PROGRAM -15 : CREATING A PYTHON PROGRAM TO IMPLEMENT STACK OPERATIONS(LIST)

AIM:

To write a Python program to implement Stack using a list data-structure, to perform the following operations:

(i) To Push an object containing Doc_ID and Doc_name of doctors who specialize in "**ENT**" to the stack.

(ii) To Pop the objects from the stack and display them.

(iii) To display the elements of the stack (after performing PUSH or POP)

PROGRAM:

```
def Push():
    Doc_id=int(input('Enter the Doctor Id:'))
    Doc_Name=input('Enter the Name of the Doctor')
    Mob=int(input('Enter the Mobile Number of the Doctor'))
    Special=input('Enter the Specialization')
    if Special=='Ent':
        Stack.append([Doc_id,Doc_Name])
def Pop():
    if Stack==[]:
        print('Stack is empty')
    else:
        print('The deleted doctor detail is :',stack.pop())

def Display():
    if Stack==[]:
        print('Stack is empty')
    else:
        top=len(Stack)-1
        print(top)
        for i in range(top,-1,-1):
            print(Stack[i])
Stack=[]
ch='y'
print('Performing Stack Operations Using List\n')
while ch=='y' or ch=='Y':
    print()
    print('1.PUSH')
    print('2.POP')
    print('3.Display')
    opt=int(input('Enter Your choice'))
    if opt==1:
        Push()
    elif opt==2:
        Pop()
    elif opt==3:
        Display()
    else:
        print('Invalid Choice,Try Again!!!')
    ch=input('\n Do you want to perform another operation(Y/N)')
```

RESULT:

Thus the above program has been executed successfully and the output is verified.

SAMPLE OUTPUT:

Python Program Executed Output:

```
Performing Stack Operations Using List


1.PUSH
2.POP
3.Display
Enter Your choice1
Enter the Doctor Id:1
Enter the Name of the DoctorAnil
Enter the Mobile Number of the Doctor2345678
Enter the SpecializationEnt

 Do you want to perform another operation(Y/N)y

1.PUSH
2.POP
3.Display
Enter Your choice1
Enter the Doctor Id:2
Enter the Name of the DoctorUsha
Enter the Mobile Number of the Doctor1234567
Enter the SpecializationCardio

 Do you want to perform another operation(Y/N)y

1.PUSH
2.POP
3.Display
Enter Your choice1
Enter the Doctor Id:3
Enter the Name of the DoctorMurali
Enter the Mobile Number of the Doctor21341567
Enter the SpecializationEnt

 Do you want to perform another operation(Y/N)y

1.PUSH
2.POP
3.Display
Enter Your choice3
1
[3, 'Murali']
[1, 'Anil']

 Do you want to perform another operation(Y/N)y

1.PUSH
2.POP
3.Display
Enter Your choice2
The deleted doctor detail is : [3, 'Murali']

 Do you want to perform another operation(Y/N)y

1.PUSH
2.POP
3.Display
Enter Your choice1
Enter the Doctor Id:4
Enter the Name of the DoctorAnu
Enter the Mobile Number of the Doctor456789
Enter the SpecializationEnt

 Do you want to perform another operation(Y/N)y

1.PUSH
2.POP
3.Display
Enter Your choice3
1
[4, 'Anu']
[1, 'Anil']

 Do you want to perform another operation(Y/N)
```

PROGRAM -16 : **CREATING A PYTHON PROGRAM TO IMPLEMENT STACK OPERATIONS (DICTIONARY)**

AIM:

To Write a program, with separate user-defined functions to perform the following operations:

(i) To Create a function **Push(Stk,D)** Where Stack is an empty list and D is Dictionary of Items. from this Dictionary **Push the keys (name of the student) into a stack**, where the corresponding **value (marks) is greater than 70**.

(ii) To Create a Function **Pop(Stk)** , where Stk is a Stack implemented by a list of student names. The function returns the items deleted from the stack.

(iii) To display the elements of the stack (after performing PUSH or POP)using **Display( )**.

PROGRAM:

```
def Push(Stk,D):
    for i in D:
        if D[i]>70:
            Stk.append(i)
def Pop(Stk):
    if Stack==[]:
        return 'Stack is Empty'
    else:
        print('The deleted element is :',end='')
        return Stack.pop()
def Display():
    if Stack==[]:
        print('Stack is Empty')
    else:
        top=len(Stack)-1
        for i in range(top,-1,-1):
            print(Stack[i])
D={}
Stack=[]
ch='y'
print('Performing Stack Operations Using Dictionary\n')
while ch=='y' or ch=='Y':
    print()
    print('1.PUSH')
    print('2.POP')
    print('3.Display')
    opt=int(input('Enter Your choice'))
    if opt==1:
        n=int(input("Enter the number of students Details"))
        for i in range(1,n+1):
            name=input("Enter the name of the Student")
            D[name]=int(input('Enter the marks of {}'.format(name)))

        Push(Stack,D)
    elif opt==2:
        r=Pop(Stack)
        print(r)
    elif opt==3:
        Display()
    else:
        print('Invalid Choice,Try Again!!!')
    ch=input('\n Do you want to perform another operation(Y/N)')
```

RESULT:

Thus the above program has been executed successfully and the output is verified.

SAMPLE OUTPUT:

Python Program Executed Output:

```
Performing Stack Operations Using Dictionary


1.PUSH
2.POP
3.Display
Enter Your choice1
Enter the number of students Details4
Enter the name of the StudentAnu
Enter the marks of Anu78
Enter the name of the StudentArjun
Enter the marks of Arjun56
Enter the name of the StudentAnjali
Enter the marks of Anjali90
Enter the name of the StudentAni
Enter the marks of Ani99

 Do you want to perform another operation(Y/N)y

1.PUSH
2.POP
3.Display
Enter Your choice3
Ani
Anjali
Anu

 Do you want to perform another operation(Y/N)y

1.PUSH
2.POP
3.Display
Enter Your choice3
Ani
Anjali
Anu

 Do you want to perform another operation(Y/N)y

1.PUSH
2.POP
3.Display
Enter Your choice2
The deleted element is :Ani
```

PROGRAM -17 : **CREATING A PYTHON PROGRAM TO INTEGRATE MYSQL WITH PYTHON (CREATING DATABASE AND TABLE)**

AIM:

To write a Python Program to integrate MYSQL with Python to create Database and Table to store the details of employees

PROGRAM:

```
import mysql.connector

def Create_DB():
  Con=mysql.connector.connect(host='localhost',user='root',password='root')
  try:
    if Con.is_connected():
      cur=Con.cursor()
      Q="CREATE DATABASE employees"
      cur.execute(Q)
      print("Employees database created sucessfully")
  except:
      print("Database name already exists")
      Con.close()

def Create_Table():
    Con=mysql.connector.connect(host='localhost',user='root',password='root',database='employees')
    if Con.is_connected():
        cur=Con.cursor()
        Q="CREATE TABLE EMP(ENO INT PRIMARY KEY,ENAME VARCHAR(20),GENDER VARCHAR(3),SALARY INT)"
        cur.execute(Q)
        print("Emp Table created sucessfully")
    else:
        print("Table Name already exists")
        Con.close()

ch='y'
while ch=='y' or ch=='Y':
    print("\nInterfacing Python with Mysql")
    print("1. To Create Database")
    print("2. To Create Table")
    opt=int(input("Enter your choice:"))
    if opt==1:
      Create_DB()
    elif opt==2:
      Create_Table()
    else:
      print("Invalid Choice")
    opt=input("Do you want to perform another operation(y/n):")
```

Result:

Thus, the above Python program has been executed and the output is verified successfully.

Sample Output:

```
Interfacing Python with Mysql
1. To Create Database
2. To Create Table
Enter your choice:1
Employees database created sucessfully
Do you want to perform another operation(y/n):y

Interfacing Python with Mysql
1. To Create Database
2. To Create Table
Enter your choice:2
Emp Table created sucessfully
Do you want to perform another operation(y/n):n
```

PROGRAM -18 :

CREATING A PYTHON PROGRAM TO INTEGRATE MYSQL WITH PYTHON

(INSERTING RECORDS AND DISPLAYING RECORDS)

AIM:

To write a Python Program to integrate MYSQL with Python by inserting records to Emp table and display the records.

PROGRAM:

```
import mysql.connector
con=mysql.connector.connect(host='localhost',username='root',password='root',database='employees')
if con.is_connected():
   cur=con.cursor()
   opt='y'
   while opt=='y':
        No=int(input("Enter Employee Number:"))
        Name=input("Enter Employee Name:")
        Gender=input("Enter Employee Gender(M/F):")
        Salary=int(input("Enter Employee Salary:"))
        Query="INSERT INTO EMP VALUES({},'{}','{}',{})".format(No,Name,Gender,Salary)
        cur.execute(Query)
        con.commit()
        print("Record Stored Successfully")
        opt=input("Do you want to add another employee details(y/n):")

Query="SELECT * FROM EMP";
cur.execute(Query)
data=cur.fetchall()
for i in data:
    print(i)
con.close()
```

Result:

Thus, the above Python program has been executed and the output is verified successfully.

Python Executed Program Output:

```
Enter Employee Number:1
Enter Employee Name:Arun
Enter Employee Gender(M/F):M
Enter Employee Salary:20000
Record Stored Successfully
Do you want to add another employee details(y/n):y
Enter Employee Number:2
Enter Employee Name:Bala
Enter Employee Gender(M/F):M
Enter Employee Salary:25000
Record Stored Successfully
Do you want to add another employee details(y/n):y
Enter Employee Number:3
Enter Employee Name:Bavya
Enter Employee Gender(M/F):F
Enter Employee Salary:27000
Record Stored Successfully
Do you want to add another employee details(y/n):y
Enter Employee Number:4
Enter Employee Name:Saravanan
Enter Employee Gender(M/F):M
Enter Employee Salary:29000
Record Stored Successfully
Do you want to add another employee details(y/n):n
(1, 'Arun', 'M', 20000)
(2, 'Bala', 'M', 25000)
(3, 'Bavya', 'F', 27000)
(4, 'Saravanan', 'M', 29000)
```

PROGRAM -19 :

CREATING A PYTHON PROGRAM TO INTEGRATE MYSQL WITH PYTHON

(SEARCHING AND DISPLAYING RECORDS))

AIM:

To write a Python Program to integrate MYSQL with Python to search an Employee using EMPID and display the record if present in already existing table EMP, if not display the appropriate message.

PROGRAM:

```
import mysql.connector
con=mysql.connector.connect(host='localhost',username='root',password='root',database='employees')
if con.is_connected():
   cur=con.cursor()
   print("*********************************")
   print("Welcome to Employee Search Screen")
   print("*********************************")
   No=int(input("Enter the employee number to search:"))
   Query="SELECT * FROM EMP WHERE EMPID={}".format(No)
   cur.execute(Query)
   data=cur.fetchone()
   if data!=None:
         print(data)
   else:
         print("Record not Found!!!")
con.close()
```

Result:

Thus, the above Python program has been executed and the output is verified successfully.

SAMPLE OUTPUT:

Python Executed Program Output:

```
*********************************
Welcome to Employee Search Screen
*********************************
Enter the employee number to search:2
(2, 'Bala', 'M', 25000)
```

PROGRAM -20 :

CREATING A PYTHON PROGRAM TO INTEGRATE MYSQL WITH PYTHON

((UPDATING RECORDS)

AIM:

To write a Python Program to integrate MYSQL with Python to search an Employee using EMPID and update the Salary of an employee if present in already existing table EMP, if not display the appropriate message.

PROGRAM:

```
import mysql.connector
con=mysql.connector.connect(host='localhost',username='root',password='root',database='employees')
if con.is_connected():
   cur=con.cursor()
   print("****************************************")
   print("Welcome to Employee detail update Screen")
   print("****************************************")
   No=int(input("Enter the employee number to Update:"))
   Query="SELECT * FROM EMP WHERE EMPID={}".format(No)
   cur.execute(Query)
   data=cur.fetchone()
   if data!=None:
          print("Record found details are:")
          print(data)
          ans=input("Do you want to update the Salary of the above employee(y/n)?:")
          if ans=='y' or ans=='Y':
              New_Sal=int(input("Enter the New Salary of an Employee:"))
              Q1="UPDATE EMP SET SALARY={} WHERE EMPID={}".format(New_Sal,No)
              cur.execute(Q1)
              con.commit()
              print("Employee Salary Updated Successfully")
              Q2="SELECT * FROM EMP"
              cur.execute(Q2)
              data=cur.fetchall()
              for i in data:
                  print(i)
   else:
      print("Record not Found!!!")
```

Result:

Thus, the above Python program has been executed and the output is verified successfully.

SAMPLE OUTPUT:

Python Executed Program Output:

```
****************************************
Welcome to Employee detail update Screen
****************************************
Enter the employee number to search:3
Record found details are:
(3, 'BAVYA', 'F', 27000)
Do you want to update the Salary of the above employee(y/n)?:y
Enter the New Salary of an Employee:30000
Employee Salary Updated Successfully
(1, 'Arun', 'M', 20000)
(2, 'Bala', 'M', 25000)
(3, 'BAVYA', 'F', 30000)
(4, 'Saravanan', 'M', 29000)
```