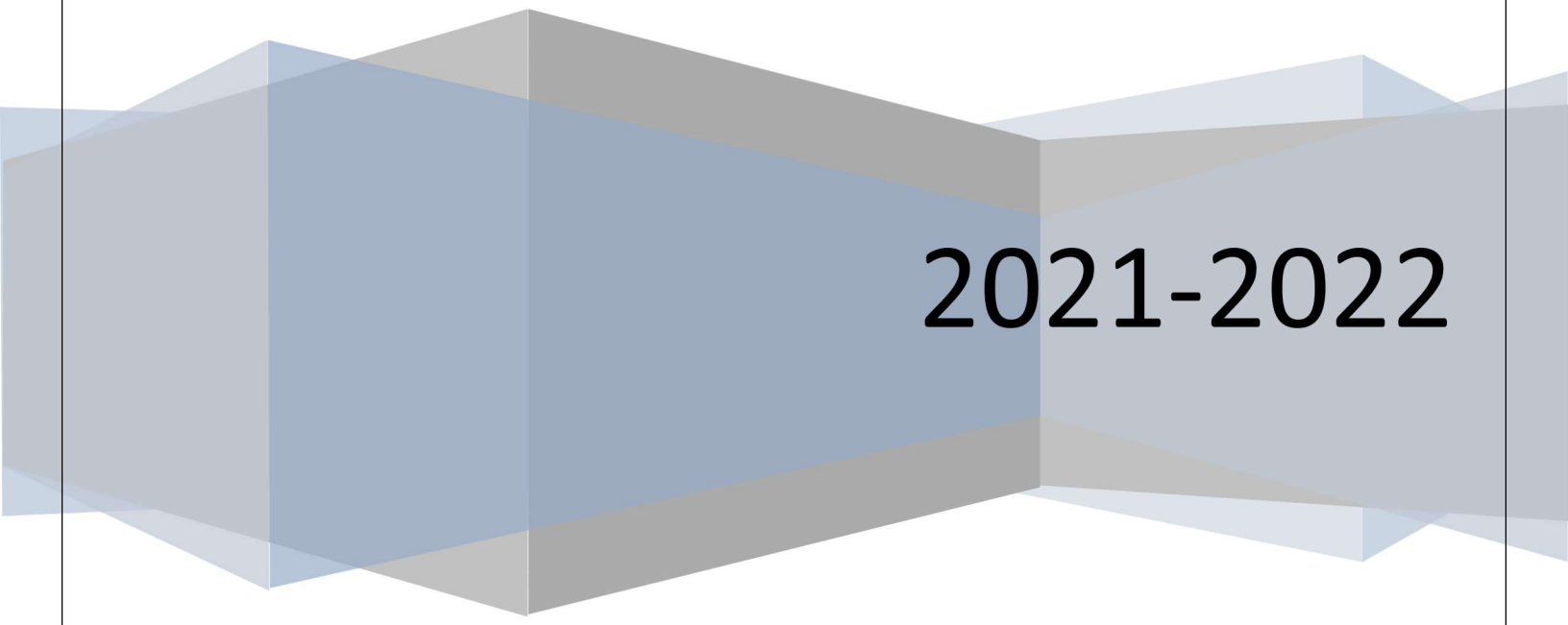
KENDRIYA VIDYALAYA NO.1 ANGUL

COMPUTER SCIENCE PRACTICAL RECORD (TERM1)

CLASS : XII



2021-2022

ACKNOWLEDGEMENT:

I, SOUMYARANJAN SAHOO OF CLASS XII – SECTION SCI WOULD LIKE TO EXPRESS OUR SINCERE GRATITUDE TO OUR

COMPUTER SCIENCE TEACHER

MRS. JHILI SAHOO,

PGT (COMPUTER SCIENCE), FOR HER VITAL SUPPORT, GUIDANCE AND ENCOURAGEMENT – WITHOUT WHICH

THIS PROJECT WOULD NOT HAVE COME FORTH.

WE WOULD ALSO LIKE TO EXPRESS OUR GRATITUDE TO OUR SCHOOL KENDRIYA VIDYALAYA

NO.1 ANGUL .

CERTIFICATE

This is to certify that, Practical on Computer Science (Term-1) is successfully completed by Soumayaranjan Sahoo of Class: XII, Division: Sci Roll no. : 39 for the academic year 2021-2022.

Signature:

Examiner (Subject Teacher)

Internal Examiner External Examiner

Principal

Date: / / 2022

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

4. Reverse String
5. Check Whether string is Palindrome
6. Make half string in Uppercase
7. 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]
```

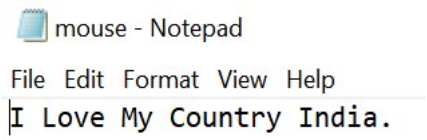
Assignment 8: Write a python program to read and display file content line by line with each word separated by #.

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.#
```



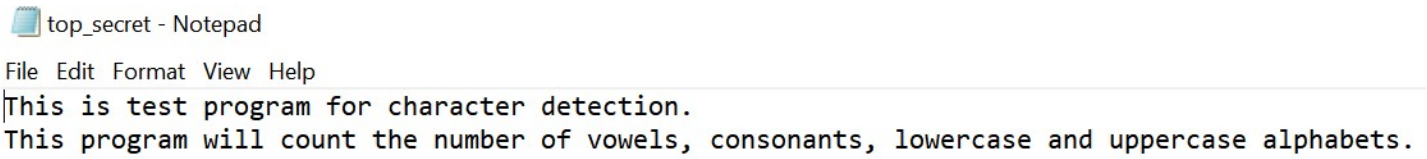
Assignment 9: Write a python program Read a text file and display the number of vowels/consonants/uppercase/lowercase characters in the file.

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
```



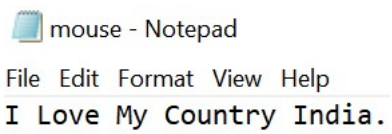
Assignment 10: Write a python code that accepts a filename, and copies all lines that do not start with a lowercase letter from the first file into the second.

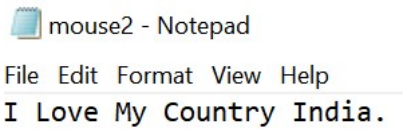
Ans:

```
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

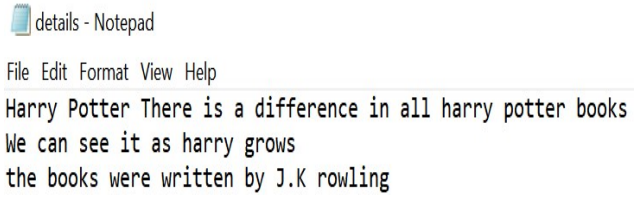


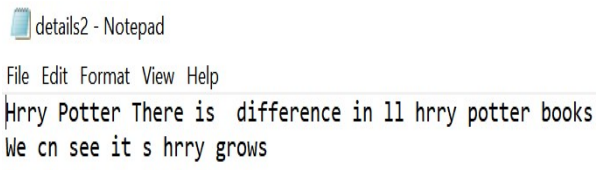


Assignment 11: Write a python program to remove all the lines that contain the character 'a' in a file and write it to another file.
Ans:

```
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:

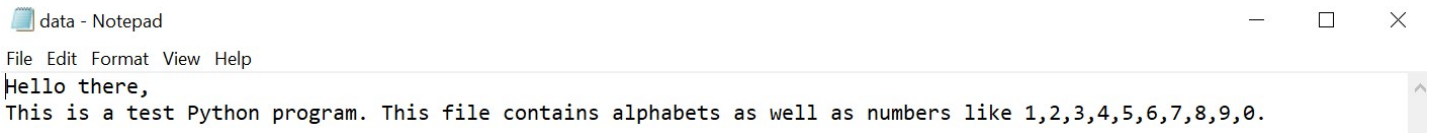
```
while True:
   print('*** MENU ***')
   print('1:count spaces')
   print('2:count digits')
   print('3:count words')
   print('4:count lines')
   print('5:exit')
   choice=int(input('Enter your choice:'))
   if choice==1:
      File=open("data.txt", 'r')
      space_count=0
      F=File.read()
      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