ST. MARY'S INTER COLLEGE, ETAWAH

LIST OF PROGRAMS FOR CLASS XII PRACTICAL RECORD

Q.1) Write a menu driven program in python to display Fibonacci series of a given number or print factorial of a given no.

Ans:

```
ch='Y'
while (ch=='Y' or ch=='y'):
    print("Enter 1 : fibonacci series:")
    print("Enter 2 : factorial:")
    opt=int(input('enter ur choice:='))
    if opt==1:
        n=int(input('enter no. of terms:'))
        no1=0
        no2=1
        x=0
        print("The first ",n, "terms of the fibonacci series is:")
        print(no1,no2,end=" ")
        while(x<=(n-2)):
                no3=no1+no2
                no1=no2
                no2=no3
                 print (no3,end=" ")
                x=x+1
    elif opt==2:
        f=1
        n=int(input('enter no:'))
        for i in range(1,n+1):
                f=f*i
        print('factorial is:',f)
    else:
        print('invalid choice')
    ch=(input('want to continue?'))
```

Q.2) Write a menu driven code in python to check whether a string is palindrome or not or check whether one number is prime or not.

Ans:

```
ch='Y'
while (ch=='Y' or ch=='y'):
    print("Enter 1 : String palindrome:")
    print("Enter 2 : prime no:")
    opt=int(input('enter ur choice:='))
    if opt==1:
        str=input('Enter Text:=')
        rev=str[::-1]
        if str==rev:
            print(str,  "is Palindrome")
        else:
            print(str, "is not Palindrome")
    elif opt==2:
        no=int(input('Enter Number : '))
        for i in range(2,no):
            ans=no%i
            if ans==0:
                print ("The given number is not a Prime Number")
                break;
         else: # Loop else
                print("The given number is a Prime Number")
    else:
        print('invalid choice')
    ch=(input('want to continue? Y/N'))
```

Q 3) Write a program to accept a set of integers and find whether those numbers are palindromes or not.

```
n1=0
while True :
   a = input("enter a number (for quit enter q = ")
   if a == "q" or a== "Q" :
      break
   else :
         n=int(a)
         while n>0:
               d=n%10
               n1=n1*10+d
               n=n//10

         if int(a)  ==  n1 :
               print(n1,"is palindromes of ", int(a))
         else :
               print(n1,"is not palindromes of ",int(a))
         n1=0
```

Q.4) Write a program that prompts for a phone number of 10 digit and two dashes, with dashes after the area code and the next three numbers.

Eg. 017-555-1212 is a valid input.

Your program should check whether the phone number entered is in valid format or not and display the appropriate messages on your screen.

```
num = input("enter your phone number = ")
if len(num)== 12 :
   if num[3]== "-" :
      if num[4:7].isdigit() :
         if num [7]== "-":
            if num[ 8 : 13 ].isdigit() :
               if num[ : 3 ].isdigit() :
                  print("it is vaild number ")
               else :
                  print("it is not vaild number ")
            else :
                  print("it is not vaild number ")
         else :
               print("it is not vaild number ")
      else :
            print("it is not vaild number ")
```

```
    else :
            print("it is not vaild number ")
else :
        print("it is not vaild number ")
```

Q.5) Write a program that prompts the user to type some sentence (s) followed by “enter key”, it should then print the original sentence (s) and the following statistics relating to sentence (s) :

I = number of words

II = numbers of character (including white-space and punctuation)

III = percentage of character that are alphanumeric.

Answer =

```
sen = input("enter a sentance = ")
count = 1
alp = 0
for j in sen :
    if j == " " :
        count += 1
    elif j.isalnum() :
        alp += 1
print("number of word is ",count)
print("number of characters ",len(sen))
print("percentage of alpha numeric = ", (alp / len(sen)) * 100)
```

Q.6) Write a python program by using a function to search for an element in a given list.

Ans:

```
def lsearch(ar,n,item):
    for i in range(0,n):
        if ar[i]==item:
            return i
    return -1

n=int(input('enter size of list:'))
print('enter numbers in sorted order:\n')
ar=[0]*n
for i in range(n):
    ar[i]=int(input('Enter the element '))
item=int(input('enter no. to be searched:'))
index=lsearch(ar,n,item)
if index!=-1:
    print('\n element found at index :',index,',position: ',(index+1))
else:
    print('\n sorry, the given number is not found')
```

Q.7) Write a program by using a function to find the sum of the following series:

$$x - x^2/2! + x^3/3! - \ldots\ldots - x^6/6!$$

Ans:

```
def sumseries(x):
        fact = 1
        sum = 0
        for i in range(1,7):
                fact = fact * i
                if i % 2 == 0 :
                        sum = sum - (x**i)/fact
                else :
                        sum = sum + (x**i)/fact
        print("Sum of the given series = ",sum)

x = int(input("enter a term = "))
sumseries(x)
```

Q.8 Write a program to have following functions:

(i) A function that takes a number as argument and calculates cube for it. The function does not return a value .If there is no value passed to the function in function call, the function should calculate cube of 2.

(ii) A function that takes two char arguments and returns True if both the arguments are equal otherwise False.

Test both these functions by giving appropriate function call statements.

```
(i)
def cube( a = 2 ) :
    print( "Cube of ", a ,"="  , a ** 3 )

num = input("Enter a number (For empty press Enter ) :")
if num == "" :
    cube()
else :
    cube( int (num) )
(ii)
 def chr() :
    char1 = input("Enter a Char 1 : ")
    char2 = input("Enter a Char 2 : ")
    if char1 == char2 :
        print("Ture")
    else:
        print("False ")

chr()
```

Q. 9) Write a function that takes two numbers and returns the number that has minimum one's digit

[For example, if numbers passed are 491 and 278, then the function will return 491 because it has got minimum one's digit out of two given numbers (491's 1 is < 278's 8)].

```
def min(x , y ) :

    a = x % 10

    b = y % 10

    if a < b :

        return x

    else :

        return y


first = int(input("Enter first number = "))

second = int(input("Enter second number = "))

print ( "Minimum one's digit number = " , min( first , second ) )
```

Q.10) Write a program that generates a series using a function which takes first and last values of the series and then generates four terms that are equidistant e.g., if two numbers passed are 1 and 7 then function returns 1 3 5 7.

```
def ser(    a  , b ) :

    d = int ( ( b - a ) / 3 )

    print("Series = " , a , a + d , a + 2*d , b )



first = int(input("Enter first Term = "))

last = int(input("Enter last Term = "))



ser(first , last )
```

Q.11) Write a menu driven python code to display the content of the text file ‘abc.txt’ with those lines which have first character 'g' & count all the line having 'a' as last character and also print the lines.

Ans:

```
ch='Y'
while (ch=='Y' or ch=='y'):
    print("Enter 1 : lines start with g:")
    print("Enter 2 : count lines end with a :")
    opt=int(input('enter ur choice:='))
    if opt==1:
        file=open("abc.txt" , "r")
        line=file.readline( )
        while line:
            if line[0]=="g" :
                print(line)
            line=file.readline( )
        file.close( )
    elif opt==2:
        count =0
        f=open("abc.txt","r")
        data=f.readlines()
        for line in data:
            l=len(line)
            if line[l-2] == 'a':
                print(line)
                count=count+1
```

```
    print("Number of lines having 'a' as last character is/are : " ,count)
    f.close()
else:
    print('invalid choice')
ch=(input('want to continue?'))
```

Q.12) Write a menu driven program in python to read text file ‘abc.txt’ and display

- No. of words
- No. of lines
- No. of alphabets

Ans:-

```
ch='Y'
while (ch=='Y' or ch=='y'):
    print("Enter 1 : count words:")
    print("Enter 2 : count line:")
    print("Enter 3 : count alphabets:")
    print("Enter 4 : exit:")
    opt=int(input('enter ur choice:='))
    if opt==1:
        f=open("abc.txt","r")
        linesList=f.readlines()
        count=0
        for line in linesList:
            wordsList=line.split()
            print(wordsList)
            count = count+ len(wordsList)
        print("The number of words in this file are : ",count)
        f.close()
    elif opt==2:
        c=0
        f=open("abc.txt","r")
        line=f.readline()
        while line:
            c=c+1
```

```
        line=f.readline()
    print('no. of lines:',c)
    f.close( )
elif opt==3:
    F=open('abc.txt','r')
    c=0
    for line in F:
        words=line.split()
        for i in words:
            for letter in i:
                if(letter.isalpha()):
                    c=c+1
    print('Total no. of alphabets are:',c)
elif opt==4:
    break
else:
    print('invalid choice')
ch=(input('want to continue?'))
```

13. Consider the following definition of dictionary member; write a method in python to write the content in a pickled file member.dat. Also write another method to search and display the content of the pickled file member.dat, where 'MemberNo' key of the dictionary is matching with 1005

member={'MemberNo':_____,'Name':_____}

Ans.

```
def WRITEMEMBER():
    import pickle
    member={ }
    memfile=open('member.dat','wb')
    ans='y'
    while ans=='y' or ans=='Y':
        mno=int(input('Enter the Member Number'))
        mname=input('Enter the Member Name')
        member['MemberNo']=mno
        member['Name']=mname
        pickle.dump(member,memfile)
        ans=input('Do you want to enter more records (Y/N)….')
    memfile.close()

def DISPLAYSTAFF():
    import pickle
    member={}
    memfile=open('member.dat','rb')
    found=False
    try:
        print('The details of members with Member No. 1005')
```

```
        while True:
            member=pickle.load(memfile)
            if member['MemberNo']==1005:
                print(member)
                found=True
    except EOFError:
        if found== False:
            print('No such records found')
        else:
            print('Search Successful')
        memfile.close()
WRITEMEMBER()
DISPLAYSTAFF()
```

14. Write a Python program to write a nested Python list(contains Item_Name, description and price) to a CSV file in one go. After writing the CSV file, read the CSV file and display the content.

Ans:-

```
import csv
fh=open('items.csv','w')
iwriter=csv.writer(fh)
ans="y"
itemrec=[["Item_Name","Description","Price"]]
print("Enter item details")
while ans=="y":
    iname=input("Enter Item Code :")
    desc=input("Enter description :")
    price=float(input("Enter price :"))
    itemrec.append([iname,desc,price])
    ans=input("Do you want to enter more Items (Y/N)….")
else:
    iwriter.writerows(itemrec)
    print("Records written successfully")
fh.close()
fh=open("items.csv","r",newline='\r\n')
ireader=csv.reader(fh)
for rec in ireader:
    print(rec)
fh.close()
```

Q15. Write a python code to add a student using mysql connectivity. You are requested to display the entire content of the student table also.

Create database and table as below:

Name of database =school

Name of table = student (roll, name, age, class, city)

[Apply the following commands in mysql

create database school;

create table student(roll integer, name char(20), age integer, class char(5), city char(20));]

Ans:

```
import mysql.connector
mydb=mysql.connector.connect(host="localhost", user="root", passwd="Smic123@", database="school")
mycursor=mydb.cursor()
ch='Y'
while ch=='Y' or ch=='y':
    roll=int(input("Enter the roll number : "))
    name=input("Enter the Name: ")
    age=int(input("Enter Age of Student : "))
    class1=input("Enter the Class : ")
    city=input("Enter the City of the Student : ")
    stud=(roll,name,age,class1,city)
    sql="insert into student (roll,name,age,class,city) values (%s,%s,%s,%s,%s)"
    mycursor.execute(sql,stud)
    mydb.commit()
```

```
    print('One Record added successfully!!!')
    ch=(input('Do you want to continue? Y/N'))
mycursor.execute("select * from student")
res=mycursor.fetchall()
print("The Students details are as follows : ")
print("(ROll, Name, Age, Class, City)")
for x in res:
    print(x)
mydb.close()
```

Q.16 Write a python code to delete a student as per given roll number by using mysql connectivity. Program should display the contents of student table before and after deletion. Create the database and table as below:

Name of database =school

Name of table = student(roll,name,age,class,city)

Ans:

```
import mysql.connector
mydb=mysql.connector.connect(host="localhost", user="root",
passwd="Smic123@", database="school")
mycursor=mydb.cursor()
roll=int(input("Enter the roll number of the student to be deleted : "))
rl=(roll,)
mycursor.execute("select * from student")
res=mycursor.fetchall()
print("The Students details before deletion are as follows : ")
print("(ROll, Name, Age, Class, City)")
for x in res:
    print(x)

sql="delete from Student where roll=%s"
mycursor.execute(sql,rl)
print('Record deleted!!!')
mydb.commit()

mycursor.execute("select * from student")
res=mycursor.fetchall()
print("The Students details after deletion are as follows : ")
```

```
print("(ROll, Name, Age, Class, City)")
for x in res:
    print(x)

mydb.close()
```

Q.17) Write a python code to search a student as per given roll number in database using mysql connectivity and show its result.

Create database and table as below:

Name of database =school

Name of table = student(roll,name,age,class,city)

Ans:

```
import mysql.connector
mydb=mysql.connector.connect(host="localhost", user="root",
passwd="Smic123@", database="school")
mycursor=mydb.cursor()
s=int(input("Enter roll no to search: "))
rl=(s,)
sql="select * from student where roll=%s"
mycursor.execute(sql,rl)
res=mycursor.fetchall()
if not res :
   print("The Given Roll no is not found : ")
else:
   print("The Students details are as follows : ")
   print("(ROll, Name, Age, Class, City)")
   for x in res:
      print(x)
mydb.close()
```

Q 18 = Write a python code to search a student as per given roll number in database and if the roll number is found then modify the city of that particular student by accepting a new city name from user. Program should display the details before and after modification.

Answer =

```
import mysql.connector
mydb=mysql.connector.connect(host="localhost", user="root",
passwd="Smic123@", database="school")
mycursor=mydb.cursor()
s=int(input("Enter roll no to be searched: "))
rl=(s,)
sql="select * from student where roll=%s"
mycursor.execute(sql,rl)
res=mycursor.fetchall()
if not res :
    print("The Given Roll no is not found : ")
else:
    c=input("Enter the new city name : ")
    print("The Students details before modification is as follows : ")
    print("(ROll, Name, Age, Class, City)")
    for x in res:
        print(x)
    r2=(c,s)
    sql="update student set city= %s where roll=%s"
    mycursor.execute(sql,r2)
    mydb.commit()
```

```
print("Record updated successfully!!!! ")
sql="select * from student where roll=%s"
mycursor.execute(sql,rl)
res=mycursor.fetchall()
print("The Students details after modification is as follows : ")
print("(ROll, Name, Age, Class, City)")
for x in res:
    print(x)
mydb.close()
```

Q.19) Write a menu driven python code to perform push and pop operations on a stack which contains bookname.

Ans:

```
stk=[]
while True:
    print("Enter 1 : Push")
    print("Enter 2 : Pop")
    print("Enter 3 : Display Stack")
    print("Enter 4 : Exit")
    opt=int(input('enter ur choice:='))
    if opt==1:
        d=(input("enter book name : "))
        stk.append(d)
    elif opt==2:
        if (stk==[]):
            print( "Stack empty")
        else:
            p=stk.pop()
            print ("Deleted element:", p)
    elif opt==3:
        if (stk==[]):
            print( "Stack empty")
        else:
            print ("The stack content is :")
            print(stk)
    elif opt==4:
          break
    else:
          print('invalid choice')
```