PRACTICAL NOTEBOOK

2021 -2022

TERM 2

Arnav Suman

12 C

TERM-2

37. WAP to enter N elements of integer type in a Linear List and sort the elements using

1) Bubble Sort 2) Selection Sort

38. WAP to enter N elements of integer type in a Linear List and an element of integer type and check whether the list contains that element or not

39. WAP to enter N elements of integer type in a Linear List and an element of integer type and count the occurrence of the element

40. WAP to enter N elements in a List and insert an element at a specific position 41. WAP to enter N sorted elements and insert an element at appropriate position 42. WAP to enter N element in a List and delete an element

43. WAP to delete all the occurrence of the number in a listP to create a 2D Linear List (input and output all the elements in 2D List.

44.Write a menu driven program to perform the following operations in a Linear List

using Stack. 1.Push 2.Pop 3.Display 4.count 5.exit

45. Write a python program to check whether a string is a palindrome or not using stack.

46.Write a program to implement all stack operations (push,pop,peek) for the employee details (empno, name).
47. Create the database product and then create the following table item in it. Column name Itemno Iname Price Quantity

48.Insert the following information in the above table : Data type Number Varchar 15 Number 10,2 Number 3 Size Constrain 3 Primary key

Table: Item

Itemno	Iname	Price	Quantity
101	Soap	50	100
102	Powder	100	50
103	Face cream	150	25
104	Pen	50	200
105	Soap box	20	100

49. Write the following queries based on the above item table : Display all items information.
Display item name and price value.
Display soap information.

Display the item information whose name starts with letter 's'.
Display a report with item number, item name and total price. (total price = price * quantity).
Display item table information in ascending order based upon item name. Display item name and price in descending order based upon price.
Display item name, whose price is in between 50 to 100.
To decrease price value by 5%.

50. Write the following queries based on the above item table : Add new column totalprice with number (10, 2).
Alter the data type of iname as varchar(25)
Fill up totalprice = price * quantity.

Display the item with maximum Price Remove powder information. Remove totalprice column.

Remove whole item table structure.

Remove the database product

51. Write outputs based upon item table

   1. select sum(price) from item;
   2. select avg(price) from item;
   3. select min(price) from item;
   4. select max(price) from item; 5.
   5. select count(price) from item;
   6. select distinct price from item;
   7. select count(distinct price) from item
   8. select iname,price*quantity from item

52. In a database product their are two tables , Write the following Queries :

BRAND:

ICODE	BNAME
100	SONY
200	HP
300	LG
400	SAMSUNG

ITEM:

ICODE	INAME	PRICE
100	TELEVISION	25000
200	COMPUTER	30000
300	REFRIGERATOR	23000
400	CELLPHONE	40000

Write MYSQL queries for the following:
a) To display Iname, price and corresponding Brand name (Bname) of those items,

whose price is between 25000 and 30000 both values inclusive).
b) To display ICode, Price and BName of the item, which has IName as "Television".

c) To increase the Prices of all items by Rs. 10%.
d) To display different unique brand names of all products.

53. Create the table Students with the following specifications :

Column name Adno Name Average Gender Data type Integer Varchar Integer Char
Size Constraints Primary key Scode Integer 4

54. Insert the following information in the above student table:

Students

Adno	Name	Average	Gender	Scode
501	R.Jain	98	M	111
545	Kavita	73	F	333
705	K.Rashika	85	F	111
754	Rahul Goel	60	M	444
892	Sahil Jain	78	M	333
935	Rohan Saini	85	M	222
955	Anjali	64	F	444
983	Sneha Aggarwal	80	F	222

55 Write queries based upon above student table.

1. (i) Display all students' information.
2. (ii) Display Rohan Saini's information.
3. (iii) Display number of students in the table.
4. (iv) Display number of students in each gender.
5. (v) Display students' information in ascending order using name.
6. (vi) Display students' information in descending order using average marks.
7. (vii) Display students' name starting with letter "K".
8. (viii) Display students' information, whose name ends with "l".
9. Display a report with adno,name,average*5 as total marks from student table.
10. Display students' information, whose average marks are in between 80 to 90.
11. 56. Write queries based upon above student table.
12. (i)
13. (ii) (iii) (iv) (v) (vi) (vii) (viii)
14. 57.
15. **table:**
16. Display students' info., who are getting average marks of more than 80 and scode 333.
    Display students' name and average marks, whose scode is 222 and 333.
    Display sum of average marks.
17. Display maximum average marks
    Display minimum average marks.
    Display average marks for each gender.

Display maximum, minimum and sum of average marks in each scode.
Display number of students in each scode

18. **. Write the SQL commands for (i) to (v) on the basis of tables following**

Table: BOOKS

Book_ID	BookName	AuthorName	Publisher	Price	Qty
L01	Maths	Raman	ABC	70	20
L02	Science	Agarkar	DEF	90	15
L03	Social	Suresh	XYZ	85	30
L04	Computer	Sumita	ABC	75	7
L05	Telugu	Nannayya	DEF	60	25

Table: ISSUES

Book_ID	Qty_Issued
L02	13
L04	5
L05	21

19.
20. (i) To show Book name, Author name and Price of books of ABC publisher.
(ii) To display the details of the books in descending order of their price.
(iii) To display the Book Id, Book name, Publisher, Price, Qty, Qty_Issued from both the tables with
their matching Book ID.
(iv) Display minimum price of each publisher with their name.
(v) Display the price of only those books where Qty_issued is 5.
21. 58
Write a menu based program to perform the following operation on Customer Details using Interfacing Python with MySQL
1. Add new record
2. Display all the record
3. Search record based on Cust_Id
22. Customer table has following structure
23. Cust_id
Cust_name Cust_age
DOB
Outstanding Amount
24. Integer Type varchar Thpe Integer Type date Type
25. float type
26. 59.
Write a menu based program to perform the following operation on Customer Details using Interfacing Python with MySQL
1. Update a record based on Cust_id
2. Delete record based on Cust_Id
27. 3. Display all the record
Customer table has following structure
28. Cust_id
Cust_name Cust_age
DOB
Outstanding Amount
29. Integer Type varchar Type Integer Type date Type
30. float type

31. 60 Write a MySQL connectivity program in Python to Create a database school and then create Create a table book with the specifications – Book_id , book_title, Author , Price , Qty , and perform the following operations:
32. 1. Create a table
33. 2. Add a record
34. 3. Search a record
35. 4. Update a record
36. 5. Delete a record
37. 6. Display all records 7. Exit
38. Perform all the operations with reference to table 'book' through MySQL-Python connectivity.

PRACTICAL 37

```python
def bubbleSort(arr):
    n = len(arr)

    for i in range(n-1):
        for j in range(0, n-i-1):

            if arr[j] > arr[j + 1] :
                arr[j], arr[j + 1] = arr[j + 1], arr[j]
a=int(input('enter total no: '))
arr=[]
for i in range(a):
    b=int(input('enter no: '))
    arr.append(b)
arr2=arr
bubbleSort(arr)
print('buuble sort:')
print(arr)
def selectsort(A):
    for i in range(len(A)):

        # Find the minimum element in remaining
        # unsorted array
        min_idx = i
        for j in range(i+1, len(A)):
            if A[min_idx] > A[j]:
                min_idx = j

        # Swap the found minimum element with
        # the first element
        A[i], A[min_idx] = A[min_idx], A[i]
selectsort(arr2)
print('selection sort:')
print(arr2)
```

```
arnavsuman@Arnavs-Mac
enter total no: 4
enter no: 456
enter no: 12
enter no: 32
enter no: 1
buuble sort:
[1, 12, 32, 456]
selection sort:
[1, 12, 32, 456]
```

PRACTICAL 38

```
list1=[]
a=int(input('enter length of list: '))
for i in range(a):
    b=int(input('enter no: '))
    list1.append(b)
c=int(input('enter element: '))
for i in list1:
    if i ==c:
        num_exist=True
    else:
        num_exist=False
if num_exist==True:
    print('Number exists in list.')
else:
    print('number does not exist')
```

arnavsuman@Arnavs-MacBook-
enter length of list: 2
enter no: 4
enter no: 3
enter element: 3
Number exists in list.

PRACTICAL 39

```
list1=[]
a=int(input('enter length of list: '))
for i in range(a):
    b=int(input('enter no: '))
    list1.append(b)

c=int(input('enter element to find occurence: '))
count=0

for i in list1:
    if i==c:
        count+=1
print(count)
print('The no. of times ',str(c),'occurs is :',str(count))
```

enter length of list: 3
enter no: 2
enter no: 2
enter no: 4
enter element to find occurence: 2
2
The no. of times 2 occurs is : 2

PRACTICAL 40

```python
list1=[]
a=int(input('enter length of list: '))
for i in range(a):
    b=int(input('enter no: '))
    list1.append(b)

c=int(input('enter element to enter element: '))
p=int(input('enter where: '))
def insert_pos(x, list1, pos):
    list1= list1[:pos-1]+[x]+list1[pos-1:]
    return list1
print(insert_pos(c,list1,p))
```

```
arnavsuman@Arnavs-MacBook-
enter length of list: 2
enter no: 4
enter no: 3
enter element: 3
Number exists in list.
```

PRACTICAL 41

```python
list1=[]
a=int(input('enter length of list: '))
for i in range(a):
    b=int(input('enter no: '))
    list1.append(b)

c=int(input('enter element to enter element: '))
list1.append(c)
print('The pre-sorted list is: ')
print(list1)
def bubbleSort(arr):
    n = len(arr)
    for i in range(n-1):
        for j in range(0, n-i-1):
            if arr[j] > arr[j + 1] :
                arr[j], arr[j + 1] = arr[j + 1], arr[j]
bubbleSort(list1)
print('Sorted list is: ')
print(list1)
```

```
enter length of list: 5
enter no: 21
enter no: 32
enter no: 11
enter no: 89
enter no: 5
enter element to enter element: 4
The pre-sorted list is:
[21, 32, 11, 89, 5, 4]
Sorted list is:
[4, 5, 11, 21, 32, 89]
arnavsuman@Arnavs-MacBook-Air 12c
```

PRACTICAL 42

```python
list1=[]
a=int(input('enter length of list: '))
for i in range(a):
    b=int(input('enter no: '))
    list1.append(b)

num= int(input('enter elememnt to delete: '))
print(list1)
list1.remove(num)
print(list1)
```

```
enter length of list: 3
enter no: 1
enter no: 2
enter no: 3
enter elememnt to delete: 2
[1, 2, 3]
[1, 3]
arnavsuman@Arnavs-MacBook-Ai
```

PRACTICAL 43

```python
list1=[]
a=int(input('enter length of list: '))
for i in range(a):
    b=int(input('enter no: '))
    list1.append(b)

c=int(input('enter element to delete: '))

def remove(list1, element):
    res = [i for i in list1 if i != element]
    return res
print(remove(list1,c))
```

```
enter length of list: 6
enter no: 21
enter no: 26
enter no: 21
enter no: 66
enter no: 21
enter no: 67
enter element to delete: 21
list before
[21, 26, 21, 66, 21, 67]
list after
[26, 66, 67]
```

PRACTICAL 44

```python
list1=[1,1,1,3,5,3,67,86,11,23]
def push(list):
    num=int(input('enter no to enter: '))
    list.append(num)

def pop(list):
    list.pop()

def display(list):
    print(list)

def count(list):
    num=int(input('enter element to count:'))
    count=0
    for i in list:
        if i ==num:
            count=count+1
    print('the element ',str(num),' appeared ', str(count),' times.')
while True:
    print('Type 1 for Push. ')
    print('tyype 2 to pop last element')
    print('type 3 to display all no.')
    print('type 4 to count')
    print('type 5 to exit')
    print()
    sel=int(input('enter choice: '))

    if sel == 1:
        push(list1)
    if sel == 2:
        pop(list1)
    if sel== 3:
        display(list1)
    if sel== 4:
        count(list1)
    if sel== 5:
        break
```

Type 1 for Push.
tyype 2 to pop last element
type 3 to display all no.
type 4 to count
type 5 to exit

enter choice: 1
enter no to enter: 45
Type 1 for Push.
tyype 2 to pop last element
type 3 to display all no.
type 4 to count
type 5 to exit

enter choice: 3
[1, 1, 1, 3, 5, 3, 67, 86, 11, 23, 45]
Type 1 for Push.
tyype 2 to pop last element
type 3 to display all no.
type 4 to count
type 5 to exit

enter choice: 4
enter element to count:1
the element 1 appeared 3 times.
Type 1 for Push.
tyype 2 to pop last element
type 3 to display all no.
type 4 to count
type 5 to exit

enter choice: 5
arnavsuman@Arnavs-MacBook-Air 12c % []

PRACTICAL 45

```python
a= input("Enter a word: ")
s=[]
for i in a:
    s.append(i)
list1 = ''
while not len(s)==0:
  list1 += s.pop()

if list1 == a:
    print("The word is a palindrome")
else:
    print("It's not a palindrome")
```

arnavsuman@Arnavs-MacBook-
Enter a word: kayak
The word is a palindrome
Enter a word: tree
It's not a palindrome
arnavsuman@Arnavs-MacBook-

PRACTICAL 46

```python
employee=[]
def push():
    empno=int(input("Enter empno: "))
    name=input("Enter name: ")
    emp=(empno,name)
    employee.append(emp)
    print()
def pop():
    if(employee==[]):
        print("Underflow / Employee Stack in empty")
    else:
        empno,name=employee.pop()
        print("poped element is ")
        print("empno ",empno," name ",name)
    print()
def peek():
    num=int(input('Enter employee no. to search: '))
    if employee==[]:
        print("Empty , No employee to display")
    else:
        for j in employee:
            if j[0]==num:
                print('Employee name is: ',str(j[1]))
                print('Employee no is: ',str(j[0]))
    print()
while True:
    print("1. Push")
    print("2. Pop")
    print("3. Peep")
    print("4. Exit")
    ch=int(input("Enter your choice: "))
    if(ch==1):
        push()
    elif(ch==2):
            pop()
    elif(ch==3):
            peek()
    elif(ch==4):
        print("End")
        break
```

```
1. Push
2. Pop
3. Peep
4. Exit
Enter your choice: 1
Enter empno: 101
Enter name: ram charan

1. Push
2. Pop
3. Peep
4. Exit
Enter your choice: 3
Enter employee no. to search: 101
Employee name is:   ram charan
Employee no is:   101

1. Push
2. Pop
3. Peep
4. Exit
Enter your choice: 3
Enter employee no. to search: 101
Employee name is:   ram charan
Employee no is:   101

1. Push
2. Pop
3. Peep
4. Exit
Enter your choice: 4
End
```

PRACTICAL 47

```python
import mysql.connector
db = mysql.connector.connect(host='localhost', user='root', password='Arnavcool1')
cur=db.cursor()
cur.execute('CREATE DATABASE product;')
cur.execute('use product;')
cur.execute("create table product_table (Itemno int(3) primary key, Iname varchar(15), name varchar(30), Price int(10), Quantity int(3))")
```

Itemno	Iname	name	Price	Quantity
NULL	NULL	NULL	NULL	NULL

PRACTICAL 48

```python
import mysql.connector
db = mysql.connector.connect(host='localhost', user='root', password='Arnavcool1', database ='product')
cur=db.cursor()


data= [(101, 'Soap', 50, 100), (102, 'Powder', 100, 50), (103, 'Face cream', 150, 25), (104, 'Pen', 50, 200),
 (105, 'Soap box', 20, 100)]

query="INSERT INTO product_table(Itemno,Iname,Price,Quantity) values(%s,%s,%s,%s);"
cur.executemany(query, data)
db.commit()
```

Itemno	Iname	Price	Quantity
101	Soap	50	100
102	Powder	100	50
103	Face cream	150	25
104	Pen	50	200
105	Soap box	20	100

PRACTICAL 49

```python
import mysql.connector
db = mysql.connector.connect(host='localhost', user='root', password='Arnavcool1', database ='product')
cur=db.cursor()

print('1.')
cur.execute('SELECT * from product_table;')
for i in cur.fetchall():
    print(i)
```

```python
print('2.')
cur.execute('Select Iname, Price from product_table')
for i in cur.fetchall():
    print(i)


print('3.')
cur.execute("Select * from product_table where Iname='Soap'; ")
print(cur.fetchone())

print('4.')
cur.execute("Select * from product_table where Iname like 's%'; ")
for i in cur.fetchall():
    print(i)

print('5.')
cur.execute("Select Itemno , Iname , ( price * quantity) as 'Total price' from product_table;")
for i in cur.fetchall():
    print(i)

print('6.')
cur.execute("select * from product_table order by Iname ;")
for i in cur.fetchall():
    print(i)

print('7.')
cur.execute("select Iname, Price from product_table order by Price DESC ;")
for i in cur.fetchall():
    print(i)


print('.8')
cur.execute("select Iname from product_table where Price between 50 and 100;")
for i in cur.fetchall():
    print(i)

print('9.')
cur.execute("update product_table set Price = Price*0.95;")
cur.execute('select * from product_table;')
for i in cur.fetchall():
    print(i)
```

```
1.
(101, 'Soap', 50, 100)
(102, 'Powder', 100, 50)
(103, 'Face cream', 150, 25)
(104, 'Pen', 50, 200)
(105, 'Soap box', 20, 100)
2.
('Soap', 50)
('Powder', 100)
('Face cream', 150)
('Pen', 50)
('Soap box', 20)
3.
(101, 'Soap', 50, 100)
4.
(101, 'Soap', 50, 100)
(105, 'Soap box', 20, 100)
5.
(101, 'Soap', 5000)
(102, 'Powder', 5000)
(103, 'Face cream', 3750)
(104, 'Pen', 10000)
(105, 'Soap box', 2000)
6.
(103, 'Face cream', 150, 25)
(104, 'Pen', 50, 200)
(102, 'Powder', 100, 50)
(101, 'Soap', 50, 100)
(105, 'Soap box', 20, 100)
7.
('Face cream', 150)
('Powder', 100)
('Soap', 50)
('Pen', 50)
('Soap box', 20)
.8
('Soap',)
('Powder',)
('Pen',)
9.
(101, 'Soap', 48, 100)
(102, 'Powder', 95, 50)
(103, 'Face cream', 143, 25)
(104, 'Pen', 48, 200)
(105, 'Soap box', 19, 100)
```

PRACTICAL 50

```python
print('1.')
cur.execute('ALTER TABLE product_table ADD totalprice decimal (10,2);')
db.commit()
print('2.')
cur.execute('ALTER TABLE product_table MODIFY COLUMN Iname varchar(25);')
db.commit()

print('3. ')
cur.execute("Select ( price * quantity) as 'Total price' from product_table;")
price22=[]

for i in cur.fetchall():
    price22.append(i)

query="INSERT INTO product_table(totalprice) values(%s);"
cur.executemany(query, price22)
db.commit()
cur.execute("Select totalprice from product_table")
for i in cur.fetchall():
    print(i)
db.commit()

print('4.')
cur.execute('SELECT * FROM product_table WHERE Price = (SELECT MAX(Price) FROM product_table);')
print(cur.fetchone())
print()
db.commit()

print('5.')
cur.execute("DELETE FROM product_table WHERE Iname='Powder';")
for i in cur.fetchall():
    print(i)
db.commit()

print('6.')
cur.execute('ALTER TABLE product_table DROP COLUMN totalprice;')
for i in cur.fetchall():
    print(i)
db.commit()

print('7. ')
cur.execute('DROP TABLE product_table;')

print('8. ')
cur.execute('DROP DATABASE product;')
```

PRACTICAL 51

SUM(Price)
370

1.

2.

AVG(Price)
74.0000

3.

MIN(Price)
20

4.

MAX(Price)
150

5.

COUNT(Price)
5

6.

Price
50
100
150
20

7.

COUNT(DISTINCT Price)
4

8.

Iname	price*quant...
Soap	5000
Powder	5000
Face cream	3750
Pen	10000
Soap box	2000

PRACTICAL 52

```python
import mysql.connector
db = mysql.connector.connect(host='localhost', user='root', password='Arnavcool1', database ='product')
cur=db.cursor()

cur.execute('Select Item.Icode, IName, BNAME from Item, BNAME Where Item.ICode = BNAME.Icode and Item.price between 25000 and 30000;')
for i in cur.fetchall():
    print(i)

cur.execute("Select Item.Icode, price, BNAME from Item,BNAME where Item.ICode = BNAME.Icode and Iten.Iname like 'Television';")
for i in cur.fetchall():
    print(i)

cur.execute("Update item set Price = Price * 1.10 ;")
for i in cur.fetchall():
    print(i)

cur.execute("SELECT DISTINCT BNAME from BRAND;")
for i in cur.fetchall():
    print(i)
```

PRACTICAL 53

```python
import mysql.connector
db = mysql.connector.connect(host='localhost', user='root', password='Arnavcool1', database ='product')
cur=db.cursor()

cur.execute("CREATE TABLE students (Adno int(3) primary key, Name varchar(20), Average int(3), Gender char(1), Scode int(4) )")
```

Adno	Name	Average	Gender	Scode
NULL	NULL	NULL	NULL	NULL

PRACTICAL 54

```python
import mysql.connector
db = mysql.connector.connect(host='localhost', user='root', password='Arnavcool1', database ='product')
cur=db.cursor()

data=[(501, 'R Jain', 98, 'M', 111),
    (545, 'Kavita', 73, 'F',333),(705, 'K.rashika', 85, 'F', 111),(754, 'Rahul Goel', 60, 'M', 444),
    (892, 'Sahil Jain', 78, 'M',333),(935, 'Rohan Saini', 85, 'M', 222),
    (955, 'Anjali',64 'F',444), (983, 'Sneha Aggarwal',80,'F',222)]

query="INSERT INTO students( Adno, Name , Average, Gender, Scode ) values(%s,%s,%s,%s,%s); "
cur.executemany(query, data)
db.commit()
```

Adno	Name	Average	Gender	Scode
501	R Jain	98	M	111
545	Kavita	73	F	333
705	K.rashika	85	F	111
754	Rahul Goel	60	M	444
892	Sahil Jain	78	M	333
935	Rohan Saini	85	M	222
955	Anjali	64	F	444
983	Sneha Aggarwal	80	F	222

PRACTICAL 55

```python
import mysql.connector
db = mysql.connector.connect(host='localhost', user='root', password='Arnavcool1', database ='product')
cur=db.cursor()
#1.
cur.execute("SELECT *  from students;")
for i in cur.fetchall():
    print(i)
#2.
cur.execute("SELECT *  from students where Name='Rohan Saini';")
for i in cur.fetchall():
    print(i)
#3.
cur.execute("SELECT count(distinct Adno) from students;")
cur.fetchone()
print('Total no. of students are: ', str(cur.fetchone()))
#4.
cur.execute("SELECT count(distinct Adno) from students where Gender='M';")
print('Total no. of Male students are: ', str(cur.fetchone()))

cur.execute("SELECT count(distinct Adno) from students where Gender='F';")
print('Total no. of Female students are: ', str(cur.fetchone()))
#5.
cur.execute("select * from students order by Name ;")
for i in cur.fetchall():
    print(i)
#6.
cur.execute("select * from students order by Average DESC ;")
for i in cur.fetchall():
    print(i)
#7.
cur.execute("select * from students where Name like 'K%' ;")
for i in cur.fetchall():
    print(i)
#8.
cur.execute("select * from students where Name like '%I' ;")
for i in cur.fetchall():
    print(i)
#9.
cur.execute("select Adno, Name, (Average*5) as 'Total_Marks' from students;")
for i in cur.fetchall():
    print(i)
#10.
cur.execute("select * from students where Average between 80 and 90;")
for i in cur.fetchall():
    print(i)
```

```
(501, 'R Jain', 98, 'M', 111)
(545, 'Kavita', 73, 'F', 333)
(705, 'K.rashika', 85, 'F', 111)
(754, 'Rahul Goel', 60, 'M', 444)
(892, 'Sahil Jain', 78, 'M', 333)
(935, 'Rohan Saini', 85, 'M', 222)
(955, 'Anjali', 64, 'F', 444)
(983, 'Sneha Aggarwal', 80, 'F', 222)
(935, 'Rohan Saini', 85, 'M', 222)
Total no. of students are:  None
Total no. of Male students are:  (4,)
Total no. of Female students are:  (4,)
(955, 'Anjali', 64, 'F', 444)
(705, 'K.rashika', 85, 'F', 111)
(545, 'Kavita', 73, 'F', 333)
(501, 'R Jain', 98, 'M', 111)
(754, 'Rahul Goel', 60, 'M', 444)
(935, 'Rohan Saini', 85, 'M', 222)
(892, 'Sahil Jain', 78, 'M', 333)
(983, 'Sneha Aggarwal', 80, 'F', 222)
(501, 'R Jain', 98, 'M', 111)
(705, 'K.rashika', 85, 'F', 111)
(935, 'Rohan Saini', 85, 'M', 222)
(983, 'Sneha Aggarwal', 80, 'F', 222)
(892, 'Sahil Jain', 78, 'M', 333)
(545, 'Kavita', 73, 'F', 333)
(955, 'Anjali', 64, 'F', 444)
(754, 'Rahul Goel', 60, 'M', 444)
(545, 'Kavita', 73, 'F', 333)
(705, 'K.rashika', 85, 'F', 111)
(935, 'Rohan Saini', 85, 'M', 222)
(955, 'Anjali', 64, 'F', 444)
(501, 'R Jain', 490)
(545, 'Kavita', 365)
(705, 'K.rashika', 425)
(754, 'Rahul Goel', 300)
(892, 'Sahil Jain', 390)
(935, 'Rohan Saini', 425)
(955, 'Anjali', 320)
(983, 'Sneha Aggarwal', 400)
(705, 'K.rashika', 85, 'F', 111)
(935, 'Rohan Saini', 85, 'M', 222)
(983, 'Sneha Aggarwal', 80, 'F', 222)
arnavsuman@Arnavs-MacBook-Air ~ %
```

PRACTICAL 56

```python
import mysql.connector
db = mysql.connector.connect(host='localhost', user='root', password='Arnavcool1', database ='product')
cur=db.cursor()
#1.
cur.execute("SELECT *  from students where Average>80 and Scode< 333;")
for i in cur.fetchall():
    print(i)
#2.
cur.execute("SELECT Name, Average  from students where Scode between 222 and 333;")
for i in cur.fetchall():
    print(i)
#3.
cur.execute("SELECT SUM(Average) from students;")
for i in cur.fetchone():
    print(i)
#4.
cur.execute("SELECT MAX(Average) from students;")
for i in cur.fetchone():
    print(i)
#5.
cur.execute("SELECT MIN(Average) from students;")
for i in cur.fetchone():
    print(i)
#6.
cur.execute("SELECT AVG(Average) from students where Gender='F';")
print('Average marks of Female students are: ', str(cur.fetchone()))
cur.execute("SELECT AVG(Average) from students where Gender='M';")
print('Average marks of male students are: ', str(cur.fetchone()))
#7.
cur.execute("SELECT min(distinct scode), max(distinct scode), sum(distinct scode) from students;")
for i in cur.fetchall():
    print(i)
#8.
cur.execute("SELECT count(distinct scode) from students;")
for i in cur.fetchone():
    print(i)
```

```
(501, 'R Jain', 98, 'M', 111)
(705, 'K.rashika', 85, 'F', 111)
(935, 'Rohan Saini', 85, 'M', 222)
('Kavita', 73)
('Sahil Jain', 78)
('Rohan Saini', 85)
('Sneha Aggarwal', 80)
623
98
60
Average marks of Female students are:  (Decimal('75.5000'),)
Average marks of male students are:  (Decimal('80.2500'),)
(111, 444, Decimal('1110'))
4
arnavsuman@Arnavs-MacBook-Air ~ %
```

PRACTICAL 57

```python
import mysql.connector
db = mysql.connector.connect(host='localhost', user='root', password='Arnavcool1', database ='product')
cur=db.cursor()

#1.
cur.execute("SELECT BookName, AuthorName from BOOKS where Publisher='ABC';")
for i in cur.fetchall():
    print(i)

#2.
cur.execute("select * from BOOKS order by Price DESC ;")
for i in cur.fetchall():
    print(i)

#3.
cur.execute("SELECT BOOKS.Book_ID, BOOKS.BookName, BOOKS.AuthorName, BOOKS.Publisher, BOOKS.Price, BOOKS.QTY,'
' ISSUES.Oty_Issued FROM BOOKS LEFT JOIN ISSUES ON BOOKS.Book_ID=ISSUES.Book_ID;")'
for i in cur.fetchall():
    print(i)

#4.
cur.execute("select distinct AuthorName ,MIN(Price) from BOOKS order by Price DESC ;")
for i in cur.fetchall():
    print(i)

#5.
cur.execute("SELECT  BOOKS.Price, ISSUES.Oty_Issued FROM BOOKS LEFT JOIN ISSUES ON BOOKS.Book_ID=ISSUES.Book_ID where Oty_Issued=5;")
for i in cur.fetchall():
    print(i)
```

PRACTICAL 58

```python
import mysql.connector
db = mysql.connector.connect(host='localhost', user='root', password='Arnavcool1', database ='product')
cur=db.cursor()

def new_rec():
    id=int(input('enter id: '))
    name=input('enter name: ')
    age=int(input('enter age: '))
    dob=input('enter date of birth (YYYY-MM-DD): ')
    amt=int(input('enter outstanding amount: '))
    print()
    print()
    reco=(id,name,age, dob, amt)
    query="INSERT INTO Customer values(%s,%s,%s,%s,%s);"
    cur.execute(query, reco)
    db.commit()
def display():
    cur.execute("select * from Customer;")
    for i in cur.fetchall():
        print(i)
    print()
def search():
    id=int(input('enter id to search: '))
    cur.execute('select * from Customer where Cust_id=(%s)').value(id)
    print()
print()
print('enter 1. to add new record.')
print('enter 2. to display all record.')
print('enter 3. to search record based on cust_id.')
print('enter 4 to exit.')
print()
while True:
    ch=int(input('enter your choice: '))
    if ch==1:
        new_rec()
    elif ch==2:
        display()
    elif ch==3:
        search()
    elif ch==4:
        break
```

PRACTICAL 59

```python
import mysql.connector
db = mysql.connector.connect(host='localhost', user='root', password='Arnavcool1', database ='product')
cur=db.cursor()

def update():
    id=int(input('enter id: '))
    name=input('enter name: ')
    age=int(input('enter age: '))
    dob=input('enter date of birth (YYYY-MM-DD): ')
    amt=int(input('enter outstanding amount: '))
    print()
    print()
    cur.excute("UPDATE Customers SET Cust_name = (%s), Cust_age= (%s), DOB=(%s), Outstanding Amount=(%s) WHERE CustomerID = (%s)").values(name, age, dob, amt, id);
    db.commit()
def delete():
    id=int(input('enter id: '))
    cur.execute('delee from Cusomers where Cust_id=(%s)').value(id)
    db.commit()
def display():
    cur.execute("select * from Customer;")
    for i in cur.fetchall():
        print(i)
    print()

print()
print('enter 1. to display a record based on cust_id.')
print('enter 2. Delete record based on Cust_Id.')
print('enter 3. Display all the record.')
print('enter 4 to exit.')
print()
while True:
    ch=int(input('enter your choice: '))
    if ch==1:
        update()
    elif ch==2:
        delete()
    elif ch==3:
        display()
    elif ch==4:
        break
```

PRACTICAL 60

```python
import mysql.connector
db = mysql.connector.connect(host='localhost', user='root', password='Arnavcool1')
cur=db.cursor()

cur.execute('CREATE DATABASE library;')
cur.execute('CREATE TABLE book (Book_id int(100) primary key, book_title varchar(255), Author varchar(255), Price int(25), Qty int(25));')

def update():
    id=int(input('enter Book_id: '))
    title=input('enter book_title: ')
    author=input('enter Author: ')
    price=int(input('enter price: '))
    qty=int(input('enter qty: '))
    cur.excute("UPDATE book SET book_title= (%s), Author=(%s), Price=(%s), Qty=(%s) WHERE CustomerID = (%s)").values(title, author, price, qty, id);
    db.commit()
def add():
    id=int(input('enter Book_id: '))
    title=input('enter book_title: ')
    author=input('enter Author: ')
    price=int(input('enter price: '))
    qty=int(input('enter qty: '))
    rec=(id, title, author, price, qty)
    query="INSERT INTO book values(%s,%s,%s,%s,%s);"
    cur.execute(query, rec)
    db.commit()
def search():
    id=int(input('enter Book_id: '))
    cur.execute('select * from book where Book_id=(%s)').value(id)
def delete():
    id=int(input('enter id: '))
    cur.execute('delete from book where Book_id=(%s)').value(id)
    db.commit()
def display():
    cur.execute("select * from book;")
    for i in cur.fetchall():
        print(i)
    print()



print()
print('enter 1. add a record based on cust_id.')
print('enter 2. search a record.')
print('enter 3. update a record.')
print('enter 4 to Delete record based on book_Id.')
print('enter 5 to Display all the record.')
print('enter 6 to exit.')
print()
while True:
    ch=int(input('enter your choice: '))
    if ch==1:
        add()
    elif ch==2:
        search()
    elif ch==3:
        update()
    elif ch==4:
        delete()
    elif ch==5:
        display()
    elif ch==6:
        break
```