process returned 0 (0x0)        execution time : 5.599 s
Press any key to continue . . .
```

# PROGRAM 2

## Program Question:-

Write a python program to : -
i. Find the second largest number of a list.
ii. Display the duplicate numbers from the list.
Example:
Enter a list
[9,5,8,12,7,8]
The second largest number is 9
The duplicate number is 8

## Program Source Code:-

```
#program2 : SecondLargestandDuplicates
L = eval (input ("Enter a list"))
dup = []
for i in L :
    if L.count(i)>1:
        dup.append(i)
m = max(L)
L.sort()
for i in L:
    if m in L :
        L.remove(m)
print ("Second Largest Number is " , L[-1])
dupl = []
print ("Duplicate Elements are ")
for i in dup :
    if i not in dupl :
        dupl.append(i)
        print (i)
```

# Program Output Code:-

```
Enter a list[9,8,3,3,6,2,6,9,1,5]
Second Largest Number is  8
Duplicate Elements are
9
3
6

Process returned 0 (0x0)        execution time : 31.005 s
Press any key to continue . . .
```

# PROGRAM 3

## Program Question:-

Write a Program to input two lists and perform the following operations:
1. Display the list having maximum number of elements
2. Display the union of two lists
Example:
Enter first list
[9,5,6,9,2]
Enter second list
[8,5,2,9]
The list having max no. of elements is [9,5,6,9,2]
The union is
[2,5,6,8,9]

## Program Source Code:-

```
#program3 : UnionOfLists
L1 = eval (input ("Enter the first list "))
L2 = eval (input ("Enter the second list "))
if len(L1) > len (L2):
    print ("The list having max no. of elements is ", L1)
elif len(L1) < len (L2):
    print ("The list having max no. of elements is ", L2)
else :
    print ("Both lists have equal number of elements")
print ("The Union is ")
L1.extend(L2)
print (L1)
```

# Program Output Code:-

```
Enter the first list [0,2,4,5]
Enter the second list [1,3,6]
The list having max no. of elements is  [0, 2, 4, 5]
The Union is
[0, 2, 4, 5, 1, 3, 6]

Process returned 0 (0x0)        execution time : 15.585 s
Press any key to continue . . .
```

```
Enter the first list [0,1,2,3]
Enter the second list [4,5,6,7]
Both lists have equal number of elements
The Union is
[0, 1, 2, 3, 4, 5, 6, 7]

Process returned 0 (0x0)        execution time : 18.331 s
Press any key to continue . . .
```

# PROGRAM 4

## Program Question:-

Find the sum of each row of matrix of size m x n. For example for the following matrix output will be like this :

```
2 11  7  12
5  2  9  15
8  3  10 42
```

Sum of row 1 = 32
Sum of row 2 = 31
Sum of row 3 = 63

## Program Source Code:-

```
n = int (input ("Enter no of rows "))
m = int (input ("Enter no of columns "))
l1 = []
l2 = []
for i in range (n):
    s = 0
    l1.append([])
    for j in range (m) :
        x = int (input ("Enter the matrix element " ))
        l1[i].append(x)
        s = s + x
    l2.append(s)
print (l1)
for i in range (n) :
    print ("Sum of row  ", (i+1), " is " + str(l2[i]))
```

# Program Output Code:-

```
Enter no of rows 3
Enter no of columns 4
Enter the matrix element 2
Enter the matrix element 11
Enter the matrix element 7
Enter the matrix element 12
Enter the matrix element 5
Enter the matrix element 2
Enter the matrix element 9
Enter the matrix element 15
Enter the matrix element 8
Enter the matrix element 3
Enter the matrix element 10
Enter the matrix element 42
[[2, 11, 7, 12], [5, 2, 9, 15], [8, 3, 10, 42]]
Sum of row   1  is 32
Sum of row   2  is 31
Sum of row   3  is 63
```

# PROGRAM 5

## Program Question:-

WAP to take input of a tuple and perform the following operations:
1. Display the second largest number from the tuple
2. Display duplicate numbers from the tuple
3. Display the highest frequency number

## Program Source Code:-

```
tup = eval (input ("Enter a tuple "))
L = list(tup)
m = max (L)
L.sort()
for i in L:
    if m in L :
        L.remove(m)
print ("The second largest element is " , L[-1])
L2 = list (tup)
flag = []
print ("The duplicate elements are : ")
for i in L2 :
    if L2.count(i)>1 and i not in flag :
        flag.append(i)
        print (i)
max = 0
res = L2[0]
for i in L2:
    freq = L2.count(i)
    if freq > max:
        max = freq
        res = i
print ("Element with maximum frequency is " , res)
```

# Program Output Code:-

```
Enter a tuple (4,1,6,3,2,6,6,3)
The second largest element is  4
The duplicate elements are :
6
3
Element with maximum frequency is  6

Process returned 0 (0x0)        execution time : 2.643 s
Press any key to continue . . .
```

# PROGRAM 6

## Program Question:-

Write a Python program to convert a given tuple of positive integers into an integer.
Original tuple:
(1, 2, 3)
Convert the said tuple of positive integers into an integer:
123
Original tuple:
(10, 20, 40, 5, 70)
Convert the said tuple of positive integers into an integer:
102040570

## Program Source Code:-

```
tup = eval (input("Enter a tuple "))
st = ""
for i in tup :
    st = st + str(i)
print ("The required integer is : ", st)

```

## Program Output Code:-

```
Enter a tuple (10, 20, 40, 5, 70)
The required integer is :  102040570

Process returned 0 (0x0)        execution time : 1.821 s
Press any key to continue . . .
```

# PROGRAM 7

## Program Question:-

WAP to input a list of numbers and print those numbers which are coming consecutively 3 times.
Example:
Input a list
[2,3,4,5,5,5,6,7]
The number coming consecutively 3 times is 5

## Program Source Code:-

```
L = eval(input("Enter a list of numbers - "))
print("The number coming consecutively 3 times is/are ")
for i in range (len(L)-2):
    if L[i]==L[i+1]==L[i+2] :
        print (L[i],end=" ")

```

## Program Output Code:-

```
Enter a list of numbers - [2,3,4,5,5,5,6,7,7,7]
The number coming consecutively 3 times is/are
5 7
Process returned 0 (0x0)        execution time : 11.859 s
Press any key to continue . . .
```

# PROGRAM 8

## Program Question:-

Given a string and a number N, we need to mirror the characters from the N-th position up to the length of the string in alphabetical order. In mirror operation, we change ‘a’ to ‘z’, ‘b’ to ‘y’, and so on. Examples:
Input : N = 3
paradox
Output : paizwlc
We mirror characters from position 3 to end.
Input : N = 6
pneumonia
Output : pneumlmrz.

## Program Source Code:-

```
st=input("Enter a string  ")
n=int(input("Enter the position for mirror operation "))
Alpha = "abcdefghijklmnopqrstuvwxyz"
revAlpha = "zyxwvutsrqponmlkjihgfedcba"
l = len(st)
ans = ""
for i in range(0, n-1):
    ans = ans + st[i]
for i in range(n-1, l):
    ans = (ans + revAlpha[Alpha.index(st[i])])
print(ans)
```

## Program Output Code:-

```
Enter a string  Pneumonia
Enter the position for mirror operation 6
Pneumlmrz

Process returned 0 (0x0)        execution time : 6.955 s
Press any key to continue . . .
```

# PROGRAM 9

## Program Question:-

WAP to input phone id and username in the form of a dictionary and display those ids which start with 91.
Example:
Suppose the dictionary contains the data as follows
{9123:"Raj",9234:"Rahul",9189:"Preeti"}
So the ouput would be
[9123,9189]

## Program Source Code:-

```
d = eval(input("Enter Phone ID and Username in the form of a dictionary "))
L = []
for i in d :
    s=str(i)
    if s.startswith("91") :
        L.append(i)
print ("Phone IDs which start with 91 are ")
print (L)
```

## Program Output Code:-

```
Enter Phone ID and Username in the form of a dictionary {9123:"Raj",9234:"Rahul",9189:"Preeti"}
Phone IDs which start with 91 are
[9123, 9189]

Process returned 0 (0x0)        execution time : 1.809 s
Press any key to continue . . .
```

# PROGRAM 10

## Program Question:-

Write a Python program to create a dictionary from a string.
Note: Track the count of the letters from the string.
Sample string : 'resource'
Expected output: {'r': 2, 'e': 2, 's': 1, 'o': 1, 'u': 1, 'c': 1}

## Program Source Code:-

```
st = input ("Enter any string ")
flag = []
d = {}
for i in st :
    if i not in flag:
        flag.append(i)
        d[i] = st.count(i)
print (d)
```

## Program Output Code:-

```
Enter any string resource
{'r': 2, 'e': 2, 's': 1, 'o': 1, 'u': 1, 'c': 1}

Process returned 0 (0x0)        execution time : 2.197 s
Press any key to continue . . .
```