पुना International School
Shree Swaminarayan Gurukul, Zundal

PRACTICAL FILE

COMPUTER SCIENCE (083)

PYTHON

Student Name : _____

Grade : **XII - SCIENCE**

Roll No. : _____

PUNA INTERNATIONAL SCHOOL
(Swaminarayan Gurukul)

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Certificate

This is to certify that _____

student of Class- XII Science has successfully completed their Computer Science (New - 083) Practical File.

Computer Teacher

_____

External Examiner

_____

Principal

_____

INDEX

PRACTICAL FILE- COMPUTER SCIENCE (083)

LIST OF PRACTICALS (2020-21) **CLASS-XII**

Programming Language : Python

Date : Experiment No: 1

Program 1: Input any number from user and calculate factorial of a number

```
# Program to calculate factorial of entered number
num = int(input("Enter any number :"))
fact = 1
n = num             # storing num in n for printing
while num>1:        # loop to iterate from n to 2
        fact = fact * num
        num-=1

print("Factorial of ", n , " is :",fact)
```

OUTPUT

```
Enter any number :6
Factorial of  6  is : 720
```

Date : Experiment No:2

Program 1: Input any number from user and check it is Prime no. or not

```
#Program to input any number from user
#Check it is Prime number of not
import math
num = int(input("Enter any number :"))
isPrime=True
for i in range(2,int(math.sqrt(num))+1):
        if num % i == 0:
                isPrime=False

if isPrime:
        print("## Number is Prime ##")
else:
        print("## Number is not Prime ##")
```

OUTPUT

```
Enter any number :117
## Number is not Prime ##
>>>
Enter any number :119
## Number is not Prime ##
>>>
Enter any number :113
## Number is Prime ##
>>>
Enter any number :7
## Number is Prime ##
>>>
Enter any number :19
## Number is Prime ##
```

Date : Experiment No: 3

Program : Write a program to find sum of elements of List recursively

```
#Program to find sum of elements of list recursively
def findSum(lst,num):
        if num==0:
                return 0
        else:
                return lst[num-1]+findSum(lst,num-1)


mylist = []                 # Empty List
#Loop to input in list
num = int(input("Enter how many number :"))
for i in range(num):
        n = int(input("Enter Element "+str(i+1)+":"))
        mylist.append(n)    #Adding number to list

sum = findSum(mylist,len(mylist))
print("Sum of List items ",mylist, " is :",sum)
```

OUTPUT

```
Enter how many number :6
Enter Element 1:10
Enter Element 2:20
Enter Element 3:30
Enter Element 4:40
Enter Element 5:50
Enter Element 6:60
Sum of List items  [10, 20, 30, 40, 50, 60]  is : 210
```

Date : Experiment No: 4

Program 1: Write a program to calculate the n^{th} term of Fibonacci series

```
#Program to find 'n'th term of fibonacci series
#Fibonacci series : 0,1,1,2,3,5,8,13,21,34,55,89,...
#nth term will be counted from 1 not 0

def nthfiboterm(n):
    if n<=1:
        return n
    else:
        return (nthfiboterm(n-1)+nthfiboterm(n-2))

num = int(input("Enter the 'n' term to find in fibonacci :"))
term =nthfiboterm(num)
print(num,"th term of fibonacci series is :",term)
```

OUTPUT

```
Enter the 'n' term to find in fibonacci :10
10 th term of fibonacci series is : 55
```

Date : Experiment No: 5

Program : Program to search any word in given string/sentence

```
#Program to find the occurence of any word in a string
def countWord(str1,word):
        s = str1.split()
        count=0
        for w in s:
                if w==word:
                        count+=1
        return count

str1 = input("Enter any sentence :")
word = input("Enter word to search in sentence :")
count = countWord(str1,word)
if count==0:
        print("## Sorry! ",word," not present ")
else:
        print("## ",word," occurs ",count," times ## ")
```

OUTPUT

```
Enter any sentence :my computer your computer our computer everyones computer
Enter word to search in sentence :computer
##  computer  occurs  4  times ##

Enter any sentence :learning python is fun
Enter word to search in sentence :java
## Sorry!  java  not present
```

Date : Experiment No: 6

Program 1: Program to read and display file content line by line with each word separated by '#'

```
#Program to read content of file line by line
#and display each word separated by '#'

f = open("file1.txt")

for line in f:
        words = line.split()
        for w in words:
                print(w+'#',end='')
        print()
f.close()
```

NOTE : if the original content of file is:
India is my country
I love python
Python learning is fun

OUTPUT
India#is#my#country#
I#love#python#
Python#learning#is#fun#

Date : Experiment No: 7

Program 1: Program to read the content of file and display the total number of consonants, uppercase, vowels and lower case characters'

```
#Program to read content of file
#and display total number of vowels, consonants, lowercase and uppercase characters

f = open("file1.txt")
v=0
c=0
u=0
l=0
o=0
data = f.read()
vowels=['a','e','i','o','u']
for ch in data:
        if ch.isalpha():
                if ch.lower() in vowels:
                        v+=1
                else:
                        c+=1
        if ch.isupper():
                u+=1
        elif ch.islower():
                l+=1
        elif ch!=' ' and ch!='\n':
                o+=1
print("Total Vowels in file             :",v)
print("Total Consonants in file    n    :",c)
print("Total Capital letters in file    :",u)
print("Total Small letters in file      :",l)
print("Total Other than letters         :",o)
f.close()
```

NOTE : if the original content of file is:

India is my country
I love python
Python learning is fun
123@

OUTPUT

```
Total Vowels in file             : 16
Total Consonants in file    n    : 30
Total Capital letters in file    : 2
Total Small letters in file      : 44
Total Other than letters         : 4
```

Date : Experiment No: 8

Program 1: Program to create binary file to store Rollno and Name, Search any Rollno and display name if Rollno found otherwise "Rollno not found"

```
#Program to create a binary file to store Rollno and name
#Search for Rollno and display record if found
#otherwise "Roll no. not found"

import pickle
student=[]
f=open('student.dat','wb')
ans='y'
while ans.lower()=='y':
        roll = int(input("Enter Roll Number :"))
        name = input("Enter Name :")
        student.append([roll,name])
        ans=input("Add More ?(Y)")
pickle.dump(student,f)
f.close()
f=open('student.dat','rb')
student=[]
while True:
        try:
                student = pickle.load(f)
        except EOFError:
                break
ans='y'

while ans.lower()=='y':
        found=False
        r = int(input("Enter Roll number to search :"))
        for s in student:
                if s[0]==r:
                        print("## Name is :",s[1], " ##")
                        found=True
                        break
        if not found:
                print("####Sorry! Roll number not found ####")
        ans=input("Search more ?(Y) :")
f.close()
```

OUTPUT

```
Enter Roll Number :1
Enter Name :Amit
Add More ?(Y)y

Enter Roll Number :2
Enter Name :Jasbir
Add More ?(Y)y

Enter Roll Number :3
Enter Name :Vikral
Add More ?(Y)n

Enter Roll number to search :2
## Name is : Jasbir  ##
Search more ?(Y) :y

Enter Roll number to search :1
## Name is : Amit  ##
Search more ?(Y) :y

Enter Roll number to search :4
####Sorry! Roll number not found ####
Search more ?(Y) :n
```

Date : Experiment No: 9

Program 1: Program to create binary file to store Rollno,Name and Marks and update marks of entered Rollno

```
#Program to create a binary file to store Rollno and name
#Search for Rollno and display record if found
#otherwise "Roll no. not found"

import pickle
student=[]
f=open('student.dat','wb')
ans='y'
while ans.lower()=='y':
        roll = int(input("Enter Roll Number :"))
        name = input("Enter Name :")
        marks = int(input("Enter Marks :"))
        student.append([roll,name,marks])
        ans=input("Add More ?(Y)")
pickle.dump(student,f)
f.close()
f=open('student.dat','rb+')
student=[]
while True:
        try:
                student = pickle.load(f)
        except EOFError:
                break
ans='y'
while ans.lower()=='y':
        found=False
        r = int(input("Enter Roll number to update :"))
        for s in student:
                if s[0]==r:
                        print("## Name is :",s[1], " ##")
                        print("## Current Marks is :",s[2]," ##")
                        m = int(input("Enter new marks :"))
                        s[2]=m
                        print("## Record Updated ##")
                        found=True
                        break
        if not found:
                print("####Sorry! Roll number not found ####")
        ans=input("Update more ?(Y) :")
f.close()
```

OUTPUT

```
Enter Roll Number :1
Enter Name :Amit
Enter Marks :99
Add More ?(Y)y

Enter Roll Number :2
Enter Name :Vikrant
Enter Marks :88
Add More ?(Y)y

Enter Roll Number :3
Enter Name :Nitin
Enter Marks :66
Add More ?(Y)n

Enter Roll number to update :2
## Name is : Vikrant  ##
## Current Marks is : 88  ##
Enter new marks :90
## Record Updated ##
Update more ?(Y) :y

Enter Roll number to update :2
## Name is : Vikrant  ##
## Current Marks is : 90  ##
Enter new marks :95
## Record Updated ##
Update more ?(Y) :n
```

Date : Experiment No: 10

Program 1: Program to read the content of file line by line and write it to another file except for the lines contains 'a' letter in it.

```
#Program to read line from file and write it to another line
#Except for those line which contains letter 'a'

f1 = open("file2.txt")
f2 = open("file2copy.txt","w")

for line in f1:
        if 'a' not in line:
                f2.write(line)
print("## File Copied Successfully! ##")
f1.close()
f2.close()
```

NOTE: Content of file2.txt

a quick brown fox
one two three four
five six seven
India is my country
eight nine ten
bye!

OUTPUT

```
## File Copied Successfully! ##
```

NOTE: After copy content of file2copy.txt

one two three four
five six seven
eight nine ten
bye!

Date : Experiment No: 11

Program 1: Program to create CSV file and store empno,name,salary and search any empno and display name,salary and if not found appropriate message.

```
import csv
with open('myfile.csv',mode='a') as csvfile:
        mywriter = csv.writer(csvfile,delimiter=',')
        ans='y'
        while ans.lower()=='y':
                eno=int(input("Enter Employee Number "))
                name=input("Enter Employee Name ")
                salary=int(input("Enter Employee Salary :"))
                mywriter.writerow([eno,name,salary])
                print("## Data Saved... ##")
                ans=input("Add More ?")
ans='y'
with open('myfile.csv',mode='r') as csvfile:
        myreader = csv.reader(csvfile,delimiter=',')
        while ans=='y':
                found=False
                e = int(input("Enter Employee Number to search :"))
                for row in myreader:
                        if len(row)!=0:
                                if int(row[0])==e:
                                        print("============================")
                                        print("NAME   :",row[1])
                                        print("SALARY :",row[2])
                                        found=True
                                        break
                if not found:
                        print("============================")
                        print("      EMPNO NOT FOUND")
                        print("============================")
                        ans = input("Search More ? (Y)")
```

```
Enter Employee Number 1
Enter Employee Name Amit
Enter Employee Salary :90000
## Data Saved... ##
Add More ?y
Enter Employee Number 2
Enter Employee Name Sunil
Enter Employee Salary :80000
## Data Saved... ##
Add More ?y
Enter Employee Number 3
Enter Employee Name Satya
Enter Employee Salary :75000
## Data Saved... ##
Add More ?n
Enter Employee Number to search :2
============================
NAME   : Sunil
SALARY : 80000
Search More ? (Y)y
Enter Employee Number to search :3
============================
NAME   : Satya
SALARY : 75000
Search More ? (Y)y
Enter Employee Number to search :4
=========================
     EMPNO NOT FOUND
=========================
Search More ? (Y)n
```

Date : Experiment No: 12

Program 1: Program to generate random number 1-6, simulating a dice

```
# Program to generate random number between 1 - 6
# To simulate the dice
import random
import time
print("Press CTRL+C to stop the dice ")
play='y'
while play=='y':
        try:
                while True:
                        for i in range(10):
                                print()
                        n = random.randint(1,6)
                        print(n,end='')
                        time.sleep(.00001)
        except KeyboardInterrupt:
                print("Your Number is :",n)
                ans=input("Play More? (Y) :")
                if ans.lower()!='y':
                        play='n'
                        break
```

OUTPUT

```
4Your Number is : 4
Play More? (Y) :y
Your Number is : 3
Play More? (Y) :y
Your Number is : 2
Play More? (Y) :n
```

Date : Experiment No: 13

Program 1: Program to implement Stack in Python using List

```
def isEmpty(S):
    if len(S)==0:
        return True
    else:
        return False

def Push(S,item):
    S.append(item)
    top=len(S)-1

def Pop(S):
    if isEmpty(S):
        return "Underflow"
    else:
        val = S.pop()
        if len(S)==0:
            top=None
        else:
            top=len(S)-1
        return val

def Peek(S):
    if isEmpty(S):
        return "Underflow"
    else:
        top=len(S)-1
        return S[top]

def Show(S):
    if isEmpty(S):
        print("Sorry No items in Stack ")
    else:
        t = len(S)-1
        print("(Top)",end=' ')
        while(t>=0):
            print(S[t],"<==",end=' ')
            t-=1
        print()
```

```
# main begins here
S=[]          #Stack
top=None
while True:
        print("**** STACK DEMONSTRATION ******")
        print("1. PUSH ")
        print("2. POP")
        print("3. PEEK")
        print("4. SHOW STACK ")
        print("0. EXIT")
        ch = int(input("Enter your choice :"))
        if ch==1:
                val = int(input("Enter Item to Push :"))
                Push(S,val)
        elif ch==2:
                val = Pop(S)
                if val=="Underflow":
                        print("Stack is Empty")
                else:
                        print("\nDeleted Item was :",val)
        elif ch==3:
                val = Peek(S)
                if val=="Underflow":
                        print("Stack Empty")
                else:
                        print("Top Item :",val)
        elif ch==4:
                Show(S)
        elif ch==0:
                print("Bye")
                break
```

OUTPUT

```
**** STACK DEMONSTRATION ******
1. PUSH
2. POP
3. PEEK
4. SHOW STACK
0. EXIT
Enter your choice :1
Enter Item to Push :10
```

Cont…

```
**** STACK DEMONSTRATION ******
1. PUSH
2. POP
3. PEEK
4. SHOW STACK
0. EXIT
Enter your choice :1
Enter Item to Push :20

**** STACK DEMONSTRATION ******
1. PUSH
2. POP
3. PEEK
4. SHOW STACK
0. EXIT
Enter your choice :1
Enter Item to Push :30

**** STACK DEMONSTRATION ******
1. PUSH
2. POP
3. PEEK
4. SHOW STACK
0. EXIT
Enter your choice :4
(Top) 30 <== 20 <== 10 <==

**** STACK DEMONSTRATION ******
1. PUSH
2. POP
3. PEEK
4. SHOW STACK
0. EXIT
Enter your choice :3
Top Item : 30

**** STACK DEMONSTRATION ******
1. PUSH
2. POP
3. PEEK
4. SHOW STACK
0. EXIT
Enter your choice :2

Deleted Item was : 30
```

```
**** STACK DEMONSTRATION ******
1. PUSH
2. POP
3. PEEK
4. SHOW STACK
0. EXIT
Enter your choice :4
(Top) 20 <== 10 <==

**** STACK DEMONSTRATION ******
1. PUSH
2. POP
3. PEEK
4. SHOW STACK
0. EXIT
Enter your choice :0
Bye
```

Date : Experiment No: 14

Program 1: Program to implement Queue in Python using List

```
def isEmpty(Q):
    if len(Q)==0:
        return True
    else:
        return False

def Enqueue(Q,item):
    Q.append(item)
    if len(Q)==1:
        front=rear=0
    else:
        rear=len(Q)-1
def Dequeue(Q):
    if isEmpty(Q):
        return "Underflow"
    else:
        val = Q.pop(0)
    if len(Q)==0:
        front=rear=None
    return val
def Peek(Q):
    if isEmpty(Q):
        return "Underflow"
    else:
        front=0
        return Q[front]
def Show(Q):
    if isEmpty(Q):
        print("Sorry No items in Queue ")
    else:
        t = len(Q)-1
        print("(Front)",end=' ')
        front = 0
        i=front
        rear = len(Q)-1
        while(i<=rear):
            print(Q[i],"==>",end=' ')
            i+=1
        print()
```

Cont…

```
Q=[]          #Queue
front=rear=None
while True:
        print("**** QUEUE DEMONSTRATION ******")
        print("1. ENQUEUE ")
        print("2. DEQUEUE")
        print("3. PEEK")
        print("4. SHOW QUEUE ")
        print("0. EXIT")
        ch = int(input("Enter your choice :"))
        if ch==1:
                val = int(input("Enter Item to Insert :"))
                Enqueue(Q,val)
        elif ch==2:
                val = Dequeue(Q)
                if val=="Underflow":
                        print("Queue is Empty")
                else:
                        print("\nDeleted Item was :",val)
        elif ch==3:
                val = Peek(Q)
                if val=="Underflow":
                        print("Queue Empty")
                else:
                        print("Front Item :",val)
        elif ch==4:
                Show(Q)
        elif ch==0:
                print("Bye")
                break
```

OUTPUT

```
**** QUEUE DEMONSTRATION ******
1. ENQUEUE
2. DEQUEUE
3. PEEK
4. SHOW QUEUE
0. EXIT
Enter your choice :1
Enter Item to Insert :10
**** QUEUE DEMONSTRATION ******
1. ENQUEUE
2. DEQUEUE
3. PEEK
4. SHOW QUEUE
0. EXIT
Enter your choice :1
```

Cont…

```
Enter Item to Insert :20
**** QUEUE DEMONSTRATION ******
1. ENQUEUE
2. DEQUEUE
3. PEEK
4. SHOW QUEUE
0. EXIT
Enter your choice :1
Enter Item to Insert :30
**** QUEUE DEMONSTRATION ******
1. ENQUEUE
2. DEQUEUE
3. PEEK
4. SHOW QUEUE
0. EXIT
Enter your choice :4
(Front) 10 ==> 20 ==> 30 ==>
**** QUEUE DEMONSTRATION ******
1. ENQUEUE
2. DEQUEUE
3. PEEK
4. SHOW QUEUE
0. EXIT
Enter your choice :3
Front Item : 10
**** QUEUE DEMONSTRATION ******
1. ENQUEUE
2. DEQUEUE
3. PEEK
4. SHOW QUEUE
0. EXIT
Enter your choice :2
Deleted Item was : 10
**** QUEUE DEMONSTRATION ******
1. ENQUEUE
2. DEQUEUE
3. PEEK
4. SHOW QUEUE
0. EXIT
Enter your choice :4
(Front) 20 ==> 30 ==>
**** QUEUE DEMONSTRATION ******
1. ENQUEUE
2. DEQUEUE
3. PEEK
4. SHOW QUEUE
0. EXIT
Enter your choice :0
Bye
```

Date : Experiment No: 15

Program 1: Program to take 10 sample phishing email, and find the most common word occurring

```
#Program to take 10 sample phishing mail
#and count the most commonly occuring word
phishingemail=[
        "jackpotwin@lottery.com",
        "claimtheprize@mymoney.com",
        "youarethewinner@lottery.com",
        "luckywinner@mymoney.com",
        "spinthewheel@flipkart.com",
        "dealwinner@snapdeal.com"
        "luckywinner@snapdeal.com"
        "luckyjackpot@americanlottery.com"
        "claimtheprize@lootolottery.com"
        "youarelucky@mymoney.com"
        ]
myd={}
for e in phishingemail:
        x=e.split('@')
        for w in x:
                if w not in myd:
                        myd[w]=1
                else:
                        myd[w]+=1
key_max = max(myd,key=myd.get)
print("Most Common Occuring word is :",key_max)
```

OUTPUT

Most Common Occuring word is : mymoney.com

Date : Experiment No: 16

Program 1: Program to create 21 Stick Game so that computer always wins

Rule of Game (Total Sticks = 21):

1) User and Computer both can pick stick one by one
2) Maximum stick both can pick is 4 i.e. 1 to 4
3) Anyone with last stick will be the looser

```
def PrintStick(n):
        print("o "*n)
        print("| "*n)
        print("| "*n)
        print("| "*n)
        print("| "*n)
TotalStick=21
win=False
humanPlayer=True
print("==== Welcome To Stick Picking Game :: Computer Vs User =====")
print("Rule: 1) Both User and Computer can pick sticks between 1 to 4 at a time")
print("      2) Whosoever picks the last stick will be the looser")
print("==== Lets Begin ======")
playerName = input("Enter Your Name :")
userPick=0
PrintStick(TotalStick)
while win==False:
    if humanPlayer==True:
        print("You Can Pick stick between 1 to 4")
        userPick=0
        while userPick<=0 or userPick>4:
            userPick = int(input(playerName +": Enter Number of Stick to Pick"))
        TotalStick=TotalStick - userPick
        humanPlayer=False
        PrintStick(TotalStick)
        print("*"*60)
        input("Press any key...")
    else:
        computerPick = (5-userPick)
        print("Computer Picks : ",computerPick," Sticks ")
        TotalStick=TotalStick -computerPick
        PrintStick(TotalStick)
        if TotalStick==1:
            print("## WINNER : COMPUTER ##")
            win=True
        print("*"*60)
        input("Press any key...")
        humanPlayer=True
```

OUTPUT

```
==== Welcome To Stick Picking Game :: Computer Vs User =====
Rule: 1) Both User and Computer can pick sticks between 1 to 4 at a time
      2) Whosoever picks the last stick will be the looser
==== Lets Begin ======
Enter Your Name :RAJ
o o o o o o o o o o o o o o o o o o o o o o o
| | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | |
You Can Pick stick between 1 to 4
RAJ: Enter Number of Stick to Pick3
o o o o o o o o o o o o o o o o o o o o o
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
************************************************************
Press any key...
Computer Picks :  2  Sticks
o o o o o o o o o o o o o o o o o o o o o
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
************************************************************
Press any key...
You Can Pick stick between 1 to 4
RAJ: Enter Number of Stick to Pick4
o o o o o o o o o o o o o o o o o
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
************************************************************
Press any key...
Computer Picks :  1  Sticks
o o o o o o o o o o o o o o o
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
************************************************************
Press any key...
You Can Pick stick between 1 to 4
RAJ: Enter Number of Stick to Pick2
o o o o o o o o o
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
```

```
************************************************************
Press any key...
Computer Picks :  3  Sticks
o o o o o o
| | | | | |
| | | | | |
| | | | | |
| | | | | |
************************************************************
Press any key...
You Can Pick stick between 1 to 4
RAJ: Enter Number of Stick to Pick3
o o o
| | |
| | |
| | |
| | |
************************************************************
Press any key...
Computer Picks :  2  Sticks
o
|
|
|
|
## WINNER : COMPUTER ##
************************************************************
Press any key...
```

Date : Experiment No: 17

Program 1: Program to connect with database and store record of employee and display records.

```
import mysql.connector as mycon
con = mycon.connect(host='127.0.0.1',user='root',password="admin")
cur = con.cursor()
cur.execute("create database  if not exists company")
cur.execute("use company")
cur.execute("create table if not exists employee(empno int, name varchar(20), dept
varchar(20),salary int)")
con.commit()
choice=None
while choice!=0:
        print("1. ADD RECORD ")
        print("2. DISPLAY RECORD ")
        print("0. EXIT")
        choice = int(input("Enter Choice :"))
        if choice == 1:
                e = int(input("Enter Employee Number :"))
                n = input("Enter Name :")
                d = input("Enter Department :")
                s = int(input("Enter Salary :"))
                query="insert into employee values({},'{}','{}',{})".format(e,n,d,s)
                cur.execute(query)
                con.commit()
                print("## Data Saved ##")
        elif choice == 2:
                query="select * from employee"
                cur.execute(query)
                result = cur.fetchall()
                print("%10s"%"EMPNO","%20s"%"NAME","%15s"%"DEPARTMENT",
                 "%10s"%"SALARY")
                for row in result:
                        print("%10s"%row[0],"%20s"%row[1],"%15s"%row[2],"%10s"%row[3])
        elif choice==0:
                con.close()
                print("## Bye!! ##")
        else:
                print("## INVALID CHOICE ##")
```

OUTPUT

```
1. ADD RECORD
2. DISPLAY RECORD
0. EXIT
Enter Choice :1
Enter Employee Number :1
Enter Name :AMIT
Enter Department :SALES
Enter Salary :9000
## Data Saved ##
1. ADD RECORD
2. DISPLAY RECORD
0. EXIT
Enter Choice :1
Enter Employee Number :2
Enter Name :NITIN
Enter Department :IT
Enter Salary :80000
## Data Saved ##
1. ADD RECORD
2. DISPLAY RECORD
0. EXIT
Enter Choice :2
    EMPNO              NAME     DEPARTMENT     SALARY
        1              AMIT             SALES       9000
        2             NITIN                IT      80000
1. ADD RECORD
2. DISPLAY RECORD
0. EXIT
Enter Choice :0
## Bye!! ##
```

Date : Experiment No: 18

Program 1: Program to connect with database and search employee number in table employee and display record, if empno not found display appropriate message.

```
import mysql.connector as mycon
con = mycon.connect(host='127.0.0.1',user='root',password="admin",
      database="company")
cur = con.cursor()
print("#"*40)
print("EMPLOYEE SEARCHING FORM")
print("#"*40)
print("\n\n")
ans='y'
while ans.lower()=='y':
      eno = int(input("ENTER EMPNO TO SEARCH :"))
      query="select * from employee where empno={}".format(eno)
      cur.execute(query)
      result = cur.fetchall()
      if cur.rowcount==0:
            print("Sorry! Empno not found ")
      else:
            print("%10s"%"EMPNO", "%20s"%"NAME","%15s"%"DEPARTMENT",
            "%10s"%"SALARY")
            for row in result:
                  print("%10s"%row[0],"%20s"%row[1],"%15s"%row[2],"%10s"%row[3])
      ans=input("SEARCH MORE (Y) :")
```

OUTPUT

```
########################################
EMPLOYEE SEARCHING FORM
########################################


ENTER EMPNO TO SEARCH :1
   EMPNO              NAME     DEPARTMENT     SALARY
       1              AMIT          SALES       9000
SEARCH MORE (Y) :y
ENTER EMPNO TO SEARCH :2
   EMPNO              NAME     DEPARTMENT     SALARY
       2             NITIN             IT      80000
SEARCH MORE (Y) :y
ENTER EMPNO TO SEARCH :4
Sorry! Empno not found
SEARCH MORE (Y) :n
```

Date : Experiment No: 19

Program 1: Program to connect with database and update the employee record of entered empno.

```
import mysql.connector as mycon
con = mycon.connect(host='127.0.0.1',user='root',password="admin",
      database="company")
cur = con.cursor()
print("#"*40)
print("EMPLOYEE UPDATION FORM")
print("#"*40)
print("\n\n")
ans='y'
while ans.lower()=='y':
      eno = int(input("ENTER EMPNO TO UPDATE :"))
      query="select * from employee where empno={}".format(eno)
      cur.execute(query)
      result = cur.fetchall()
      if cur.rowcount==0:
            print("Sorry! Empno not found ")
      else:
            print("%10s"%"EMPNO","%20s"%"NAME", "%15s"%"DEPARTMENT",
            "%10s"%"SALARY")
            for row in result:
                  print("%10s"%row[0],"%20s"%row[1],"%15s"%row[2],"%10s"%row[3])
            choice=input("\n## ARE YOUR SURE TO UPDATE ? (Y) :")
            if choice.lower()=='y':
                  print("== YOU CAN UPDATE ONLY DEPT AND SALARY ==")
                  print("== FOR EMPNO AND NAME CONTACT ADMIN ==")
                  d = input("ENTER NEW DEPARTMENT,(LEAVE BLANK IF NOT WANT
TO CHANGE )")
                  if d=="":
                        d=row[2]
                  try:
                        s = int(input("ENTER NEW SALARY,(LEAVE BLANK IF NOT
WANT TO CHANGE ) "))
                  except:
                        s=row[3]
                  query="update employee set dept='{}',salary={} where empno={}".format
(d,s,eno)
                  cur.execute(query)
                  con.commit()
                  print("## RECORD UPDATED ## ")
      ans=input("UPDATE MORE (Y) :")
```

OUTPUT

```
########################################
EMPLOYEE UPDATION FORM
########################################

ENTER EMPNO TO UPDATE :2
   EMPNO            NAME     DEPARTMENT     SALARY
     2            NITIN           IT      90000

## ARE YOUR SURE TO UPDATE ? (Y) :y
== YOU CAN UPDATE ONLY DEPT AND SALARY ==
== FOR EMPNO AND NAME CONTACT ADMIN ==
ENTER NEW DEPARTMENT,(LEAVE BLANK IF NOT WANT TO CHANGE )
ENTER NEW SALARY,(LEAVE BLANK IF NOT WANT TO CHANGE )
## RECORD UPDATED ##
UPDATE MORE (Y) :y

ENTER EMPNO TO UPDATE :2
   EMPNO            NAME     DEPARTMENT     SALARY
     2            NITIN           IT      90000

## ARE YOUR SURE TO UPDATE ? (Y) :y
== YOU CAN UPDATE ONLY DEPT AND SALARY ==
== FOR EMPNO AND NAME CONTACT ADMIN ==
ENTER NEW DEPARTMENT,(LEAVE BLANK IF NOT WANT TO CHANGE )SALES
ENTER NEW SALARY,(LEAVE BLANK IF NOT WANT TO CHANGE )
## RECORD UPDATED ##
UPDATE MORE (Y) :Y

ENTER EMPNO TO UPDATE :2
   EMPNO            NAME     DEPARTMENT     SALARY
     2            NITIN         SALES      90000

## ARE YOUR SURE TO UPDATE ? (Y) :Y
== YOU CAN UPDATE ONLY DEPT AND SALARY ==
== FOR EMPNO AND NAME CONTACT ADMIN ==
ENTER NEW DEPARTMENT,(LEAVE BLANK IF NOT WANT TO CHANGE )
ENTER NEW SALARY,(LEAVE BLANK IF NOT WANT TO CHANGE ) 91000
## RECORD UPDATED ##
UPDATE MORE (Y) :Y

ENTER EMPNO TO UPDATE :2
   EMPNO            NAME     DEPARTMENT     SALARY
     2            NITIN         SALES      91000

## ARE YOUR SURE TO UPDATE ? (Y) :N
UPDATE MORE (Y) :N
```

Date : Experiment No: 20

Program 1: Program to connect with database and delete the record of entered employee number.

```
import mysql.connector as mycon
con = mycon.connect(host='127.0.0.1',user='root',password="admin",
        database="company")
cur = con.cursor()
print("#"*40)
print("EMPLOYEE DELETION FORM")
print("#"*40)
print("\n\n")
ans='y'
while ans.lower()=='y':
        eno = int(input("ENTER EMPNO TO DELETE :"))
        query="select * from employee where empno={}".format(eno)
        cur.execute(query)
        result = cur.fetchall()
        if cur.rowcount==0:
                print("Sorry! Empno not found ")
        else:
                print("%10s"%"EMPNO","%20s"%"NAME", "%15s"%"DEPARTMENT",
                "%10s"%"SALARY")
                for row in result:
                        print("%10s"%row[0],"%20s"%row[1],"%15s"%row[2],"%10s"%row[3])
                choice=input("\n## ARE YOUR SURE TO DELETE ? (Y) :")
                if choice.lower()=='y':
                        query="delete from employee where empno={}".format(eno)
                        cur.execute(query)
                        con.commit()
                        print("=== RECORD DELETED SUCCESSFULLY! ===")
        ans=input("DELETE MORE ? (Y) :")
```

OUTPUT

```
########################################
EMPLOYEE DELETION FORM
########################################

ENTER EMPNO TO DELETE :2
   EMPNO              NAME     DEPARTMENT     SALARY
      2             NITIN          SALES      91000

## ARE YOUR SURE TO DELETE ? (Y) :y
=== RECORD DELETED SUCCESSFULLY! ===
DELETE MORE ? (Y) :y
ENTER EMPNO TO DELETE :2
Sorry! Empno not found
DELETE MORE ? (Y) :n
```