**KENDRIYA VIDYALAYA NO.1 ANGUL**

2021-2022

**COMPUTER SCIENCE PRACTICAL RECORD (TERM1)**

**CLASS : XII**

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I, Soumyaranjan SAhoo of class XII –

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NO.1 ANGUL .

CERTIFICATE

This is to certify that, Practical on Computer Science

(Term-1) is successfully completed by

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XII CS – Practical Assignments for TERM 1

**Assignment 1**: Write a python program to search first occurrence of an element in a list by **using Linear search** and display frequency of each element present in list [List and search element should be entered by user]

**Ans:**

#Taking list as input

List=[]#var for entered list

count=0#no of occurence of element

n=int(input("How many items do you want to enter in list:"))

for i in range(0,n):

a=int(input("Enter the item:"))

List.append(a)

print("This is the entered list :",List)

#storing frequency and elements in a dictionary

Dict={} #for storing elements along with frequency

for i in List:

count=0

for j in List:

if i==j:

count+=1

Dict[i]=count

for k in Dict: #decoding the dictionary

print("The frequency of ",k," is ",Dict[k]) #printing elements with frequency

#linearsearching for finding position and index of the entered value

element=int(input("Enter item to be search:"))

flag=0 # no of occurence of element to be search

for i in range(0, n):

if (element>=0)and(element<=n): #checking for valid input

if (element==List[i]):

flag=1

break

if (flag==1):

print("Element found at index",i,"and position",i+1)

else:

print("Element not found")

**Output is:**

How many items do you want to enter in list:10

Enter the item:5

Enter the item:6

Enter the item:2

Enter the item:1

Enter the item:4

Enter the item:7

Enter the item:5

Enter the item:6

Enter the item:3

Enter the item:5

This is the entered list : [5, 6, 2, 1, 4, 7, 5, 6, 3, 5]

The frequency of 5 is 3

The frequency of 6 is 2

The frequency of 2 is 1

The frequency of 1 is 1

The frequency of 4 is 1

The frequency of 7 is 1

The frequency of 3 is 1

Enter item to be search:5

Element found at index 0 and position 1

**Assignment 2:**Write a python program using function to pass list to a function and double the odd values and half even values of a list and display list element after changing.

**Ans:**

#defining function

def splitevenodd(List):

   evenlist = []

   oddlist = []

   for i in List:

      if (i % 2 == 0):

         evenlist.append(i//2)  #storing half value in evenlist

      else:

         oddlist.append(i\*i)  #storing double value in oddlist

   print("Even lists:", evenlist)

   print("Odd lists:", oddlist)

#taking input list

List=list()

n=int(input("Enter the size of the  List ::"))

for i in range(int(n)):

   k=int(input("Enter the Elements of  List ::"))

   List.append(k)

splitevenodd(List) #calling the function

**Output is:**

Enter the size of the List ::10

Enter the Elements of List ::5

Enter the Elements of List ::6

Enter the Elements of List ::4

Enter the Elements of List ::8

Enter the Elements of List ::6

Enter the Elements of List ::1

Enter the Elements of List ::3

Enter the Elements of List ::9

Enter the Elements of List ::6

Enter the Elements of List ::7

Even lists: [3, 2, 4, 3, 3]

Odd lists: [25, 1, 9, 81, 49]

**Assignment 3:**Write a Python program input n numbers in tuple and count how many even and odd numbers are entered.

**Ans:**

#defining the function

def eveoddcount(tup):

evecount=0

oddcount=0

for i in range(0,len(tup)): #loop for counting no of even and odd numbers

if i%2==0 :

evecount+=1

else :

oddcount+=1

print(f"The number of even numbers are :{evecount}\nThe number of odd numbers are :{oddcount}")

tup=[] #temporarily defining list to take input

n=int(input("Enter the number of elements you want to enter::"))

for i in range(0,n):

a=int(input("Enter the element::"))

tup.append(a)

tup=tuple(tup) #typecasting list into tuple

print("You entered ",tup)

eveoddcount(tup) #calling the function

**Output is:**

Enter the number of elements you want to enter::10

Enter the element::5

Enter the element::6

Enter the element::9

Enter the element::8

Enter the element::2

Enter the element::3

Enter the element::1

Enter the element::4

Enter the element::7

Enter the element::5

You entered (5, 6, 9, 8, 2, 3, 1, 4, 7, 5)

The number of even numbers are :5

The number of odd numbers are :5

**Assignment 4:**Write a menu driven program in python to delete name of a student from dictionary and to search phone no of a student by student name. Create menu as below:

MENU

1. Delete from Dictionary

2. Search Phone number using name from Dictionary

3. Exit

**Ans:**

phonebook=dict() #defining a basic dictionary for storage of values and names

while True :

    print("\*\*\*\*\*\*MENU\*\*\*\*\*\*")

    print("1:Add to Dictionary")

    print("2:Delete from Dictionary")

    print("3:Search Phone number using name from Dictionary ")

    print("4:Exit ")

    query=int(input("Enter your choice:"))

    if query==1:

        n=int(input("Enter the number of contacts you want to enter:"))

        for i in range(0,n):

            name=input("Enter the name :")

            name.upper()

            num=input("Enter the number :")

            phonebook[name]=num # adding names and contact in the dictionary

    elif query==2:

        n=int(input("Enter the name you want to delete:"))

        n.upper()

        del phonebook[n] #deleting the names from the dictionary

    elif query==3:

        n=int(input("Enter the name you want to search:"))

        n.upper()

        print("The phone number is :",phonebook[n]) #searching for the input name

    elif query==4:

        break

    else :

        print("Enter a valid input") # raising error for invalid input

**Output is:**

\*\*\*\*\*\*MENU\*\*\*\*\*\*

1:Add to Dictionary

2:Delete from Dictionary

3:Search Phone number using name from Dictionary

4:Exit

Enter your choice:1

Enter the number of contacts you want to enter:3

Enter the name :Rohan Das

Enter the number :9568475684

Enter the name :Ram Charan

Enter the number :8652317459

Enter the name :Ankesh Bundela

Enter the number :7563214856

\*\*\*\*\*\*MENU\*\*\*\*\*\*

1:Add to Dictionary

2:Delete from Dictionary

3:Search Phone number using name from Dictionary

4:Exit

Enter your choice:2

Enter the name you want to delete:Ram Charan

\*\*\*\*\*\*MENU\*\*\*\*\*\*

1:Add to Dictionary

2:Delete from Dictionary

3:Search Phone number using name from Dictionary

4:Exit

Enter your choice:3

Enter the name you want to search:Ankesh Bundela

The phone number is : 7563214856

\*\*\*\*\*\*MENU\*\*\*\*\*\*

1:Add to Dictionary

2:Delete from Dictionary

3:Search Phone number using name from Dictionary

4:Exit

Enter your choice:4

**Assignment 5:** Write a menu driven program in python to do following

MENU

1. Reverse String
2. Check Whether string is Palindrome
3. Make half string in Uppercase
4. Exit

**Ans:**

#running while loop

while True:

print("-----------------------------------------------") #printing the menu

print("MENU")

print("1.Reverse String")

print("2.Check Wheather String Is Palindrome")

print("3.Make Half String In Uppercase")

print("4.Exit")

choice=int(input("Enter your choice:")) #taking the user choice

if choice==1:

n=input("Enter the String:")

n=n[::-1] #reversing the string by slicing

print("The string in reverse order is ",n)

elif choice==2:

n=input("Enter the string you want to check:")

if n==n[::-1]: #checking for pallindrome

print("The entered string is a pallindrome")

else:

print("The entered string isnot a pallindrome")

elif choice==3: #converting half string to uppercase

n=input("Enter the string:")

halflen=len(n)//2

result=""

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

If i< halflen :

result+= n[i].upper()

else :

result+= n[i]

print("String after operation:",result)

elif choice==4:

print("Thank you for using our program")

break

else :

print("Please enter a valid input")

**Output is:**

-----------------------------------------------

MENU

1.Reverse String

2.Check Wheather String Is Palindrome

3.Make Half String In Uppercase

4.Exit

Enter your choice:1

Enter the String:This Is A Test Python Program

The string in reverse order is margorP nohtyP tseT A sI sihT

-----------------------------------------------

MENU

1.Reverse String

2.Check Wheather String Is Palindrome

3.Make Half String In Uppercase

4.Exit

Enter your choice:2

Enter the string you want to check:REFER

The entered string is a pallindrome

-----------------------------------------------

MENU

1.Reverse String

2.Check Wheather String Is Palindrome

3.Make Half String In Uppercase

4.Exit

Enter your choice:2

Enter the string you want to check:Python

The entered string isnot a pallindrome

-----------------------------------------------

MENU

1.Reverse String

2.Check Wheather String Is Palindrome

3.Make Half String In Uppercase

4.Exit

Enter your choice:3

Enter the string:Python is a programming language

String after operation: PYTHON IS A PROGramming language

-----------------------------------------------

MENU

1.Reverse String

2.Check Wheather String Is Palindrome

3.Make Half String In Uppercase

4.Exit

Enter your choice:4

Thank you for using our program

**Assignment 6:**Write a program to read a list of n integers (positive as well as negative). Create two new lists, one having all positive numbers with sum and the other having all negative numbers with sum from the given list.

**Ans:**

#defining all the variable

posnum=[]

posnumsum=0

negnum=[]

negnumsum=0

#taking a list as input

List = []

n=int(input("Enter the size of the  List ::"))

for i in range(int(n)):

   k=int(input("Enter the Elements of  List ::"))

   List.append(k)

print("The original list you have entered is:",List)

#running the loop for filtering the list

for i in range(len(List)):

    if List[i]>=0:

        posnum.append(List[i])

        posnumsum+=1

    else :

        negnum.append(List[i])

        negnumsum+=1

#printing the result

print("The negetive number list is :",negnum)

print("The sum of the negetive numbers :",negnumsum)

print("The positive number list is :",posnum)

print("The sum of the positive numbers :",posnumsum)

**Output is:**

Enter the size of the List ::10

Enter the Elements of List ::-5

Enter the Elements of List ::6

Enter the Elements of List ::9

Enter the Elements of List ::-8

Enter the Elements of List ::-7

Enter the Elements of List ::3

Enter the Elements of List ::-7

Enter the Elements of List ::-9

Enter the Elements of List ::-5

Enter the Elements of List ::7

The original list you have entered is: [-5, 6, 9, -8, -7, 3, -7, -9, -5, 7]

The negetive number list is : [-5, -8, -7, -7, -9, -5]

The sum of the negetive numbers : 6

The positive number list is : [6, 9, 3, 7]

The sum of the positive numbers : 4

**Assignment 7:**Write a Python program to remove duplicates from a list.

## **Ans:**

List=[]#defining a list

n=int(input("Enter the size of the List ::"))

for i in range(int(n)):

k=int(input("Enter the Elements of List ::"))

List.append(k)

print("The original list you have entered is:",List)

filtered\_list = [] #defining filtered as well as duplilcate list

duplicate\_list = []

for i in List:

if i not in duplicate\_list :

filtered\_list.append(i)

duplicate\_list.append(i)

else:

duplicate\_list.append(i)

print("The list after filtration is :",filtered\_list) #printing the results

**Output is:**

Enter the size of the List ::10

Enter the Elements of List ::5

Enter the Elements of List ::6

Enter the Elements of List ::9

Enter the Elements of List ::2

Enter the Elements of List ::7

Enter the Elements of List ::6

Enter the Elements of List ::1

Enter the Elements of List ::5

Enter the Elements of List ::6

Enter the Elements of List ::1

The original list you have entered is: [5, 6, 9, 2, 7, 6, 1, 5, 6, 1]

The list after filtration is : [5, 6, 9, 2, 7, 1]

**Assignment 8:**Write a python program to read and display file content line by line with each word separated by #.

**Ans:**

file\_name = input("Enter the file name :")

file = open(file\_name)

data = file.read()

info=data.split()

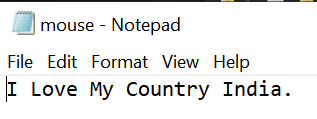
for i in info:

print(i,end="#")

**Output is:**

Enter the file name :mouse.txt

I#Love#My#Country#India.#



**Assignment 9:**Write a python program Read a text file and display the number of vowels/consonants/uppercase/lowercase characters in the file.

**Ans:**

vowels\_count=0

consonants\_count=0

uppercase\_count=0

lowercase\_count=0

vowels="AEIOUaeiou"

file\_name=input("Enter the file name :")

file=open(file\_name)

data=file.read()

for i in data:

if i.isupper():

uppercase\_count+=1

if i.islower():

lowercase\_count+=1

if i in vowels:

vowels\_count+=1

if i not in vowels :

consonants\_count+=1

print("The number of vowels in the file is :",vowels\_count)

print("The number of consonants in the file is :",consonants\_count)

print("The number of uppercae in the file is :",uppercase\_count)

print("The number of lowecase in the file is :",lowercase\_count)

**Output is:**

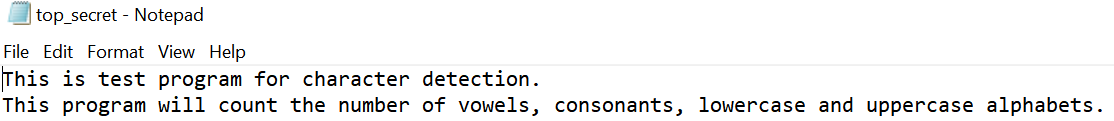
Enter the file name :top\_secret.txt

The number of vowels in the file is : 40

The number of consonants in the file is : 98

The number of uppercae in the file is : 2

The number of lowecase in the file is : 113



**Assignment 10:**Write a python code that accepts a filename, and copies all lines that do not start with a lowercase letter from the first file into the second.

**Ans:**

first\_file\_name=input("Enter the name of the first file :")

second\_file\_name=input("Enter the name of the second file :")

file\_from = open(first\_file\_name)

file\_to = open(second\_file\_name,"w")

data = file\_from.readlines()

for i in data:

if i[0].isalpha():

if not i[0].islower():

file\_to.write(i)

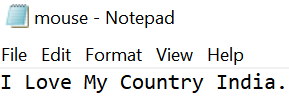
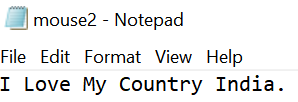
file\_from.close()

file\_to.close()

**Output is:**

Enter the name of the first file :mouse.txt

Enter the name of the second file :mouse2.txt

**Assignment 11:**Write a python program to remove all the lines that contain the character ‘a’ in a file and write it to another file.

**Ans:**

first\_file\_name=input("Enter the name of the first file :")

second\_file\_name=input("Enter the name of the second file :")

file\_from = open(first\_file\_name)

file\_to = open(second\_file\_name,"w")

data = file\_from.readlines()

for i in data:

if 'a' in i :

i=i.replace("a", "")

file\_to.write(i)

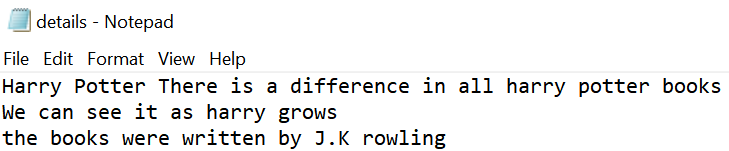
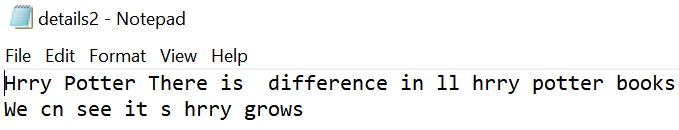
file\_from.close()

file\_to.close()

**Output is:**

Enter the name of the first file :details.txt

Enter the name of the second file :details2.txt

**Assignment 12:**Write a python program to create a binary file with name and roll number. Search for a given roll number and display name, if not found display appropriate message.

**Ans:**

import pickle

record={}

n=int(input("Enter the no of entry you want to enter::"))

for i in range(n):

roll=int(input("Enter the roll no ::"))

name=input("Enter the name::")

record[roll]=name

with open("student.dat","wb") as f:

pickle.dump(record,f)

flag=True

r=int(input("Enter the roll no you want to search ::"))

with open("student.dat","br") as d:

rec = pickle.load(d)

for i in rec:

if i==r:

print("Roll No::",i)

print("Name",rec[i])

flag=False

if flag:

print("Record not found")

**Output is:**

Enter the no of entry you want to enter::5

Enter the roll no ::01

Enter the name::Arprita

Enter the roll no ::02

Enter the name::Subham

Enter the roll no ::03

Enter the name::Poonam

Enter the roll no ::04

Enter the name::Soumya

Enter the roll no ::05

Enter the name::Aryan

Enter the roll no you want to search ::03

Roll No:: 03

Name Poonam

**Assignment 13:**Write a python program to create a binary file with roll number, name and marks. Input a roll number and update name and marks

**Ans:**

import pickle

record={}

n=int(input("Enter the no of entry you want to enter::"))

for i in range(n):

roll=int(input("Enter the roll no ::"))

name=input("Enter the name::")

marks=input("Enter the marks::")

record[roll]=[name,marks]

with open("hello.dat","ab") as f:

pickle.dump(record,f)

flag=True

r=int(input("Enter the roll no you want to search ::"))

d = open("hello.dat","rb+")

rec=pickle.load(d)

for i in rec:

if i==r:

print("Current Name is ::",rec[i][0])

print("Current Marks is ::",rec[i][1])

rec[i][0] = input("Enter new name ::")

rec[i][1] = input("Enter new marks ::")

flag=False

if flag :

print("Report Not Found")

else :

d.seek(0)

rec=pickle.dump(rec,d)

print("Report Successfully Updated")

d.close()

**Output is:**

Enter the no of entry you want to enter::5

Enter the roll no ::01

Enter the name::Aryan

Enter the marks::25

Enter the roll no ::02

Enter the name::Ramesh

Enter the marks::46

Enter the roll no ::03

Enter the name::Soumya

Enter the marks::99

Enter the roll no ::04

Enter the name::Priya

Enter the marks::66

Enter the roll no ::05

Enter the name::Mahesh

Enter the marks::81

Enter the roll no you want to search ::0

Current Name is :: Soumya

Current Marks is :: 99

Enter new name ::Soumyaranjan

Enter new marks ::100

Report Successfully Updated

**Assignment 14:**Write a menu driven python program to create a CSV file by entering dept-id, name and city, read and search the record for given dept-id.

MENU

1. Create csv

2. Search record as per dept no

3.Exit

**Ans:**

import csv

while True:

print('\*\*\* MENU \*\*\*')

print('1: create csv file')

print('2: Search as per id')

print('3: Exit')

choice=int(input('Enter your choice:'))

if choice==1:

f=open('dept.csv','a')

mywriter=csv.writer(f,delimiter=',')

n = int(input("Enter the number of rows you want to enter::"))

for n in range(n):

dept\_no =int(input('Enter dept no:'))

name =input('Enter name:')

city =input('Enter city:')

mywriter.writerow([dept\_no,name,city])

print('Record Successfully Saved')

f.close()

if choice==2:

print("Searching the record")

f=open('dept.csv','r',newline='\r\n') # newline='\r\n' Remove new line character from output

id=input('Enter the Dept-id you want to search:')

s=csv.reader(f)

for rec in s:

if rec[0]==id:

print("Dept-id",rec[0])

print("Name=",rec[1])

print("City=",rec[2])

f.close()

if choice==3:

break

**Output is:**

\*\*\* MENU \*\*\*

1: create csv file

2: Search as per id

3: Exit

Enter your choice:1

Enter the number of rows you want to enter::5

Enter dept no:1430001

Enter name:Soumyaranjan

Enter city:Angul

Record Successfully Saved

Enter dept no:1430002

Enter name:Rakesh

Enter city:Bhubneswar

Record Successfully Saved

Enter dept no:1430003

Enter name:Ramesh

Enter city:Cuttack

Record Successfully Saved

Enter dept no:1430004

Enter name:Swamjyoti

Enter city:Kalahandi

Record Successfully Saved

Enter dept no:1430005

Enter name:Raju

Enter city:Jharsuguda

Record Successfully Saved

\*\*\* MENU \*\*\*

1: create csv file

2: Search as per id

3: Exit

Enter your choice:2

Searching the record

Enter the Dept-id you want to search:1430002

Dept-id 1430002

Name= Arun

City= Bhubneswar

\*\*\* MENU \*\*\*

1: create csv file

2: Search as per id

3: Exit

Enter your choice:2

Searching the record

Enter the Dept-id you want to search:1430003

Dept-id 1430003

Name= Ramwsh

City= Cuttack

\*\*\* MENU \*\*\*

1: create csv file

2: Search as per id

3: Exit

Enter your choice:3

**Assignment 15:**Write a Menu driven program in python to count spaces, digits, words and lines from text file try.txt

**Ans:**

while True:

print('\*\*\* MENU \*\*\*')

print('1:count spaces')

print('2:count digits')

print('3:count words')

print('4:count lines')

print('5:exit')

choice=int(input('Enter your choice:'))

if choice==1:

File=open("data.txt", 'r')

space\_count=0

F=File.read()

for letter in F:

if( letter.isspace( )):

space\_count=space\_count+1

print('No. of spaces are:',space\_count)

File.close()

if choice==2:

digit\_count=0

File=open("data.txt", 'r')

F=File.read()

for letter in F:

if( letter.isdigit( )):

digit\_count=digit\_count+1

print('No. of digits are:',digit\_count)

File.close()

if choice==3:

File=open("data.txt","r")

linesList=File.readlines()

words\_count=0

for line in linesList:

wordsList=line.split()

print(wordsList)

words\_count = words\_count + len(wordsList)

print("The number of words in this file are : ",words\_count)

File.close()

if choice==4:

lines\_count =0

File=open("data.txt","r")

data=File.readlines()

print(data)

for line in data:

lines\_count=lines\_count+1

print("Number of lines : " ,lines\_count)

File.close()

if choice==5:

break

**Output is:**

\*\*\* MENU \*\*\*

1:count spaces

2:count digits

3:count words

4:count lines

5:exit

Enter your choice:1

No. of spaces are: 17

\*\*\* MENU \*\*\*

1:count spaces

2:count digits

3:count words

4:count lines

5:exit

Enter your choice:2

No. of digits are: 10

\*\*\* MENU \*\*\*

1:count spaces

2:count digits

3:count words

4:count lines

5:exit

Enter your choice:3

['Hello', 'there,']

['This', 'is', 'a', 'test', 'Python', 'program.', 'This', 'file', 'contains', 'alphabets', 'as', 'well', 'as', 'numbers', 'like', '1,2,3,4,5,6,7,8,9,0.']

The number of words in this file are : 18

\*\*\* MENU \*\*\*

1:count spaces

2:count digits

3:count words

4:count lines

5:exit

Enter your choice:4

['Hello there,\n', 'This is a test Python program. This file contains alphabets as well as numbers like 1,2,3,4,5,6,7,8,9,0.']

Number of lines : 2

\*\*\* MENU \*\*\*

1:count spaces

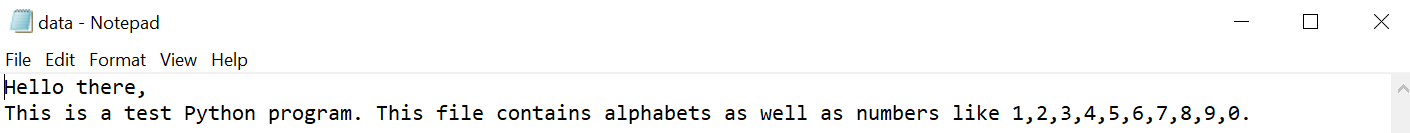
2:count digits

3:count words

4:count lines

5:exit

Enter your choice:5



**THE END**