PODDAR BRIO INTERNATIONAL SENIOR SECONDARY SCHOOL

Badlapur

Sub- COMPUTER SCIENCE (083)

Grade-XII CBSE (Sci & Com) **Practical File**

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Practical no 1:

Write a program in python to create age calculator

Python Code:

```
y=int(input("Enter present year"))
yob=int(input("Enter your year of birth"))
m=int(input("Enter present month"))
mob=int(input("Enter your month of birth"))
d=int(input("Enter present day"))
dob=int(input("Enter your date of birth"))
if d>dob:
    days=d-dob
else:
    days=d+30-dob
    m=m-1
if m>mob:
    month=m-mob
else:
    month=m+12-mob
    y=y-1
year=y-yob
print("Your present age is:",year,"years",month,"months",days,"days")
```

On Left page: Stick output window as following image

Output Screen:

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Practical no 2:

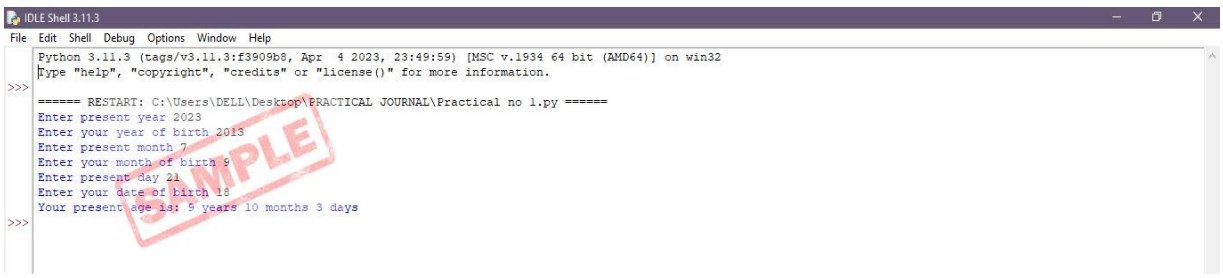
Write a program in python for creating a menu driven program to perform arithmetic operations

Python Code:

```
def add(x, y):
    return x + y


def subtract(x, y):
    return x - y


def multiply(x, y):
    return x * y

def divide(x, y):
    return x / y

print("Choose from below options")
print("1.Add")
print("2.Subtract")
print("3.Multiply")
print("4.Divide")

while True:

    choice = input("Enter choice(1/2/3/4): ")


    if choice in ('1', '2', '3', '4'):

            num1 = float(input("Enter first number: "))
            num2 = float(input("Enter second number: "))
            if choice == '1':
                print(num1, "+", num2, "=", add(num1, num2))
            elif choice == '2':
                print(num1, "-", num2, "=", subtract(num1, num2))
            elif choice == '3':
                print(num1, "*", num2, "=", multiply(num1, num2))
            elif choice == '4':
                print(num1, "/", num2, "=", divide(num1, num2))
else:
    print("Invalid Input")
```

On Left page: Stick output window

Output Screen:



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Practical no 3:

Write a program in python to check whether a given number is Armstrong number

Python Code:

```
no=int(input("Enter any number to check : "))
nol = no
sum = 0
while(no>0):
    ans = no % 10;
    sum = sum + (ans * ans * ans)
    no = int (no / 10)
if sum == nol:
    print("Armstrong Number")
else:
    print("Not an Armstrong Number")
```

On Left page: Stick output window

Output Screen:

On Right page

Practical no 4:

Write a program in python to implement mathematical functions

Python Code:

```
"""To write a Python program to implement python mathematical functions to find:
(i) To find Square of a Number.
(ii) To find Log of a Number(i.e. Log10)
(iii) To find Quad of a Number """

import math
def square(num):
    s=math.pow(num,2)
    return s

def log(num):
    s=math.log10(num)
    return s

def quad(x,y):
    s=math.sqrt(x**2+y**2)
    return s

print("THE SQUARE OF A NUMBER IS:",square(5))
print("THE LOG OF A NUMBER IS:",log(10))
print("THE QUAD OF A NUMBER IS :",quad(1,2))
```

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Output Screen:

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Practical no 5:

Write a program in python to create a dice game

Python Code:

```
import random
while True:
    choice=input("Do you want to roll the dice?(y/n):")
    no=random.randint(1,6)
    if choice=='y':
        print("Dice is rolling.......")
        print("Your number is:",no)
    else:
        print("Game Ended")
        break
```

'

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Output Screen:

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Practical no 6:

Write a program to convert a number to other base number system

Python Code:

```
while True:
    print("****************************************")
    a=int(input("Enter a number to be converted: "))
    def num_to_other():
        print("First number",a,"presented in decimal:",(a))
        print("Converting",a,"to octal:",oct(a))
        print("Converting",a, "to binary:",bin(a))
        print("Converting",a,"to Hexadecimal:",hex(a))
    num_to_other()
    print("****************************************")

    b = input("Do you wanna try with another number(y/n): ")
    if b == 'y' or b=="Y" or b=="YES" or b=="yes":
        continue
    else:
        print("Thank you!!")
        break
```

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Output Screen:

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Practical no 7:

Write a program to create a python program to read a text file line by line and display each word separated by "$"

Python Code:

```
f=open("demo.txt")
a=f.readlines()
for line in a:
    words=line.split()
    for i in words:
        print(i+'$',end=' ')
        print(" ")
f.close()
```

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Practical no 8:

Write a program in python to count number of words in data file

Python Code:

```
file1=open("demo.txt","r")
line=" "
count=0
while line:
    line=file1.readline()
    s=line.split()
    for word in s:
        count+=1
print("Number of words=",count)
file1.close()
```

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Output Screen:

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Practical no 9:

Write a python program to create and search records in binary file

Python Code:

```
import pickle
def create_file_binary():
    myfile=open("studentsdata.dat",'wb')
    records=[]
    x=5
    while(x==5):
        r_no=int(input("ENTER YOUR ROLL NO:"))
        name=input("ENTER YOUR NAME:")
        grade=input("ENTER YOUR GRADE :")
        data=(r_no,name,grade)
        records.append(data)
        a=input("DO YOU WANT TO ADD MORE NAMES?(y/n):")
        if a=='n':
            break
    pickle.dump(records,myfile)
    print("DATA ENTERED SUCCESSFULLY......\n\n")
    myfile.close()
create_file_binary()

def read():
    print("Available data in file is:")
    myfile=open("studentsdata.dat",'rb')
    a=pickle.load(myfile)
    for i in a:
        print(i)
read()


def search():
    myfile=open("studentsdata.dat",'rb')
    a=pickle.load(myfile)
    list=0
    s=int(input("\n Enter roll no to search:"))
    for i in a:
        if s==i[0]:
            print("\n Record found")
            print("Roll no is:",i[0])
            print("Name of student is:",i[1])
            print("Grade is:",i[2])
'
            list=1
            break
    if list==0:
        print("NO RECORD FOUND")
    myfile.close()
search()
```

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Output Screen:

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Practical no 10:

Write a Python Program to Create and Update/ Modify Records in Binary File

```
import pickle
def write():
    f=open("Marks.dat",'wb')
    record=[]
    x=20
    while(x==20):
        roll_no=int(input("Enter Students Rollno.:"))
        name=input("Enter a Student name")
        percentage=int(input("Enter Students percentage:"))
        data=[roll_no,name,percentage]
        record.append(data)
        ch=input("Do you want to enter more names?(y/n):")
        if ch=='n' or ch=='N':
            break
    pickle.dump(record,f)
    f.close()
write()

def read():
    f=open("Marks.dat",'rb')
    s=pickle.load(f)
    print("\n======================")
    print("Updated Record is:")
    for i in s:
        roll_no=i[0]
        name=i[1]
        percentage=i[2]
        print(roll_no,name,percentage)

    f.close()


def update():
    f=open("Marks.dat",'rb+')
    s=pickle.load(f)
    found=0
    roll_change=int(input("\nEnter Roll no. u want to change:"))
    for i in s:
        if roll_change==i[0]:
            print("\nCurrent name is:",i[1])
            i[1]=input("Enter new name: ")
            found=1
            break
    if found==0:
        print("\nRECORD NOT FOUND...")
    else:
        f.seek(0)
        pickle.dump(s,f)
    f.close()

update()
read()
```

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Output Screen:

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Practical no 11:

Write a python program to create and search records in CSV file

Python Code:

```
from csv import writer
def f_write():
    f=open("EMP.csv",'w')
    dt=writer(f)
    dt.writerow(["Empno","EmpName","Salary"])
    f.close()
f_write()

#Insert records in CSV file

import csv
def write():
    f=open("EMP.csv",'w',newline="\n")
    emp_writer=csv.writer(f)
    emp_rec=[]
    while True:
        e=int(input("Enter Employee ID:"))
        n=input("Enter Name of Employee: ")
        s=input("Enter Salary of Employee: ")
        lst=[e,n,s]
        emp_rec.append(lst)
        ch=input("DO YOU WANT TO CONTINUE?(y/n): ")
        if ch=="N" or ch=='n':
            break
    emp_writer.writerows(emp_rec)
    f.close()
    print("ALL THE DATA HAS BEEN ADDED....\n\n")
write()

def Search():
    f=open("EMP.csv",'r',newline='\r\n')
    c=int(input("\nEnter Employee ID to search:"))
    found=0
    row=csv.reader(f)
    for data in row:
        if data[0]==str(c):
            print("Employee Details are:")
            print("============================")
            print("Employee ID:",data[0])
            print("Name:",data[1])
            print("Salary:",data[2])
            print("============================")
            found=1

            break
    if found==0:
        print("The searched Employee number is not Found")
    f.close()
Search()
```

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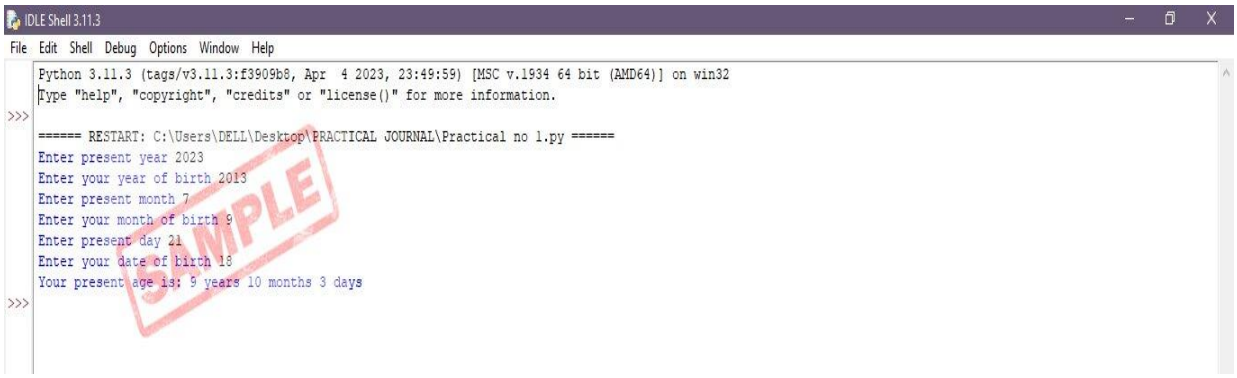
Output Screen:



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Practical no 12:

Write a Python program to implement Stack operation

Python Code:

```
def push(s,val):
    s.append(val)

def pop(s):
    val=s.pop()
    print("\n The deleted element is:",val)

def peek(s):
    index =len(s)-1
    print("\n The top element of stack is:",s[index])

def show(s):
    print("\n The stack elements are:")
    for i in range (len(s)-1,-1,-1):
        print(s[i])

s=[]
while True:
    print("\nStack Operations")
    print("***************************")
    print("1.PUSH ")
    print("2.POP ")
    print("3.PEEK ")
    print("4.SHOW STACK ")
    print("5.EXIT ")
    print("***************************")
    ch=int(input("Enter your choice: "))
    if ch==1:
        val=int(input("\n Enter the element which you want to push:"))
        push(s,val)

    elif ch==2:
        if len(s)==0:
            print("Stack is EMPTY....")
        else:
            pop(s)

    elif ch==3:
        if len(s)==0:
            print("Stack is EMPTY...")
        else:
            peek(s)

    elif ch==4:
        if len(s)==0:
            print("Stack is EMPTY...")
        else:
            show(s)

    elif ch==5:
        print("\nBYE")

        break
    else:
        print("\n INVALID INPUT")
```

Output Screen:

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Practical no 13:

Use MySQL commands to create Student details table in School Database

Code:

mysql> create database SCHOOL;

mysql> use school;

mysql> create table studentdetails (S_ID integer primary key, S_Name char(15),S_Surname char(20), Class integer,S_Address varchar(50));

mysql> show tables;

mysql> desc studentdetails;

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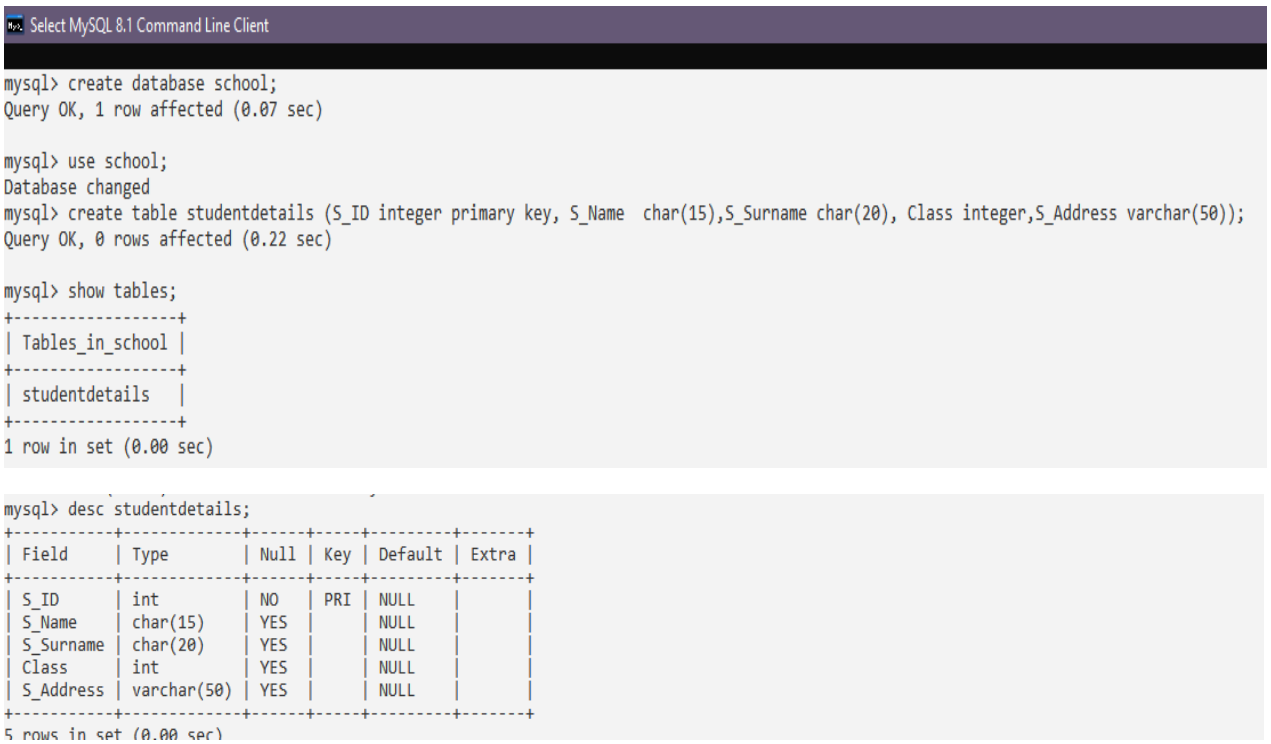
Output Screen:



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Practical no 14:

Use MySQL commands on Students details table to:

i) Insert 5 records.

Code:

i) Insert 5 records.

mysql> insert into studentdetails
values(101,"Arav","Sharma",12,"Thane"),(102,"Chitra","Patel",12,"Thane"),(103,"Tanvi",

"Patil",12,"Kalyan"),(104,"Prasant","Mishra",12,"Badlapur"),(105,"Naren","Kumar",12,"Navi Mumbai");

mysql> select * from studentdetails;

On Left page: Stick output window

Output Screen:

```
mysql> insert into studentdetails values(101,"Arav","Sharma",12,"Thane"),(102,"Chitra","Patel",12,"Thane"),(103,"Tanvi",
"Patil",12,"Kalyan"),(104,"Prasant","Mishra",12,"Badlapur"),(105,"Naren","Kumar",12,"Navi Mumbai");
Query OK, 5 rows affected (0.21 sec)
Records: 5  Duplicates: 0  Warnings: 0

mysql> select * from studentdetails;
+------+---------+-----------+-------+-------------+
| S_ID | S_Name  | S_Surname | Class | S_Address   |
+------+---------+-----------+-------+-------------+
|  101 | Arav    | Sharma    |    12 | Thane       |
|  102 | Chitra  | Patel     |    12 | Thane       |
|  103 | Tanvi   | Patil     |    12 | Kalyan      |
|  104 | Prasant | Mishra    |    12 | Badlapur    |
|  105 | Naren   | Kumar     |    12 | Navi Mumbai |
+------+---------+-----------+-------+-------------+
5 rows in set (0.00 sec)
```

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Use MySQL commands on Students details table to:

ii) Update table by modifying records

Code:

```
mysql> select * from studentdetails;
mysql> update studentdetails set class=11 where s_id=103;
mysql> select * from studentdetails;
```

On Left page: Stick output window

Output Screen:

```
mysql> select * from studentdetails;
+------+---------+-----------+-------+-------------+
| S_ID | S_Name  | S_Surname | Class | S_Address   |
+------+---------+-----------+-------+-------------+
|  101 | Arav    | Sharma    |    12 | Thane       |
|  102 | Chitra  | Patel     |    12 | Thane       |
|  103 | Tanvi   | Patil     |    12 | Kalyan      |
|  104 | Prasant | Mishra    |    12 | Badlapur    |
|  105 | Naren   | Kumar     |    12 | Navi Mumbai |
+------+---------+-----------+-------+-------------+
5 rows in set (0.00 sec)

mysql> update studentdetails set class=11 where s_id=103;
Query OK, 1 row affected (0.25 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> select * from studentdetails;
+------+---------+-----------+-------+-------------+
| S_ID | S_Name  | S_Surname | Class | S_Address   |
+------+---------+-----------+-------+-------------+
|  101 | Arav    | Sharma    |    12 | Thane       |
|  102 | Chitra  | Patel     |    12 | Thane       |
|  103 | Tanvi   | Patil     |    11 | Kalyan      |
|  104 | Prasant | Mishra    |    12 | Badlapur    |
|  105 | Naren   | Kumar     |    12 | Navi Mumbai |
+------+---------+-----------+-------+-------------+
5 rows in set (0.00 sec)
```

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Use MySQL commands on Students details table to:

iii) Order by to display data in descending order

Code:

```
mysql> select * from studentdetails;
mysql> select * from studentdetails order by s_name desc;
```

On Left page: Stick output window

Output Screen:

```
mysql> select * from studentdetails;
+------+---------+-----------+-------+-------------+
| S_ID | S_Name  | S_Surname | Class | S_Address   |
+------+---------+-----------+-------+-------------+
|  101 | Arav    | Sharma    |    12 | Thane       |
|  102 | Chitra  | Patel     |    12 | Thane       |
|  103 | Tanvi   | Patil     |    11 | Kalyan      |
|  104 | Prasant | Mishra    |    12 | Badlapur    |
|  105 | Naren   | Kumar     |    12 | Navi Mumbai |
+------+---------+-----------+-------+-------------+
5 rows in set (0.00 sec)

mysql> select * from studentdetails order by s_name desc;
+------+---------+-----------+-------+-------------+
| S_ID | S_Name  | S_Surname | Class | S_Address   |
+------+---------+-----------+-------+-------------+
|  103 | Tanvi   | Patil     |    11 | Kalyan      |
|  104 | Prasant | Mishra    |    12 | Badlapur    |
|  105 | Naren   | Kumar     |    12 | Navi Mumbai |
|  102 | Chitra  | Patel     |    12 | Thane       |
|  101 | Arav    | Sharma    |    12 | Thane       |
+------+---------+-----------+-------+-------------+
5 rows in set (0.00 sec)
```

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Use MySQL commands on Students details table to:

iv) Alter table to modify column definition

Python Code:

mysql> desc studentdetails;

mysql> alter table studentdetails modify s_name char(12) not null;

mysql> desc studentdetails;

On Left page: Stick output window

Output Screen:

```
mysql> desc studentdetails;
+-----------+-------------+------+-----+---------+-------+
| Field     | Type        | Null | Key | Default | Extra |
+-----------+-------------+------+-----+---------+-------+
| S_ID      | int         | NO   | PRI | NULL    |       |
| S_Name    | char(15)    | YES  |     | NULL    |       |
| S_Surname | char(20)    | YES  |     | NULL    |       |
| Class     | int         | YES  |     | NULL    |       |
| S_Address | varchar(50) | YES  |     | NULL    |       |
+-----------+-------------+------+-----+---------+-------+
5 rows in set (0.00 sec)

mysql> alter table studentdetails modify s_name char(12) not null;
Query OK, 5 rows affected (0.20 sec)
Records: 5  Duplicates: 0  Warnings: 0

mysql> desc studentdetails;
+-----------+-------------+------+-----+---------+-------+
| Field     | Type        | Null | Key | Default | Extra |
+-----------+-------------+------+-----+---------+-------+
| S_ID      | int         | NO   | PRI | NULL    |       |
| s_name    | char(12)    | NO   |     | NULL    |       |
| S_Surname | char(20)    | YES  |     | NULL    |       |
| Class     | int         | YES  |     | NULL    |       |
| S_Address | varchar(50) | YES  |     | NULL    |       |
+-----------+-------------+------+-----+---------+-------+
5 rows in set (0.00 sec)
```

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Practical no 15:

To use MySQL commands on Employee details table in AB Company Database to:

i) To insert 5 records in the table

Python Code:

mysql> create database ABCompany;

mysql> use ABCompany;

mysql> create table employee(emp_Id integer primary key,emp_Name char(20),emp_Salary decimal,emp_dep char(10),City char(15));

mysql> insert into employee values(101,"Arav",20000,"CS","Thane"),(102,"Chitra",10000,"IT","Thane"),(103,"Tanvi",50000,"CS","Kalyan"),(104,"Prasant",45000,"ELX","Badlapur"),(105,"Naren",50000,"IT","Navi Mumbai");

On Left page: Stick output window

Output Screen:

```
mysql> create database ABCompany;
Query OK, 1 row affected (0.07 sec)

mysql> use ABCompany;
Database changed
mysql> create table employee(emp_Id integer primary key,emp_Name char(20),emp_Salary decimal,emp_dep char(10),City char(15));
Query OK, 0 rows affected (1.00 sec)

mysql> desc employee;
+------------+---------------+------+-----+---------+-------+
| Field      | Type          | Null | Key | Default | Extra |
+------------+---------------+------+-----+---------+-------+
| emp_Id     | int           | NO   | PRI | NULL    |       |
| emp_Name   | char(20)      | YES  |     | NULL    |       |
| emp_Salary | decimal(10,0) | YES  |     | NULL    |       |
| emp_dep    | char(10)      | YES  |     | NULL    |       |
| City       | char(15)      | YES  |     | NULL    |       |
+------------+---------------+------+-----+---------+-------+
5 rows in set (0.01 sec)
```

```
mysql> insert into employee values(101,"Arav",20000,"CS","Thane"),(102,"Chitra",10000,"IT","Thane"),(103,"Tanvi",50000,"CS","Kalyan
"),(104,"Prasant",45000,"ELX","Badlapur"),(105,"Naren",50000,"IT","Navi Mumbai");
Query OK, 5 rows affected (0.05 sec)
Records: 5  Duplicates: 0  Warnings: 0
```

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To use MySQL commands on Employee details table in AB Company Database to:

ii) Display the record of employee where e_id is 102

Python Code:

mysql> select * from employee;

mysql> select * from employee where emp_id=102;

On Left page: Stick output window

Output Screen:

```
mysql> select * from employee;
+--------+----------+------------+---------+-------------+
| emp_Id | emp_Name | emp_Salary | emp_dep | City        |
+--------+----------+------------+---------+-------------+
|    101 | Arav     |      20000 | CS      | Thane       |
|    102 | Chitra   |      10000 | IT      | Thane       |
|    103 | Tanvi    |      50000 | CS      | Kalyan      |
|    104 | Prasant  |      45000 | ELX     | Badlapur    |
|    105 | Naren    |      50000 | IT      | Navi Mumbai |
+--------+----------+------------+---------+-------------+
5 rows in set (0.00 sec)

mysql> select * from employee where emp_id=102;
+--------+----------+------------+---------+-------+
| emp_Id | emp_Name | emp_Salary | emp_dep | City  |
+--------+----------+------------+---------+-------+
|    102 | Chitra   |      10000 | IT      | Thane |
+--------+----------+------------+---------+-------+
1 row in set (0.00 sec)
```

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To use MySQL commands on Employee details table in AB Company Database to:

iii) To eliminate redundant data from the table

Python Code:

```
mysql> select * from employee;
mysql> select distinct emp_name from employee;
```

On Left page: Stick output window

Output Screen:

```
mysql> select * from employee;
+--------+----------+------------+---------+-------------+
| emp_Id | emp_Name | emp_Salary | emp_dep | City        |
+--------+----------+------------+---------+-------------+
|    101 | Arav     |      20000 | CS      | Thane       |
|    102 | Chitra   |      10000 | IT      | Thane       |
|    103 | Tanvi    |      50000 | CS      | Kalyan      |
|    104 | Prasant  |      45000 | ELX     | Badlapur    |
|    105 | Naren    |      50000 | IT      | Navi Mumbai |
|    106 | Arav     |      20000 | CS      | Thane       |
+--------+----------+------------+---------+-------------+
6 rows in set (0.00 sec)

mysql> select distinct emp_name from employee;
+----------+
| emp_name |
+----------+
| Arav     |
| Chitra   |
| Tanvi    |
| Prasant  |
| Naren    |
+----------+
5 rows in set (0.00 sec)
```

NEW PAGE

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To use MySQL commands on Employee details table in AB Company Database to:

iv) To display record of all employees staying in city starting from “T”

Python Code:

mysql> select * from employee;

mysql> select * from employee where city like "Th%";

On Left page: Stick output window

Output Screen:

```
mysql> select * from employee;
+--------+----------+------------+---------+-------------+
| emp_Id | emp_Name | emp_Salary | emp_dep | City        |
+--------+----------+------------+---------+-------------+
|    101 | Arav     |      20000 | CS      | Thane       |
|    102 | Chitra   |      10000 | IT      | Thane       |
|    103 | Tanvi    |      50000 | CS      | Kalyan      |
|    104 | Prasant  |      45000 | ELX     | Badlapur    |
|    105 | Naren    |      50000 | IT      | Navi Mumbai |
|    106 | Arav     |      20000 | CS      | Thane       |
+--------+----------+------------+---------+-------------+
6 rows in set (0.00 sec)

mysql> select * from employee where city like "Th%";
+--------+----------+------------+---------+-------+
| emp_Id | emp_Name | emp_Salary | emp_dep | City  |
+--------+----------+------------+---------+-------+
|    101 | Arav     |      20000 | CS      | Thane |
|    102 | Chitra   |      10000 | IT      | Thane |
|    106 | Arav     |      20000 | CS      | Thane |
+--------+----------+------------+---------+-------+
3 rows in set (0.43 sec)
```

On Right page

Practical no 16:

To use MySQL commands on Books details table in Library Database to:

i) To get record of book with maximum price

Python Code:

mysql> create database Library;

mysql> use Library;

mysql> create table Books(Book_Id integer primary key,Book_Name char(20),Book_author char(50),Book_price decimal,Category char(15));

mysql> insert into books values(101,"Harry Potter","J.K.Rowling",299.50,"Fiction"),(102,"Whimpy Kid","Jeff Kinney",400,"Fiction"),(103,"Grandma Stories","Sudha Murthy",399,"Fiction"),(104,"Shriman Yogi","Ranjit Desai",600,"Biography"),(105,"Ella Diaries","Meredith Costain",200,"Fiction");

mysql> select * from books;

mysql> select max(book_price) from books;

On Left page: Stick output window

Output Screen:

```
mysql> select * from books;
+---------+-----------------+------------------+------------+-----------+
| Book_Id | Book_Name       | Book_author      | Book_price | Category  |
+---------+-----------------+------------------+------------+-----------+
|     101 | Harry Potter    | J.K.Rowling      |        300 | Fiction   |
|     102 | Whimpy Kid      | Jeff Kinney      |        400 | Fiction   |
|     103 | Grandma Stories | Sudha Murthy     |        399 | Fiction   |
|     104 | Shriman Yogi    | Ranjit Desai     |        600 | Biography |
|     105 | Ella Diaries    | Meredith Costain |        200 | Fiction   |
+---------+-----------------+------------------+------------+-----------+
5 rows in set (0.00 sec)
```

```
mysql> select max(book_price) from books;
+------------------+
| max(book_price) |
+------------------+
|              600 |
+------------------+
1 row in set (0.03 sec)
```

NEW PAGE

On Right page

To use MySQL commands on Books details table in Library Database to:

ii) To get record of book with minimum price according to category

Python Code:

mysql> select * from books;

mysql> select category,min(book_price) from books group by category;

On Left page: Stick output window

Output Screen:

```
mysql> select * from books;
+---------+-----------------+------------------+------------+-----------+
| Book_Id | Book_Name       | Book_author      | Book_price | Category  |
+---------+-----------------+------------------+------------+-----------+
|     101 | Harry Potter    | J.K.Rowling      |        300 | Fiction   |
|     102 | Whimpy Kid      | Jeff Kinney      |        400 | Fiction   |
|     103 | Grandma Stories | Sudha Murthy     |        399 | Fiction   |
|     104 | Shriman Yogi    | Ranjit Desai     |        600 | Biography |
|     105 | Ella Diaries    | Meredith Costain |        200 | Fiction   |
+---------+-----------------+------------------+------------+-----------+
5 rows in set (0.00 sec)
```

```
mysql> select category,min(book_price) from books group by category;
+-----------+-----------------+
| category  | min(book_price) |
+-----------+-----------------+
| Fiction   |             200 |
| Biography |             600 |
+-----------+-----------------+
2 rows in set (0.00 sec)
```

NEW PAGE

On Right page

To use MySQL commands on Books details table in Library Database to:

iii) To count total number of book records

Python Code:

```
mysql> select * from books;
mysql> select count(book_id) from books;
```

On Left page: Stick output window

Output Screen:

```
mysql> select * from books;
+---------+-----------------+-------------------+------------+-----------+
| Book_Id | Book_Name       | Book_author       | Book_price | Category  |
+---------+-----------------+-------------------+------------+-----------+
|     101 | Harry Potter    | J.K.Rowling       |        300 | Fiction   |
|     102 | Whimpy Kid      | Jeff Kinney       |        400 | Fiction   |
|     103 | Grandma Stories | Sudha Murthy      |        399 | Fiction   |
|     104 | Shriman Yogi    | Ranjit Desai      |        600 | Biography |
|     105 | Ella Diaries    | Meredith Costain  |        200 | Fiction   |
+---------+-----------------+-------------------+------------+-----------+
5 rows in set (0.00 sec)
mysql> select count(book_id) from books;
+----------------+
| count(book_id) |
+----------------+
|              5 |
+----------------+
1 row in set (0.00 sec)

mysql>
```

NEW PAGE

On Right page

To use MySQL commands on Books details table in Library Database to:

iv) To get count of total number of books in each category.

Python Code:

mysql> select * from books;

mysql> select category,count(book_id) from books group by category;

On Left page: Stick output window

Output Screen:

```
mysql> select * from books;
+---------+-----------------+-------------------+------------+-----------+
| Book_Id | Book_Name       | Book_author       | Book_price | Category  |
+---------+-----------------+-------------------+------------+-----------+
|     101 | Harry Potter    | J.K.Rowling       |        300 | Fiction   |
|     102 | Whimpy Kid      | Jeff Kinney       |        400 | Fiction   |
|     103 | Grandma Stories | Sudha Murthy      |        399 | Fiction   |
|     104 | Shriman Yogi    | Ranjit Desai      |        600 | Biography |
|     105 | Ella Diaries    | Meredith Costain  |        200 | Fiction   |
+---------+-----------------+-------------------+------------+-----------+
5 rows in set (0.00 sec)
```

```
mysql> select category,count(book_id) from books group by category;
+-----------+----------------+
| category  | count(book_id) |
+-----------+----------------+
| Fiction   |              4 |
| Biography |              1 |
+-----------+----------------+
2 rows in set (0.00 sec)
```

On Right page

Practical no 31:

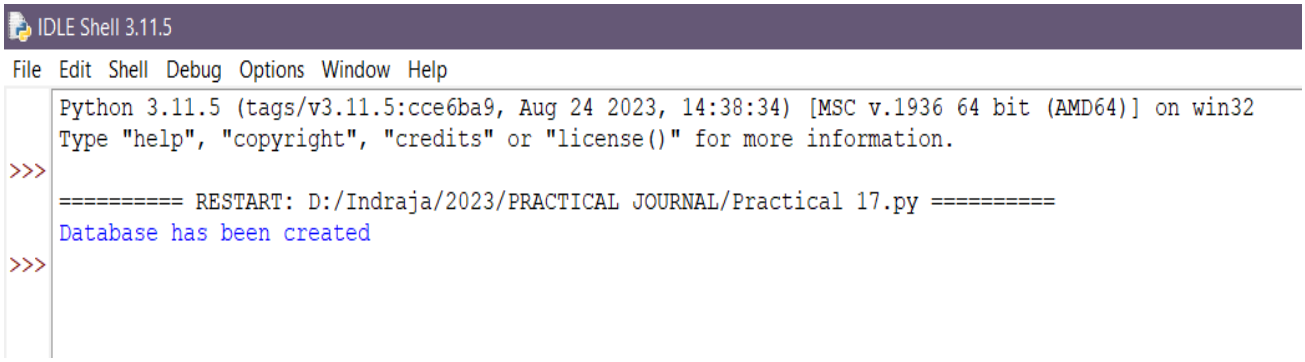
Creating a python program to Integrate MySQL with python (Establishing connection and creating database)

Python Code:

```
#Program to create a database
import mysql.connector
mydb=mysql.connector.connect(host="localhost",user="root", password="1234")
c=mydb.cursor( )
c.execute("create database Employee")
print("Database has been created")
```

On Left page: Stick output window

Output Screen:



SQL OUTPUT:

```
mysql> show databases;
+--------------------+
| Database           |
+--------------------+
| abcompany          |
| employee           |
| information_schema |
| library            |
| mysql              |
| performance_schema |
| sys                |
+--------------------+
7 rows in set (0.00 sec)
```

On Right page

Practical no 18:

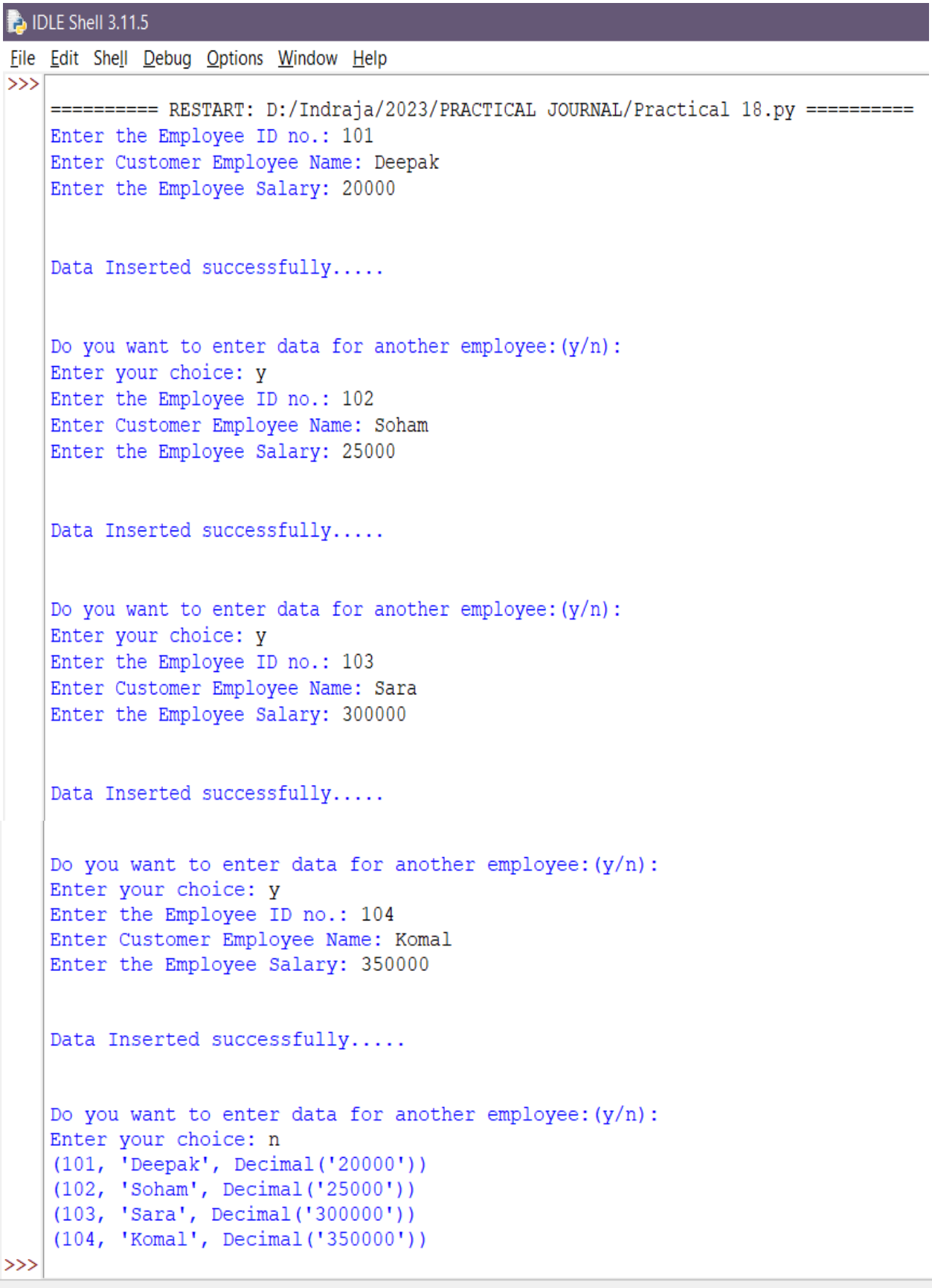
Creating a python program to integrate MySQL with python
(Inserting records and Displaying records)

Python Code:

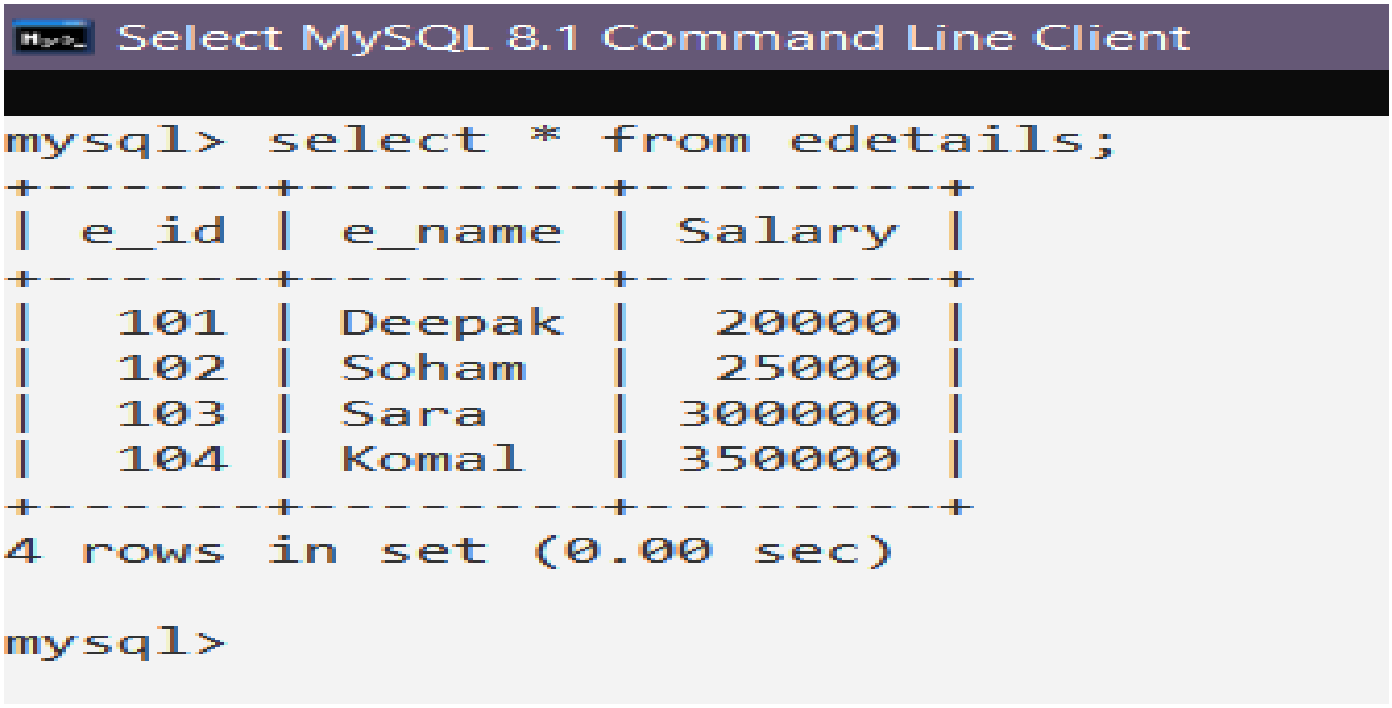
```
import mysql.connector
mydb=mysql.connector.connect(host="localhost",user="root", password="1234",database="employee")
cursor=mydb.cursor( )
cursor.execute("create table Edetails (e_id integer(4) primary key,e_name char(50),Salary decimal)")

while True:
    e=int(input("Enter the Employee ID no.: "))
    n=input("Enter Customer Employee Name: ")
    s=int(input("Enter the Employee Salary: "))
    query="insert into Edetails values({},'{}',{})".format(e,n,s)
    cursor.execute(query)
    mydb.commit( )
    print("\n\nData Inserted successfully.....")
    choice=input("\n\nDo you want to enter data for another employee:(y/n): \nEnter your choice: "))
    if choice=='n' or choice=='N':
        break
cursor.execute("select * from edetails")
data=cursor.fetchall()
for i in data:
    print(i)
```

On Left page: Stick output window

Output Screen:



SQL OUTPUT:


Select MySQL 8.1 Command Line Client
mysql> select * from edetails;
+------+---------+---------+
| e_id | e_name | Salary |
+------+---------+---------+
101	Deepak	20000
102	Soham	25000
103	Sara	300000
104	Komal	350000
+------+---------+---------+
4 rows in set (0.00 sec)
mysql>

On Right page

Practical no 19:

Creating a python program to integrate MySQL with python

(Delete record)

Python Code:

```
import mysql.connector
mydb=mysql.connector.connect(host="localhost",user="root", password="1234",database="employee")
cursor=mydb.cursor( )
print("**********************************")
print("WELCOME TO EMPLOYEE SEARCH SCREEN")
print("**********************************")
s=int(input("Enter the Employee ID to search: "))
print("DELETING THE RECORD....")
query="delete from edetails where e_id={}".format(s)
cursor.execute(query)
mydb.commit()
if cursor.rowcount>0:
    print("Data Deleted Successfully.")
else:
    print("NO DATA FOUND!!!")
```

On Left page: Stick output window

Output Screen:

```
========= RESTART: D:\Indraja\2023\PRACTICAL JOURNAL\Practical no 19.py ========
**********************************
WELCOME TO EMPLOYEE SEARCH SCREEN
**********************************
Enter the Employee ID to search: 101
DELETING THE RECORD....
Data Deleted Successfully.
>>>
```

SQL OUTPUT:

```
mysql> use employee;
Database changed
mysql> select * from edetails;
+------+--------+--------+
| e_id | e_name | Salary |
+------+--------+--------+
|  102 | Soham  |  25000 |
|  103 | Sara   | 300000 |
|  104 | Komal  | 350000 |
+------+--------+--------+
3 rows in set (0.00 sec)
```

On Right page

Practical no 20:

Creating a python program to integrate MySQL with python

(Updating records)

Python Code:

On Left page: Stick output window

```
import mysql.connector
mydb=mysql.connector.connect(host="localhost",user="root", password="1234",database="employee")
cursor=mydb.cursor( )
print("*********************************")
print("WELCOME TO EMPLOYEE DETAILS UPDATE SCREEN")
print("*********************************")
n=int(input("Enter Employee ID: "))
query="select * from edetails where e_id={}".format(n)
cursor.execute(query)
data=cursor.fetchone()
if data!=None:
    print("RECORD FOUND.... DETAILS ARE....")
    print(data)
    choice=input("DO YOU WANT TO UPDATE SALARY OF ABOVE EMPLOYEE (y/n)?: ")
    if choice=='y' or choice=='Y':
        s=int(input("Enter new salary: "))
        query="update edetails set salary={} where e_id={}".format(s,n)
        cursor.execute(query)
        mydb.commit( )
        if cursor.rowcount>0:
            print("Data Updated Successfully..")
else:
    print("NO DATA FOUND..")
```

Output Screen:

```
Python 3.11.5 (tags/v3.11.5:cce6ba9, Aug 24 2023, 14:38:34) [MSC v.1936 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.

= RESTART: D:/Indraja/2023/PRACTICAL JOURNAL/Practical no 20.py
*********************************
WELCOME TO EMPLOYEE DETAILS UPDATE SCREEN
*********************************
Enter Employee ID: 101
NO DATA FOUND..

========= RESTART: D:/Indraja/2023/PRACTICAL JOURNAL/Practical no 20.py ========
*********************************
WELCOME TO EMPLOYEE DETAILS UPDATE SCREEN
*********************************
Enter Employee ID: 102
RECORD FOUND.... DETAILS ARE....
(102, 'Soham', Decimal('25000'))
DO YOU WANT TO UPDATE SALARY OF ABOVE EMPLOYEE (y/n)?: y
Enter new salary: 60000
Data Updated Successfully..
```

SQL OUTPUT

```
mysql> select * from edetails;
+------+---------+---------+
| e_id | e_name  | Salary  |
+------+---------+---------+
|  102 | Soham   |   60000 |
|  103 | Sara    |  300000 |
|  104 | Komal   |  350000 |
+------+---------+---------+
3 rows in set (0.00 sec)
```

On Right page

Practical no 21:

SQL COMMANDS EXERCISE – 1

AIM: To write Queries for the following Questions based on the given table:

Rollno	Name	Gender	Age	Dept	DOA	Fees
1	Arun	M	24	COMPUTER	1997-01-10	120
2	Ankit	M	21	HISTORY	1998-03-24	200
3	Anu	F	20	HINDI	1996-12-12	300
4	Bala	M	19	NULL	1999-07-01	400
5	Charan	M	18	HINDI	1997-09-05	250
6	Deepa	F	19	HISTORY	1997-06-27	300
7	Dinesh	M	22	COMPUTER	1997-02-25	210
8	Usha	F	23	NULL	1997-07-31	200

(a) Write a Query to Create a new database in the name of "STUDENTS"

Sol:

mysql> CREATE DATABASE STUDENTS;

(b) Write a Query to Open the database "STUDENTS"

Sol:

mysql> USE STUDENTS;

(c) Write a Query to create the above table called: Info

Sol:

mysql> create table Info (Rollno integer Primary key, Name varchar(10),Gender varchar(3), Age integer, Dept varchar(15), DOA date, Fees decimal;

(d) Write a Query to list all the existing database names.

Sol:

mysql> SHOW DATABASES;

(e) Write a Query to List all the tables that exists in the current database.

Sol:

mysql> SHOW TABLES;

(f) Write a Query to insert all the rows of above table into Info table.

Sol:

INSERT INTO STU VALUES (1,'Arun','M',

24,'COMPUTER','1997-01-10', 120),

(2,'Ankit','M',

21,'HISTORY','1998-03-24', 200), (3,'Anu','F',

20,'HINDI','1996-12-12', 300), (4,'Bala','M', 19, NULL,'1999-07-

01', 400), (5,'Charan','M', 18,'HINDI','1997-06-27', 250),

(6,'Deepa','F', 19,'HISTORY','1997-06-27', 300), (7,'Dinesh','M',

22,'COMPUTER','1997-02-25', 210), (8,'Usha','F', 23,

NULL,'1997-07-31', 200);

(g) Write a Query to display all the details of the Employees from the above table 'STU'.

Sol:

mysql> SELECT * FROM STU;

(h) Write a query to Rollno, Name and Department of the students from STU table.

Sol:

mysql> SELECT ROLLNO, NAME, DEPT FROM STU;

On Right page

Practical no 22:

SQL COMMANDS EXERCISE – 2

AIM: To write Queries for the following Questions based on the given table:

Rollno	Name	Gender	Age	Dept	DOA	Fees
1	Arun	M	24	COMPUTER	1997-01-10	120
2	Ankit	M	21	HISTORY	1998-03-24	200
3	Anu	F	20	HINDI	1996-12-12	300
4	Bala	M	19	NULL	1999-07-01	400
5	Charan	M	18	HINDI	1997-09-05	250
6	Deepa	F	19	HISTORY	1997-06-27	300
7	Dinesh	M	22	COMPUTER	1997-02-25	210
8	Usha	F	23	NULL	1997-07-31	200

(a) Write a Query to select distinct Department from STU table.

Sol:

```
mysql> SELECT DISTICT(DEPT) FROM STU;
```

(b) To show all information about students of History department.

Sol:

```
mysql>SELECT * FROM STU WHERE DEPT='HISTORY';
```

(c) Write a Query to list name of female students in Hindi Department.

Sol:

```
mysql> SELECT NAME FROM STU WHERE DEPT='HINDI' AND GENDER='F';
```

(d) Write a Query to list name of the students whose ages are between 18 to 20.

Sol:

```
mysql> SELECT NAME FROM STU WHERE AGE BETWEEN 18 AND 20;
```

(e) Write a Query to display the name of the students whose name is starting with 'A'.

Sol:

```
mysql> SELECT NAME FROM STU WHERE NAME LIKE 'A%';
```

(f) Write a query to list the names of those students whose name have second alphabet 'n' in their names.

Sol:

```
mysql> SELECT NAME FROM STU WHERE NAME LIKE '_N%';
```

On Right page

Practical no 23:

SQL COMMANDS EXERCISE – 3

AIM: To write Queries for the following Questions based on the given table:

Rollno	Name	Gender	Age	Dept	DOA	Fees
1	Arun	M	24	COMPUTER	1997-01-10	120
2	Ankit	M	21	HISTORY	1998-03-24	200
3	Anu	F	20	HINDI	1996-12-12	300
4	Bala	M	19	NULL	1999-07-01	400
5	Charan	M	18	HINDI	1997-09-05	250
6	Deepa	F	19	HISTORY	1997-06-27	300
7	Dinesh	M	22	COMPUTER	1997-02-25	210
8	Usha	F	23	NULL	1997-07-31	200

(a) Write a Query to delete the details of Roll number is 3.

Sol:

```
mysql> DELETE FROM STU WHERE ROLLNO=3;
```

(b) Write a Query to change the fess of Student to 170 whose Roll number is 1, if the existing fess is less than 130.

Sol:

```
mysql> UPDATE STU SET FEES=170 WHERE ROLLNO=1 AND FEES<130;
```

(c) Write a Query to add a new column Area of type varchar in table STU.

Sol:

```
mysql> ALTER TABLE STU ADD AREA VARCHAR (20);
```

(d) Write a Query to Display Name of all students whose Department Contains NULL.

Sol:

```
mysql> SELECT NAME FROM STU WHERE DEPT IS NULL;
```

(e) Write a Query to delete Gender Column from the table STU.

Sol:

```
mysql> ALTER TABLE STU DROP  GENDER;
```

(f) Write a Query to delete table stu from Database.

Sol:

```
mysql> DROP TABLE STU;
```

On Right page

Practical no 24:

SQL COMMANDS EXERCISE – 4

AIM: To write Queries for the following Questions based on the given table:

TABLE: STOCK

Pno	Pname	Dcode	Qty	UnitPrice	StockDate
5005	Ball point pen	102	100	10	2021-03-31
5003	Gel pen premium	102	150	15	2021-01-01
5002	Pencil	101	125	4	2021-02-18
5006	Scale	101	200	6	2020-01-01
5001	Eraser	102	210	3	2020-03-19
5004	Sharpner	102	60	5	2020-12-09
5009	Gel pen classic	103	160	8	2022-01-19

TABLE: DEALERS

Dcode	Dname
101	Sakthi Stationeries
103	Classic Stationeries
102	Indian Book House

(a) To display the total Unit price of all the products whose Dcode is 102.

Sol:

```
mysql> SELECT SUM(UNITPRICE) FROM STOCK GROUP BY DCODE HAVING
       DCODE=102;
```

(b) To display details of all products in the stock table in descending order of Stock date.

Sol:

```
mysql> SELECT * FROM STOCK ORDER BY STOCKDATE DESC;
```

(c) To display maximum unit price of products for each dealer individually as per dcode from the table Stock.

Sol:

```
mysql> SELECT DCODE, MAX(UNITPRICE) FROM STOCK GROUP BY DCODE;
```

(d) To display the Pname and Dname from table stock and dealers.

Sol:

```
mysql> SELECT PNAME, DNAME FROM STOCK S, DEALERS D WHERE S. DCODE=D.DCODE;
```