Computer Practical file

Made by

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Roll No: ………………………………….

Submitted to
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General Instruction :

1. Each program should be started from new page.

2. Be careful for indentation and do proper documentations

SECTION – A (PYTHON)

Q1. WAP a program to input marks of 5 subjects, calculate and display total marks and average marks of a student.

Q2. WAP to input total units which was consumed by a customer , calculate and display total charged to be paid by the customer .Electric Bill charges will calculate as per following condition.

No. of units	Rate(in Rs)
First 100 Units	1 Rs per unit.
Next200 Units	2 Rs per unit.
Above300 Units	4 Rs per unit.

Q3. Write a menu driven program to calculate:

Area of circle[A=πr2]

Area of squire [A=a*a]

Area of rectangle[A=l*b]

Q4. Write a program to check whether the entered number if prime or not.

Q5. WAP to input a number, calculate and display sum of each digit of that given number. For example: number is 456, Sum is 4+5+6= 15

Q6. WAP to calculate and display sum of the following series:

$$X+X^2/!2 +X^3/!3+ \ldots\ldots\ldots \text{ n terms.}$$

Q7. Write a program in python ,count and display the number of vowels, consonants , uppercase, lowercase characters in string.

Q7. Write a UDF in python, it will take three arguments list(sequence of elements), its size and finding element . Function search and return 1 if element is present in the given list otherwise return -1 . Using Binary search.

Q9. Write a program in python , to input a string check and display given string is a palindrome or not.

Q10. Write a program in python, to create a number list. Search and display largest and smallest number present in a list . Without using built-in function.

Q11. Write a program in python, to create a number list. Calculate and display sum of those elements whose last digit is 5.

Q12. Write a program in python, to create two number lists a and b . Swap and display all elements of both lists.

Q13. Write a UDF in python, it will take two arguments list(sequence of elements) and its size . Replace and display first half elements with second half elements of a list.

For example: list elements are :   1   2   3   4   5

Output is :   4   5   3   1   2

Q14. Write a UDF in python, it will take two arguments list(sequence of elements) and its size.   Function arrange and display elements in ascending order. Using selection sort.

Q15. Write a function in PYTHON that counts the number of "Me" or "My" words present in a text file "DIARY.TXT". If the "DIARY.TXT" contents are as follows:

My first book was Me and My

Family. It gave me chance to be

Known to the world.

The output of the function should be:

Count of Me/My in file: 4

Q16. Write a function in PYTHON to read the contents of a text file "Places.Txt" and display all those lines on screen which are either starting with 'P' or with 'S'.

Q17. Write a function EUCount() in PYTHON, which should read each character of a text file IMP.TXT, should count and display the occurrences of alphabets E and U (including small cases e and u too).

Q18. Write a function in PYTHON to search for a BookNo from a binary file "BOOK.DAT", assuming the binary file is containing the records of the following type: ("BookNo", "Book_name"). Assume that BookNo is an integer.

Q19. Write a function in Python for PushS(List) and for PopS(List) for performing Push and Pop operations with a stack of List containing integers.

Q20. Write a function in Python for InsertQ(List) and for RemoveQ(List) for performing insertion and removal operations with a queue of List containing name of students.

Q21. Write a menu-driven program implementing user-defined functions to perform different functions on a csv file "student" such as:

(a) Write a single record to csv.

(b) Write all the records in one single go onto the csv.

(c) Display the contents of the csv file.

Q22. Write a menu-driven program to perform all the basic operations using dictionary on student binary file such as inserting, reading, updating, searching and deleting a record.

Q1. Consider the tables EMPLOYEE and SALGRADE given below and answer (a) and (b)parts of this question.

(a) Write SQL commands for the following statements:

Table: EMPLOYEE

ECODE	NAME	DESIG	SGRADE	DOJ	DOB
101	Abdul Ahmad	EXECUTIVE	S03	23-Mar-2003	13-Jan-1980
102	Ravi Chander	HEAD-IT	S02	12-Feb-2010	22-Jul-1987
103	John Ken	RECEPTIONIST	S03	24-Jun-2009	24-Feb-1983
105	NazarAmeen	GM	S02	11-Aug-2006	03-Mar-1984
108	PriyamSen	CEO	S01	29-Dec-2004	19-Jan-1982

Table: SALGRADE

SGRADE	SALARY	HRA
S01	56000	18000
S02	32000	12000
S03	24000	8000

(i) To display the details of all EMPLOYEEs in descending order of DOJ.

(ii) To display NAME and DESIG of those EMPLOYEEs whose SALGRADE is either S02 or S03.

(iii) To display the content of the entire EMPLOYEEs table, whose DOJ is in between '09-Feb-2006' and '08-Aug-2009'.

(iv) To add a new row with the following content:

    109,'Harish Roy','HEAD-IT','S02','9-Sep-2007','21-Apr-1983'

(b) Give the output of the following SQL queries:

(i) SELECT COUNT(SGRADE),SGRADE FROM EMPLOYEE GROUP BY SGRADE;

(ii) SELECT MIN(DOB),MAX(DOJ) FROM EMPLOYEE;

(iii) SELECT SGRADE, SALARY+HRA FROM SALGRADE WHERE SGRADE ='S02';

Q2. Study the following table and write SQL queries for questions (i) to (iv) and output for (v) and (vi).

Table: Orders

Orderid	Pname	Quantity	Rate	Sale_date	Discount
1001	Pen	10	20	2019-10-05	
1002	Pencil	20	10	2019-10-21	
1003	Book	10	100	2019-11-02	50
1004	Eraser	100	5	2019-12-05	25
1005	Copy	50	20	2019-12-10	

(i) Write SQL query to display Pname, Quantity and Rate for all the orders that are either Pencil or Pen.

(ii) Write SQL query to display the orders which are not getting any Discount.

(iii) Write SQL query to display the Pname, Quantity and Sale_date for all the orders whose total cost (Quantity * Rate) is greater than 500.

(iv) Write SQL query to display the orders whose Rate is in the range 20 to 100.

(v) SELECT Pname, Quantity from Orders WHERE Pname LIKE('_e%');

(vi) SELECT Pname, Quantity, Rate FROM Orders Order BY Quantity DESC;

Q3. Write SQL commands for (i) to (vi) on the basis of relations given below:

BOOKS

book_id	Book_name	author_name	Publishers	Price	Type	qty
k0001	Let us C	Sanjay Mukharjee	EPB	450	Comp	15
p0001	Genuine	J. Mukhi	FIRST PUBL.	755	Fiction	24
m0001	Mastering C++	Kantkar	EPB	165	Comp	60
n0002	VC++ advance	P. Purohit	TDH	250	Comp	45
k0002	Programming with Python	Sanjeev	FIRST PUBL.	350	Fiction	30

ISSUED

Book_ID	Qty_Issued
L02	13
L04	5
L05	21

(i) To show the books of FIRST PUBL. Publishers written by P. Purohit.

(ii) To display cost of all the books published for FIRST PUBL.

(iii) Depreciate the price of all books of EPB publishers by 5%.

(iv) To display the BOOK_NAME and price of the books, more than 3 copies of which have been issued.

(v) To show total cost of books of each type.

(vi) To show the details of the costliest book.

Q4. Consider the given table and answer the questions.

Table: SchoolBus

Rtno	Area_Covered	Capacity	Noofstudents	Distance	Transporter	Charges
1	Vasant Kunj	100	120	10	Shivam travels	100000
2	Hauz Khas	80	80	10	Anand travels	85000
3	Pitampura	60	55	30	Anand travels	60000
4	Rohini	100	90	35	Anand travels	100000
5	Yamuna Vihar	50	60	20	Bhalla travels	55000
6	Krishna Nagar	70	80	30	Yadav travels	80000
7	Vasundhara	100	110	20	Yadav travels	100000
8	Paschim Vihar	40	40	20	Speed travels	55000
9	Saket	120	120	10	Speed travels	100000
10	Janakpuri	100	100	20	Kisan Tours	95000

(i) To show all information of students where capacity is more than the no. of students in order of rtno.

(ii) To show area_covered for buses covering more than 20 km., but charges less than 80000.

(iii) To show transporter-wise total no. of students travelling.

(iv) To show rtno, area_covered and average cost per student for all routes where average cost per student is—charges/noofstudents.

(v) Add a new record with the following data:

(11, "Motibagh",35,32,10, "kisan tours", 35000)

(vi) Give the output considering the original relation as given:

(a) select sum(distance) from schoolbus where transporter= "Yadav travels";

(b) select min(noofstudents) from schoolbus;

(c) select avg(charges) from schoolbus where transporter= "Anand travels";

(d) select distinct transporter from schoolbus;

Python

Programs

Q1.   WAP a program to input marks of 5 subjects, calculate and display total marks and average marks of a student.

Solution :

```python
# program to input marks of 5 subject and calculate total marks and
 average
# marks of a student
# made by     :
mark1 = int(input('Enter marks in first subject :'))
mark2 = int(input('Enter marks in second subject :'))
mark3 = int(input('Enter marks in third subject :'))
mark4 = int(input('Enter marks in fourth subject :'))
mark5 = int(input('Enter marks in fifth subject :'))
sum1 = mark1+mark2+mark3+mark4+mark5
avg = sum1/5
print('Total marks  :',sum1)
print('Average marks :',avg)
```

Output :

```
rakesh@DESKTOP-1PBLCJ5 MINGW64 /c/python (master)
$ python -u "c:\python\PracticalFileQuestion\Q1.py"
Enter marks in first subject :45
Enter marks in second subject :56
Enter marks in third subject :67
Enter marks in fourth subject :78
Enter marks in fifth subject :45
Total marks  : 291
Average marks : 58.2
```

Q2.   WAP to input total units which was consumed by a customer , calculate and display total charged to be paid by the customer .Electric Bill charges will calculate as per following condition.

No. of units	Rate(in Rs)
First 100 Units	1 Rs per unit.
Next200 Units	2 Rs per unit.
Above300 Units	4 Rs per unit.

Solution :

```python
# program to input total unit of electricity consumed and calculate
 bill
# made by      :
unit= int(input('Enter Total Units :'))
bill=0
if unit<=100:
    bill = unit*1.00
elif unit>100 and unit<=200:
    bill = 100+(unit-100)*2.00
else:
  bill = 300+(unit-300)*4.00
print('Your Bill is :', bill)
```

output :

rakesh@DESKTOP-1PBLCJ5 MINGW64 /c/python (master)
$ python -u "c:\python\PracticalFileQuestion\tempCodeRunnerFile.py"
Enter Total Units :345
Your Bill is : 480.0

Q3. Write a menu driven program to calculate:

Area of circle[A=πr2]

Area of squire [A=a*a]

Area of rectangle[A=l*b]

Solution:

```python
# menu drive program to calculate areas
# made by     :

while True:
  print(' Menu ')
  print("1.  Area of Circle")
  print("2.  Area of Square")
  print("3.  Area of Rectangle")
  print("4.  Exit")
  choice = int(input('Enter your choice :'))
  if choice ==1:
    r = int(input('Enter radius :'))
    area = 3.14*r**2
    print('Area of Circle :',area)
  if choice==2:
    side = int(input('Enter side of square :'))
    area = side*side
    print('Area of square :', area)
  if choice == 3:
    l = int(input('Enter Length :'))
    h = int(input('Enter height :'))
    area = l*h
    print('Area of Rectangle :', area)
  if choice ==4:
    break
```

 Menu
1. Area of Circle
2. Area of Square
3. Area of Rectangle
4. Exit
Enter your choice :1
Enter radius :12
Area of Circle : 452.16
 Menu
1. Area of Circle
2. Area of Square
3. Area of Rectangle
4. Exit
Enter your choice :2
Enter side of square :24
Area of square : 576
 Menu
1. Area of Circle
2. Area of Square
3. Area of Rectangle
4. Exit
Enter your choice :3
Enter Length :12
Enter height :23
Area of Rectangle : 276
 Menu
1. Area of Circle
2. Area of Square
3. Area of Rectangle
4. Exit
Enter your choice :

Q4.   Write a program to check whether the entered number if prime or not.

Solution

```python
# program to check of primality
# made by      :
n = int(input('Enter any number :'))
found=0
for i in range(2,n//2+1):
    if n%i==0:
        found=1
if found ==0:
  print('Number is prime')
else:
  print('Number is not prime')
```

output

rakesh@DESKTOP-1PBLCJ5 MINGW64 /c/python (master)
$ python -u "c:\python\PracticalFileQuestion\tempCodeRunnerFile.py"
Enter any number :17
Number is prime

rakesh@DESKTOP-1PBLCJ5 MINGW64 /c/python (master)
$ python -u "c:\python\PracticalFileQuestion\tempCodeRunnerFile.py"
Enter any number :15
Number is not prime

Q5.   WAP to input a number, calculate and display sum of each digit of that given number. For example: number is 456, Sum is 4+5+6= 15

Solution :

```python
# program to find out sum of digits of any given number
# made by     :
n = int(input('Enter any number  :'))
s=0
while n!=0:
    s= s+n%10
    n = n//10
print('Sum of digits :',s)
```

output

$ python -u "c:\python\PracticalFileQuestion\tempCodeRunnerFile.py"
Enter any number :125
Sum of digits : 8

Q6. WAP to calculate and display sum of the following series:

$$X+X^2/!2 +X^3/!3+ .... \text{ n terms.}$$

Solution :

```python
# program to find out sum of the following series
# sum = X+X2 /!2 + X3 /!3 + n terms
# made by     :
import math
n = int(input('Enter any number  :'))
x = int(input('Enter value of x  :'))
s=0
for i in range(1,n+1):
    s = s+(x**i)/math.factorial(i)
print('Sum of the series is :',s)
```

Output

rakesh@DESKTOP-1PBLCJ5 MINGW64 /c/python (master)
$ python -u "c:\python\PracticalFileQuestion\tempCodeRunnerFile.py"
Enter any number :6
Enter value of x :2
Sum of the series is : 6.355555555555555

Q7. Write a program in python ,count and display the number of vowels, consonants , uppercase, lowercase characters in string.

Solution :

```python
# Write a program in python ,count # and display the number
# of vowels, consonants , uppercase, lowercase characters in string
.
string ='''This is me and this is a wonderful Team of India. right
now they are playing with only Team australia'''
vowels=0
consonent=0
uppercase=0
lowercase=0
for x in string:
    if x in 'aeiouAEIOU':
        vowels+=1
    else:
        consonent+=1
    if x.isupper():
        uppercase+=1
    else:
        lowercase+=1
print('Total vowels :',vowels)
print('Total consonent :',consonent)
print('Total upparcase char :',uppercase)
print('Total lowercase char : :',lowercase)
```

Output:
rakesh@DESKTOP-1PBLCJ5 MINGW64 /c/python (master)
$ python -u "c:\python\PracticalFileQuestion\Q7.py"
Total vowels : 32
Total consonent : 80
Total upparcase char : 4
Total lowercase char : : 108

Q8.   Write a UDF in python, it will take three arguments list(sequence of elements), its size and finding element . Function search and return 1 if element is present in the given list otherwise return -1 . Using Binary search.

Solution :

```python
#Write a UDF in python, it will take three arguments list(sequence of elements)
,its size and finding element . Function search and return 1 if element is pres
ent
# in the given list otherwise return -1 . Using Binary search
def binary_search(list1,n,data):
    first = 0
    last = n-1
    found=-1
    while first<=last and found==-1:
        mid = (first+last)//2
        if list1[mid]==data:
          found=1
        elif list1[mid]<data:
            first = mid+1
        else:
            last = mid -1
    return found


#implementation of user defined function
list1=[1,2,3,4,5,6,7,8,9,10,12,13,14,15,16,18,20]
n=17
result = binary_search(list1,n,17)
if result ==1:
  print('Number present')
else:
  print('Number not present')
```

Output
rakesh@DESKTOP-1PBLCJ5 MINGW64 /c/python (master)
$ python -u "c:\python\PracticalFileQuestion\Q8.py"
Number not present

Q9.   Write a program in python , to input a string check and display given string is a palindrome or not.

Solution :

```python
# Write a program in python, to input a string check and display given string
# is a palindrome or not.

string = input('Enter any string : ')
if string == string[-1::-1]:
    print('Palindrome string ')
else:
    print('Not a palindrome string')
```

Output :

rakesh@DESKTOP-1PBLCJ5 MINGW64 /c/python (master)
$ python -u "c:\python\PracticalFileQuestion\tempCodeRunnerFile.py"
Enter any string : rakesh
Not a palindrome string

rakesh@DESKTOP-1PBLCJ5 MINGW64 /c/python (master)
$ python -u "c:\python\PracticalFileQuestion\tempCodeRunnerFile.py"
Enter any string : nitin
Palindrome string

Q10. Write a program in python, to create a number list. Search and display largest and smallest number present in a list . Without using built-in function.

Solution :

```python
# Write a program in python, to create a number list. Search and display # largest and smallest number present in a list . Without using built-in function
list1=[]
while True:
    a = int(input('Enter any number :'))
    list1.append(a)
    choice=input('Add more number(y/n) :').upper()
    if choice =='N':
        break

lar=low=list1[0]
for x in list1:
    if x >lar:
        lar = x
    if x<low:
        low=x
print('Number list is ', list1)
print('Largest no :',lar)
print('Lowest no :',low)
```

OUTPUT on the next Page

Output :

rakesh@DESKTOP-1PBLCJ5 MINGW64 /c/python (master)
$ python -u "c:\python\PracticalFileQuestion\tempCodeRunnerFile.py"
Enter any number :12
Add more number(y/n) :y
Enter any number :45
Add more number(y/n) :y
Enter any number :56
Add more number(y/n) :y
Enter any number :67
Add more number(y/n) :y
Enter any number :879
Add more number(y/n) :n
Number list is [12, 45, 56, 67, 879]
Largest no : 879
Lowest no : 12

Q11. Write a program in python, to create a number list. Calculate and display sum of those elements whose last digit is 5.

Solution :

```python
#Write a program in python, to create a number list.
# Calculate and display sum of those elements whose last digit is 5
.
list1 = [1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 13, 14, 15, 16, 18, 20]
s=0
for x in list1:
    if x%10==5:
        s= s+x
print(' Sum of digits having 5 at the last position :',s)
```

Output :

```
rakesh@DESKTOP-1PBLCJ5 MINGW64 /c/python (master)
$ python -u "c:\python\PracticalFileQuestion\Q11.py"
 Sum of digits having 5 at the last position : 20
```

Q12. Write a program in python, to create two number lists a and b . Swap and
display all elements of both lists.

```python
# Write a program in python, to create two number lists a
 and b .
# Swap and display all elements of both lists.

list1 = [1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 13, 14, 15, 16, 18, 20]
list2= [13,14,15,18,34,45,56,768,89,890,78]

list1, list2 = list2,list1
print(list1)
print(list2)
```

output :

```
rakesh@DESKTOP-1PBLCJ5 MINGW64 /c/python (master)
$ python -u "c:\python\PracticalFileQuestion\tempCodeRunnerFile.py"
[13, 14, 15, 18, 34, 45, 56, 768, 89, 890, 78]
[1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 13, 14, 15, 16, 18, 20]
```

Q13. Write a UDF in python, it will take two arguments list(sequence of elements) and
its size . Replace and display first half elements with second half elements of a
list.

For example: list elements are :   1   2   3   4   5

Output is :   4   5   3   1   2

Solution :

```python
# Write a UDF in python, it will take two arguments list
# (sequence of elements) and its size .
# Replace and display first half elements with second hal
f elements of a list.
# For example:  list elements are:  1 2 3 4 5
# Output is:  4 5 3 1 2

list1 = [1,2,3,4,5]
n = len(list1)
for i in range(n//2):
  list1[i],list1[n//2+1+i]= list1[n//2+1+i],list1[i]
print(list1)
```

output :

```
rakesh@DESKTOP-1PBLCJ5 MINGW64 /c/python (master)
$ python -u "c:\python\PracticalFileQuestion\tempCodeRunnerFile.py"
[4, 5, 3, 1, 2]
```

Q14. Write a UDF in python, it will take two arguments list(sequence of elements) and its size. Function arrange and display elements in ascending order. Using selection sort.

Solution :

```python
# Write a UDF in python, it will take two arguments list(
sequence of elements)
# and its size. Function arrange and display elements in
ascending order.
# Using selection sort.

def insertion_sort(list1):
  n = len(list1)
  for i in range(1,n):
    temp = list1[i]
    j = i-1
    while j>=0 and temp<list1[j]:
        list1[j+1]= list1[j]
        j = j-1
    list1[j+1]= temp
  return list1

# function implementation
list1 = [43,3,1,23,45,45,6,7,8,89,34,78]
list1 = insertion_sort(list1)
print(list1)
```

output

rakesh@DESKTOP-1PBLCJ5 MINGW64 /c/python (master)

$ python -u "c:\python\PracticalFileQuestion\tempCodeRunnerFile.py"

[1, 3, 6, 7, 8, 23, 34, 43, 45, 45, 78, 89]

Q15. Write a function in PYTHON that counts the number of "Me" or "My" words present in a text file "DIARY.TXT". If the "DIARY.TXT" contents are as follows:

My first book was Me and My

Family. It gave me chance to be

Known to the world.

The output of the function should be:

Count of Me/My in file: 4

Solution :

```python
# Write a function in PYTHON that counts the number of "Me" or "My"
 words present in a
# text file "DIARY.TXT". If the "DIARY.TXT" contents are as follows
 :
# My first book was Me and My Family. It gave me chance to be Known
 to the world.
# The output of the function should be:
# Count of Me/My in file: 4

def count_me_my():
  file = open('C:/python/PracticalFileQuestion/diary.txt', 'r')
  data = file.read().split()
  count = data.count('Me') +data.count('me') + data.count('My')+dat
a.count('my')
  file.close()
  print('Count of me or My :',count)

#function call
count_me_my()
```

output :

```
rakesh@DESKTOP-1PBLCJ5 MINGW64 /c/python (master)
$ python -u "c:\python\PracticalFileQuestion\Q15.py"
Count of me or My : 4
```

Q16. Write a function in PYTHON to read the contents of a text file "Places.Txt" and display all those lines on screen which are either starting with 'P' or with 'S'.

Solution :

```python
#Write a function in PYTHON to read the contents of a text file "Places.Txt"
# and display all those lines on screen which are either starting with 'P' or with 'S'.
def line_count():
    file = open('C:/python/PracticalFileQuestion/diary.txt', 'r')
    count =0
    for line in file.readlines():
        if line[0]=='P' or line[0]=='S':
            count+=1
            #print(line)
    file.close()
    print('Total lines :',count)


#function implementation
line_count()
```

output :

```
rakesh@DESKTOP-1PBLCJ5 MINGW64 /c/python (master)
$ python -u "c:\python\PracticalFileQuestion\Q16.py"
Total lines : 2
```

Q17. Write a function EUCount() in PYTHON, which should read each character of a text file IMP.TXT, should count and display the occurrences of alphabets E and U (including small cases e and u too).

Solution :

```python
# Write a function EUCount() in PYTHON, which should read each character
# of a text file IMP.TXT, should count and display the occurrences of
# alphabets E and U (including small cases e and u too).

def EUcount():
    file = open('C:/python/PracticalFileQuestion/diary.txt', 'r')
    count = 0
    for x in file.read():
        if x in 'EeUu':
            count+=1
    file.close()
    print('Total E or U in file :',count)

#function implementation
EUcount()
```

Output

rakesh@DESKTOP-1PBLCJ5 MINGW64 /c/python (master)
$ python -u "c:\python\PracticalFileQuestion\Q17.py"
Total E or U in file : 11

Q18. Write a function in PYTHON to search for a BookNo from a binary file "BOOK.DAT", assuming the binary file is containing the records of the following type: ("BookNo", "Book_name"). Assume that BookNo is an integer.

```python
# Write a function in PYTHON to search for a BookNo from a binary file # "BOOK.DAT", assuming the binary file is containing the records of the #  following type: ("BookNo", "Book_name").
# Assume that BookNo is an integer.
import pickle
tno = int(input('Enter book no to search :'))
file = open('C:/python/PracticalFileQuestion/book.dat', 'rb')
found=0
while True:

    try:
        data = pickle.load(file)
        if data['bookno']==tno:
            found=1
            print(data)
    except:
        break
file.close()
print("Book found" if found==1 else "Book Not Found")
```

Output :
rakesh@DESKTOP-1PBLCJ5 MINGW64 /c/python (master)
$ python -u "c:\python\PracticalFileQuestion\Q18.py"
Enter book no to search :3
{'bookno': 3, 'book_name': 'Django applications'}
Book found

rakesh@DESKTOP-1PBLCJ5 MINGW64 /c/python (master)
$ python -u "c:\python\PracticalFileQuestion\Q18.py"
Enter book no to search :45
Book Not Found

Q19. Write a function in Python for PushS(List) and for PopS(List) for performing Push and Pop

operations with a stack of List containing integers.

Solution :

```python
# Write a function in Python for PushS(List) and for PopS(List) for
 performing
# Push and Pop operations with a stack of List containing integers.

def push(stack):
    value = int(input('Enter any integer no :'))
    stack.append(value)

def pop(stack):
    if len(stack)<=0:
        print('\n Stack Underflow')
    else:
        print('\nPoped value from stack :',stack.pop())

def display(stack):
    print('\n\nStack Elements : ')
    for x in stack:
        print(x, end=' ')

#implementation of function to show stack
stack=[]
while True:
    print('\n  STACK MENU')
    print('1. Push')
    print('2. Pop')
    print('3. Display ')
    print('4. Exit')
    choice = input('Enter your choice :')
    if choice=='1':
        push(stack)
    if choice=='2':
        pop(stack)
    if choice=='3':
        display(stack)
    if choice=='4':
        break
```

Output on the next page

 STACK MENU
1. Push
2. Pop
3. Display
4. Exit
Enter your choice :1
Enter any integer no :11

 STACK MENU
1. Push
2. Pop
3. Display
4. Exit
Enter your choice :1
Enter any integer no :22

 STACK MENU
1. Push
2. Pop
3. Display
4. Exit
Enter your choice :3

Stack Elements :
11 22
 STACK MENU
1. Push
2. Pop
3. Display
4. Exit
Enter your choice :

Q20. Write a function in Python for InsertQ(List) and for RemoveQ(List) for performing
Solution :

```python
# Write a function in Python for PushS(List) and for PopS(List) for
 performing# Push and Pop operations with a queue of List containin
g integers.
def insert_element(queue):
  value = int(input('Enter any integer no :'))
  queue.append(value)


def delete_element(queue):
  if len(queue) <= 0:
    print('\n Queue Underflow')
  else:
    print('\nDeleted Elment from from Queue :', queue.pop(0))


def display(queue):
  print('\n\nQueue Elements : ')
  for x in queue:
    print(x, end=' ')


#implementation of function to show queue
queue = []
while True:
  print('\n  QUEUE MENU')
  print('1. Insert Element')
  print('2. Delete Element')
  print('3. Display ')
  print('4. Exit')
  choice = input('Enter your choice :')
  if choice == '1':
      insert_element(queue)
  if choice == '2':
```

```
            delete_element(queue)
    if choice == '3':
            display(queue)
    if choice == '4':
            break
```

Output :

 QUEUE MENU
1. Insert Element
2. Delete Element
3. Display
4. Exit
Enter your choice :1
Enter any integer no :23

 QUEUE MENU
1. Insert Element
2. Delete Element
3. Display
4. Exit
Enter your choice :3

Queue Elements :
12 23
 QUEUE MENU
1. Insert Element
2. Delete Element
3. Display
4. Exit

Q21. Write a menu-driven program implementing user-defined functions to perform different

functions on a csv file "student" such as:

(d) Write a single record to csv.

(e) Write all the records in one single go onto the csv.

(f) Display the contents of the csv file.

Solution :

```python
# Write a menu-driven program implementing user-
defined functions to perform
# different functions on a csv file "student" such as:
# (a) Write a single record to csv.
# (b) Write all the records in one single go onto the csv.
# (c) Display the contents of the csv file.
import csv

def single_record():
  file = open('C:/python/PracticalFileQuestion/student.csv', 'a')
  admno = int(input('Enter admno :'))
  name = input('Enter name :')
  std = input('Enter standard :')
  writer = csv.writer(file,lineterminator='\n')
  writer.writerow([admno,name,std])
  file.close()


def multiple_records():
  file = open('C:/python/PracticalFileQuestion/student.csv', 'a')
  data=[]
  while True:
    admno = int(input('Enter admno :'))
    name = input('Enter name :')
    std = input('Enter standard :')
    data.append([admno,name,std])
    choice= input('Add more records(y/n) :').upper()
    if choice =='N':
```

```python
        break

    writer = csv.writer(file, lineterminator='\n')
    writer.writerows(data)
    file.close()


def read_csv_file():
    file = open('C:/python/PracticalFileQuestion/student.csv', 'r')
    reader = csv.reader(file)
    for line in reader:
        print(line)
    file.close()


while True:
    print('\n\n CSV File Handling')
    print('1. Write Single Record')
    print('2. Write multiple Records')
    print('3. Read Whole CSV file ')
    print('4. Close Application')
    choice=input('Enter your choice :')
    if choice=='1':
        single_record()
    if choice=='2':
        multiple_records()
    if choice=='3':
        read_csv_file()
    if choice=='4':
        break
```

Output
CSV File Handling
1. Write Single Record
2. Write multiple Records
3. Read Whole CSV file
4. Close Application
Enter your choice :1
Enter admno :6
Enter name :govind
Enter standard :20

 CSV File Handling
1. Write Single Record
2. Write multiple Records
3. Read Whole CSV file
4. Close Application
Enter your choice :3
['1', 'rakesh', '12']
['2', 'anmol', '11']
['3', 'subodh', '10']
['4', 'ravi', '10']
['6', 'govind', '20']

 CSV File Handling
1. Write Single Record
2. Write multiple Records
3. Read Whole CSV file
4. Close Application
Enter your choice :

Q22. Write a menu-driven program to perform all the basic operations using dictionary on student binary file such as inserting, reading, updating, searching and deleting a record.

Solution :

```python
# Write a menu-driven program to perform all the basic operations using dictionary on student
#  binary file such as inserting,reading, updating, searching and deleting a record.

import pickle
import os


def insert_record():
  file = open('C:/python/PracticalFileQuestion/binary.dat', 'ab')
  admno = int(input('Enter admno :'))
  name = input('Enter name :')
  std = input('Enter standard :')
  student={'admno':admno,'name':name,'std':std}
  pickle.dump(student,file)
  file.close()
  print('Record added successfully........')


def read_records():
  file = open('C:/python/PracticalFileQuestion/binary.dat', 'rb')
  while True:
    try:
      data = pickle.load(file)
      print(data)
    except:
      break
  file.close()


def delete_record():
  file = open('C:/python/PracticalFileQuestion/binary.dat', 'rb')
  temp = open('temp.dat', 'wb')
  tadmno = int(input('Enter admission no to delete :'))
  while True:
    try:
      data = pickle.load(file)
      if data['admno'] != tadmno:
        pickle.dump(data, temp)
    except:
      break
  file.close()
  temp.close()
  os.remove('C:/python/PracticalFileQuestion/binary.dat')
  os.rename('temp.dat', 'C:/python/PracticalFileQuestion/binary.dat')
  print('Record updated......')


def update_record():
  file = open('C:/python/PracticalFileQuestion/binary.dat', 'rb')
  temp = open('temp.dat','wb')
  tadmno = int(input('Enter admission no to update :'))
  while True:
    try:
```

```python
        data = pickle.load(file)
        if data['admno']==tadmno:
            data['name'] = input('Enter new name :')
            data['std'] = input('Enter new standard :')
        pickle.dump(data,temp)
    except:
        break
file.close()
temp.close()
os.remove('C:/python/PracticalFileQuestion/binary.dat')
os.rename('temp.dat', 'C:/python/PracticalFileQuestion/binary.dat')
print('Record updated......')


def search_record():
    file = open('C:/python/PracticalFileQuestion/binary.dat', 'rb')
    tadmno = int(input('Enter admno to search :'))
    found=0
    while True:
        try:
            data = pickle.load(file)
            if data['admno']==tadmno:
                found =1
        except:
            break
    file.close()
    print('Record found ' if found==1 else 'Record not found ')

while True:
    print('\n\n Binary File Handling')
    print('1. Insert Record')
    print('2. Delete Records')
    print('3. Update Record ')
    print('4. Search Record ')
    print('5. Read all Records ')
    print('6. Close Application')
    choice = input('Enter your choice :')
    if choice == '1':
        insert_record()
    if choice == '2':
        delete_record()
    if choice == '3':
        update_record()
    if choice == '4':
        search_record()
    if choice== '5':
        read_records()
    if choice== '6':
        break
```

ouput :

Binary File Handling
1. Insert Record
2. Delete Records
3. Update Record
4. Search Record
5. Read all Records
6. Close Application
Enter your choice :1
Enter admno :2
Enter name :ravi
Enter standard :10
Record added successfully........

 Binary File Handling
1. Insert Record
2. Delete Records
3. Update Record
4. Search Record
5. Read all Records
6. Close Application
Enter your choice :5

{'admno': 2, 'name': 'ravi', 'std': '34'}
{'admno': 1, 'name': 'rakesh', 'std': '12'}
{'admno': 2, 'name': 'ravi', 'std': '10'}

Binary File Handling
1. Insert Record
2. Delete Records
3. Update Record
4. Search Record
5. Read all Records
6. Close Application
Enter your choice :2
Enter admission no to delete :2
Record updated......

SQL

```
mysql> create database practical;
Query OK, 1 row affected (0.00 sec)

mysql> use practical;

mysql> create table employee (ecode int, name char(30), desig char(20), sgrade char(10), doj date, dob
date);
Query OK, 0 rows affected (0.02 sec)

mysql> create table salgrade ( sgrade char(10), salary int, hra int);
Query OK, 0 rows affected (0.01 sec)

mysql> insert into employee values(101,'abdul ahmed','EXECUTUVE','S03','2003-03-23','1980-01-13');
Query OK, 1 row affected (0.00 sec)

mysql> insert into employee values(102,'Ravi Chander','HEAD-IT','S02','2010-02-12','1987-07-22');
Query OK, 1 row affected (0.00 sec)

mysql> insert into employee values(103,'John ken','RECEPTIONIST','S03','2009-06-24','1983-02-24');
Query OK, 1 row affected (0.00 sec)

mysql> insert into employee values(104,'Nazar Ahmad','GM','S02','2006-08-11','1984-03-03');
Query OK, 1 row affected (0.00 sec)

mysql> insert into employee values(105,'PriyamSen','CEO','S01','2004-12-29','1982-01-19');
Query OK, 1 row affected (0.00 sec)

mysql> desc employee;
+---------+----------+------+-----+---------+-------+
| Field   | Type     | Null | Key | Default | Extra |
+---------+----------+------+-----+---------+-------+
| ecode   | int(11)  | YES  |     | NULL    |       |
| name    | char(30) | YES  |     | NULL    |       |
| desig   | char(20) | YES  |     | NULL    |       |
| sgrade  | char(10) | YES  |     | NULL    |       |
| doj     | date     | YES  |     | NULL    |       |
| dob     | date     | YES  |     | NULL    |       |
+---------+----------+------+-----+---------+-------+
6 rows in set (0.02 sec)

mysql> select * from employee;
+-------+--------------+--------------+--------+------------+------------+
| ecode | name         | desig        | sgrade | doj        | dob        |
+-------+--------------+--------------+--------+------------+------------+
|   101 | abdul ahmed  | EXECUTUVE    | S03    | 2003-03-23 | 1980-01-13 |
|   102 | Ravi Chander | HEAD-IT      | S02    | 2010-02-12 | 1987-07-22 |
|   103 | John ken     | RECEPTIONIST | S03    | 2009-06-24 | 1983-02-24 |
|   104 | Nazar Ahmad  | GM           | S02    | 2006-08-11 | 1984-03-03 |
|   105 | PriyamSen    | CEO          | S01    | 2004-12-29 | 1982-01-19 |
+-------+--------------+--------------+--------+------------+------------+
5 rows in set (0.00 sec)

mysql> insert into salgrade values ('S01',56000,18000);
Query OK, 1 row affected (0.01 sec)
```

mysql> insert into salgrade values ('S02',32000,12000);
Query OK, 1 row affected (0.00 sec)

mysql> insert into salgrade values ('S03',24000,8000);
Query OK, 1 row affected (0.00 sec)

mysql> desc salgrade;

```
+---------+----------+------+-----+---------+-------+
| Field   | Type     | Null | Key | Default | Extra |
+---------+----------+------+-----+---------+-------+
| sgrade  | char(10) | YES  |     | NULL    |       |
| salary  | int(11)  | YES  |     | NULL    |       |
| hra     | int(11)  | YES  |     | NULL    |       |
+---------+----------+------+-----+---------+-------+
3 rows in set (0.00 sec)
```

mysql> select * from salgrade;

```
+---------+---------+-------+
| sgrade  | salary  | hra   |
+---------+---------+-------+
| S01     |  56000  | 18000 |
| S02     |  32000  | 12000 |
| S03     |  24000  |  8000 |
+---------+---------+-------+
3 rows in set (0.00 sec)
```

Q. To display the details of all EMPLOYEEs in descending order of DOJ.
Ans
mysql> select * from employee order by doj desc;

```
+-------+--------------+--------------+--------+------------+------------+
| ecode | name         | desig        | sgrade | doj        | dob        |
+-------+--------------+--------------+--------+------------+------------+
|   102 | Ravi Chander | HEAD-IT      | S02    | 2010-02-12 | 1987-07-22 |
|   103 | John ken     | RECEPTIONIST | S03    | 2009-06-24 | 1983-02-24 |
|   104 | Nazar Ahmad  | GM           | S02    | 2006-08-11 | 1984-03-03 |
|   105 | PriyamSen    | CEO          | S01    | 2004-12-29 | 1982-01-19 |
|   101 | abdul ahmed  | EXECUTUVE    | S03    | 2003-03-23 | 1980-01-13 |
+-------+--------------+--------------+--------+------------+------------+
5 rows in set (0.01 sec)
```

Q. To display NAME and DESIG of those EMPLOYEEs whose SALGRADE is either S02 or S03
Ans :
mysql> select name, desig from employee where sgrade in('S02','S03');

```
+--------------+--------------+
| name         | desig        |
+--------------+--------------+
| abdul ahmed  | EXECUTUVE    |
| Ravi Chander | HEAD-IT      |
| John ken     | RECEPTIONIST |
| Nazar Ahmad  | GM           |
+--------------+--------------+
4 rows in set (0.00 sec)
```

Q. To display the content of the entire EMPLOYEEs table, whose DOJ is in between '09-Feb- 2006' and '08-Aug-2009'.

Ans:
```
mysql> select * from employee where doj between '2006-02-09' and '2009-08-08';
+-------+-------------+--------------+--------+------------+------------+
| ecode | name        | desig        | sgrade | doj        | dob        |
+-------+-------------+--------------+--------+------------+------------+
|   103 | John ken    | RECEPTIONIST | S03    | 2009-06-24 | 1983-02-24 |
|   104 | Nazar Ahmad | GM           | S02    | 2006-08-11 | 1984-03-03 |
+-------+-------------+--------------+--------+------------+------------+
2 rows in set (0.00 sec)
```

Q To add a new row with the following content:

> 109,'Harish Roy','HEAD-IT','S02','9-Sep-2007','21-Apr-1983'

Ans :

mysql> insert into employee values (109,'Harish Roy','HEAD-IT','S02','2007-09-09','1983-04-21');
Query OK, 1 row affected (0.00 sec)

Give the output of the following SQL queries:

Q1. SELECT COUNT(SGRADE),SGRADE FROM EMPLOYEE GROUP BY SGRADE;

Ans
```
+---------------+--------+
| COUNT(SGRADE) | SGRADE |
+---------------+--------+
|             1 | S01    |
|             3 | S02    |
|             2 | S03    |
+---------------+--------+
3 rows in set (0.01 sec)
```

Q2. SELECT MIN(DOB),MAX(DOJ) FROM EMPLOYEE;

Ans :
```
mysql> SELECT MIN(DOB),MAX(DOJ) FROM EMPLOYEE;
+------------+------------+
| MIN(DOB)   | MAX(DOJ)   |
+------------+------------+
| 1980-01-13 | 2010-02-12 |
+------------+------------+
1 row in set (0.01 sec)
```

Q3. SELECT SGRADE, SALARY+HRA FROM SALGRADE WHERE SGRADE ='S02';

Ans :
```
mysql> SELECT SGRADE, SALARY+HRA FROM SALGRADE WHERE SGRADE ='S02';
+--------+------------+
| SGRADE | SALARY+HRA |
+--------+------------+
| S02    |      44000 |
+--------+------------+
1 row in set (0.00 sec)
```

Question No – 2

mysql> create table orders (orderid int(6), pname char(30), quantity int(2), rate int(2), sale_date date, discount int(2));
Query OK, 0 rows affected (0.02 sec)

```
mysql> desc orders;
+-----------+----------+------+-----+---------+-------+
| Field     | Type     | Null | Key | Default | Extra |
+-----------+----------+------+-----+---------+-------+
| orderid   | int(6)   | YES  |     | NULL    |       |
| pname     | char(30) | YES  |     | NULL    |       |
| quantity  | int(2)   | YES  |     | NULL    |       |
| rate      | int(2)   | YES  |     | NULL    |       |
| sale_date | date     | YES  |     | NULL    |       |
| discount  | int(2)   | YES  |     | NULL    |       |
+-----------+----------+------+-----+---------+-------+
6 rows in set (0.00 sec)
```

mysql> insert into orders values(1001,'Pen',10,20,'2019-10-05',NULL);
Query OK, 1 row affected (0.00 sec)

mysql> insert into orders values(1002,'Pencil',20,10,'2019-10-21',NULL);
Query OK, 1 row affected (0.00 sec)

mysql> insert into orders values(1003,'Book',10,100,'2019-11-02',50);
Query OK, 1 row affected (0.00 sec)

mysql> insert into orders values(1004,'Eraser',100,05,'2019-12-05',25);
Query OK, 1 row affected (0.00 sec)

mysql> insert into orders values(1005,'Copy',50,20,'2019-12-10',NULL);
Query OK, 1 row affected (0.00 sec)

```
mysql> select * from orders;
+---------+--------+----------+------+------------+----------+
| orderid | pname  | quantity | rate | sale_date  | discount |
+---------+--------+----------+------+------------+----------+
|    1001 | Pen    |       10 |   20 | 2019-10-05 |     NULL |
|    1002 | Pencil |       20 |   10 | 2019-10-21 |     NULL |
|    1003 | Book   |       10 |  100 | 2019-11-02 |       50 |
|    1004 | Eraser |      100 |    5 | 2019-12-05 |       25 |
|    1005 | Copy   |       50 |   20 | 2019-12-10 |     NULL |
+---------+--------+----------+------+------------+----------+
```

Q. Write SQL query to display Pname, Quantity and Rate for all the orders that are either Pencil or Pen.
Ans:
```
mysql> select pname,quantity,rate from orders where pname in ('Pencil','Pen');
+--------+----------+------+
| pname  | quantity | rate |
+--------+----------+------+
| Pen    |       10 |   20 |
| Pencil |       20 |   10 |
+--------+----------+------+
2 rows in set (0.00 sec)
```

Q. Write SQL query to display the orders which are not getting any Discount.
Ans :

```
mysql> select * from orders where discount is NULL;
+---------+--------+----------+------+------------+----------+
| orderid | pname  | quantity | rate | sale_date  | discount |
+---------+--------+----------+------+------------+----------+
|    1001 | Pen    |       10 |   20 | 2019-10-05 |     NULL |
|    1002 | Pencil |       20 |   10 | 2019-10-21 |     NULL |
|    1005 | Copy   |       50 |   20 | 2019-12-10 |     NULL |
+---------+--------+----------+------+------------+----------+
3 rows in set (0.00 sec)
```

Q. Write SQL query to display the Pname, Quantity and Sale_date for all the orders whose total cost (Quantity * Rate) is greater than 500.

Ans :
```
mysql> select pname,quantity, sale_date from orders where quantity*rate > 500;
+-------+----------+------------+
| pname | quantity | sale_date  |
+-------+----------+------------+
| Book  |       10 | 2019-11-02 |
| Copy  |       50 | 2019-12-10 |
+-------+----------+------------+
2 rows in set (0.00 sec)
```

Q. Write SQL query to display the orders whose Rate is in the range 20 to 100.
Ans :
```
mysql> select * from orders where rate between 20 and 100;
+---------+-------+----------+------+------------+----------+
| orderid | pname | quantity | rate | sale_date  | discount |
+---------+-------+----------+------+------------+----------+
|    1001 | Pen   |       10 |   20 | 2019-10-05 |     NULL |
|    1003 | Book  |       10 |  100 | 2019-11-02 |       50 |
|    1005 | Copy  |       50 |   20 | 2019-12-10 |     NULL |
+---------+-------+----------+------+------------+----------+
3 rows in set (0.00 sec)
```

Find the output of the following SQL commands
Q. SELECT Pname, Quantity from Orders WHERE Pname LIKE('_e%');
Ans
```
mysql> SELECT Pname, Quantity from Orders WHERE Pname LIKE '_e%';
+--------+----------+
| Pname  | Quantity |
+--------+----------+
| Pen    |       10 |
| Pencil |       20 |
+--------+----------+
2 rows in set (0.00 sec)
```

Q. SELECT Pname, Quantity, Rate FROM Orders Order BY Quantity DESC;
Ans :

```
mysql> SELECT Pname, Quantity, Rate FROM Orders Order BY Quantity DESC
    -> ;
+--------+----------+------+
| Pname  | Quantity | Rate |
+--------+----------+------+
| Eraser |      100 |    5 |
| Copy   |       50 |   20 |
| Pencil |       20 |   10 |
| Pen    |       10 |   20 |
| Book   |       10 |  100 |
+--------+----------+------+
5 rows in set (0.00 sec)
```

Question – 3

mysql> create table books (book_id int(6), book_name char(30), author_name char(30), publisher char(20), price int(4), type char(20), qty int(3));
Query OK, 0 rows affected (0.02 sec)

```
mysql> desc books;
+-------------+----------+------+-----+---------+-------+
| Field       | Type     | Null | Key | Default | Extra |
+-------------+----------+------+-----+---------+-------+
| book_id     | int(6)   | YES  |     | NULL    |       |
| book_name   | char(30) | YES  |     | NULL    |       |
| author_name | char(30) | YES  |     | NULL    |       |
| publisher   | char(20) | YES  |     | NULL    |       |
| price       | int(4)   | YES  |     | NULL    |       |
| type        | char(20) | YES  |     | NULL    |       |
| qty         | int(3)   | YES  |     | NULL    |       |
+-------------+----------+------+-----+---------+-------+
7 rows in set (0.01 sec)
```

mysql> create table issued (book_id int(5), qty_issued int(3));
Query OK, 0 rows affected (0.02 sec)

mysql> insert into books values ('k001','let us c','sanjay mukharjee', 'epb',450,'comp', 15), ('p001','Genuine','j mukhi', 'first publ.',755,'fiction',24);
Query OK, 2 rows affected (0.00 sec)
Records: 2 Duplicates: 0 Warnings: 0

mysql> insert into books values ('m001','mastering c++','kanetkar', 'epb',165,'comp', 60), ('n002','vc++ advance','P.Purohit', 'TDH',250,'comp',45);
Query OK, 2 rows affected (0.00 sec)
Records: 2 Duplicates: 0 Warnings: 0

mysql> insert into books values ('k002','programming with python','sanjeev', 'first publ.',350,'fiction', 30), ('n003','Python Projects','rakesh kumar', 'TDH',350,'comp',55);
Query OK, 2 rows affected (0.00 sec)
Records: 2 Duplicates: 0 Warnings: 0

```
mysql> select * from books;
+---------+-----------------------+-----------------+--------------+-------+---------+------+
| book_id | book_name             | author_name     | publisher    | price | type    | qty  |
+---------+-----------------------+-----------------+--------------+-------+---------+------+
| k001    | let us c              | sanjay mukharjee | epb          |   450 | comp    |   15 |
| p001    | Genuine               | j mukhi         | first publ.  |   755 | fiction |   24 |
| m001    | mastering c++         | kanetkar        | epb          |   165 | comp    |   60 |
| n002    | vc++ advance          | P.Purohit       | TDH          |   250 | comp    |   45 |
| k002    | programming with python | sanjeev       | first publ.  |   350 | fiction |   30 |
| n003    | Python Projects       | rakesh kumar    | TDH          |   350 | comp    |   55 |
+---------+-----------------------+-----------------+--------------+-------+---------+------+
6 rows in set (0.00 sec)
```

mysql> alter table issued modify book_id char(10);
Query OK, 0 rows affected (0.02 sec)
Records: 0 Duplicates: 0 Warnings: 0

mysql> insert into issued values('L02',13),('L04',5),('L05',21);
Query OK, 3 rows affected (0.00 sec)
Records: 3 Duplicates: 0 Warnings: 0

```
mysql> desc issued;
+------------+---------+------+-----+---------+-------+
| Field      | Type    | Null | Key | Default | Extra |
+------------+---------+------+-----+---------+-------+
| book_id    | int(5)  | YES  |     | NULL    |       |
| qty_issued | int(3)  | YES  |     | NULL    |       |
+------------+---------+------+-----+---------+-------+
2 rows in set (0.00 sec)

mysql> select * from issued;
+---------+------------+
| book_id | qty_issued |
+---------+------------+
| L02     |         13 |
| L04     |          5 |
| L05     |         21 |
+---------+------------+
3 rows in set (0.00 sec)
```

Q. To show the books of FIRST PUBL. Publishers written by P. Purohit.

Ans:
mysql> select * from books where publisher = 'first publ.' and author_name ='P.Purohit';
Empty set (0.00 sec)

Q. To display cost of all the books published for FIRST PUBL.
```
mysql> select publisher,sum(price*qty) from books where publisher ='first publ.';
+-------------+----------------+
| publisher   | sum(price*qty) |
+-------------+----------------+
| first publ. |          28620 |
+-------------+----------------+
1 row in set (0.00 sec)
```

Q Depreciate the price of all books of EPB publishers by 5%.
Ans :

mysql> update books set price = price -price*0.05 where publisher ='epb';
Query OK, 2 rows affected (0.00 sec)
Rows matched: 2 Changed: 2 Warnings: 0

Q. To display the BOOK_NAME and price of the books, more than 3 copies of which have been issued.

And :

mysql> select book_name, price from books, issued where books.book_id = issued.book_id and qty_issued > 3;

```
mysql> select book_name, price from books, issued where books.book_id = issued.book_id and qty_issued > 3;
+-------------------------+-------+
| book_name               | price |
+-------------------------+-------+
| Genuine                 |   755 |
| vc++ advance            |   250 |
| programming with python |   350 |
+-------------------------+-------+
3 rows in set (0.00 sec)
```

Q. To show total cost of books of each type.
Ans:
mysql> select type, sum(price*qty) from books group by type;
```
mysql> select type, sum(price*qty) from books group by type;
+---------+----------------+
| type    | sum(price*qty) |
+---------+----------------+
| comp    |          46340 |
| fiction |          28620 |
+---------+----------------+
2 rows in set (0.00 sec)
```

Q. To show the details of the costliest book.
Ans :

```
mysql> select * from books where price = (select max(price) from books);
+---------+-----------+-------------+-------------+-------+---------+------+
| book_id | book_name | author_name | publisher   | price | type    | qty  |
+---------+-----------+-------------+-------------+-------+---------+------+
| p001    | Genuine   | j mukhi     | first publ. |   755 | fiction |   24 |
+---------+-----------+-------------+-------------+-------+---------+------+
1 row in set (0.01 sec)
```

Question No – 4

mysql> create table schoolbus (rtno int(2), area_covered char(3), capacity int(3), noofstudents int(3), distance int(2), transporter char(30), charges int(10));
Query OK, 0 rows affected (0.03 sec)

```
mysql> desc schoolbus;
+--------------+----------+------+-----+---------+-------+
| Field        | Type     | Null | Key | Default | Extra |
+--------------+----------+------+-----+---------+-------+
| rtno         | int(2)   | YES  |     | NULL    |       |
| area_covered | char(30) | YES  |     | NULL    |       |
| capacity     | int(3)   | YES  |     | NULL    |       |
| noofstudents | int(3)   | YES  |     | NULL    |       |
| distance     | int(2)   | YES  |     | NULL    |       |
| transporter  | char(30) | YES  |     | NULL    |       |
| charges      | int(10)  | YES  |     | NULL    |       |
+--------------+----------+------+-----+---------+-------+
7 rows in set (0.00 sec)
```

mysql> insert into schoolbus values(1,'vasunt kunj',100,120,10,'shivam travels',100000);
Query OK, 1 row affected (0.00 sec)

mysql> insert into schoolbus values(2,'hauz khas',80,80,10,'anand travels',85000);
Query OK, 1 row affected (0.00 sec)

mysql> insert into schoolbus values(3,'pritam pura',60,55,30,'anand travels',60000);
Query OK, 1 row affected (0.00 sec)

mysql> insert into schoolbus values(4,'rohini',100,90,35,'anand travels',100000);
Query OK, 1 row affected (0.00 sec)

mysql> insert into schoolbus values(5,'Yamnuna vihar',50,60,25,'Bhalla travels',55000);
Query OK, 1 row affected (0.00 sec)

mysql> insert into schoolbus values(6,'Krishna nagar',70,80,30,'Yadav travels',80000);
Query OK, 1 row affected (0.00 sec)

mysql> insert into schoolbus values(7,'Vashundhara',100,110,20,'Yadav travels',100000);
Query OK, 1 row affected (0.00 sec)

mysql> insert into schoolbus values(8,'pashchim vihar',40,40,20,'Speed travels',55000);
Query OK, 1 row affected (0.01 sec)

mysql> insert into schoolbus values(9,'saket',120,120,10,'Speed travels',100000);
Query OK, 1 row affected (0.00 sec)

mysql> insert into schoolbus values(10,'janakpuri',100,100,20,'kishan travels',950000);
Query OK, 1 row affected (0.00 sec)

```
mysql> select * from schoolbus;
+------+---------------+----------+-------------+----------+----------------+--------+
| rtno | area_covered  | capacity | noofstudents | distance | transporter    | charges |
+------+---------------+----------+-------------+----------+----------------+--------+
|    1 | vasunt kunj   |      100 |         120 |       10 | shivam travels | 100000 |
|    2 | hauz khas     |       80 |          80 |       10 | anand travels  |  85000 |
|    3 | pritam pura   |       60 |          55 |       30 | anand travels  |  60000 |
|    4 | rohini        |      100 |          90 |       35 | anand travels  | 100000 |
|    5 | Yamnuna vihar |       50 |          60 |       25 | Bhalla travels |  55000 |
|    6 | Krishna nagar |       70 |          80 |       30 | Yadav travels  |  80000 |
|    7 | Vashundhara   |      100 |         110 |       20 | Yadav travels  | 100000 |
|    8 | pashchim vihar|       40 |          40 |       20 | Speed travels  |  55000 |
|    9 | saket         |      120 |         120 |       10 | Speed travels  | 100000 |
|   10 | janakpuri     |      100 |         100 |       20 | kishan travels | 950000 |
+------+---------------+----------+-------------+----------+----------------+--------+
10 rows in set (0.00 sec)
```

Q. To show all information of students where capacity is more than the no. of students in order of rtno.

Ans :

```
mysql> select * from schoolbus where capacity > noofstudents order by rtno;
+------+-------------+----------+-------------+----------+---------------+--------+
| rtno | area_covered | capacity | noofstudents | distance | transporter   | charges |
+------+-------------+----------+-------------+----------+---------------+--------+
|    3 | pritam pura |       60 |          55 |       30 | anand travels |  60000 |
|    4 | rohini      |      100 |          90 |       35 | anand travels | 100000 |
+------+-------------+----------+-------------+----------+---------------+--------+
2 rows in set (0.00 sec)
```

Q. To show area_covered for buses covering more than 20 km., but charges less than 80000.

Ans :

```
mysql> select * from schoolbus where distance>20 and charges < 80000;
+------+---------------+----------+-------------+----------+----------------+--------+
| rtno | area_covered  | capacity | noofstudents | distance | transporter    | charges |
+------+---------------+----------+-------------+----------+----------------+--------+
|    3 | pritam pura   |       60 |          55 |       30 | anand travels  |  60000 |
|    5 | Yamnuna vihar |       50 |          60 |       25 | Bhalla travels |  55000 |
+------+---------------+----------+-------------+----------+----------------+--------+
2 rows in set (0.00 sec)
```

Q. To show transporter-wise total no. of students travelling.
Ans:

```
mysql> select transporter, sum(noofstudents) from schoolbus group by transporter;
+----------------+-------------------+
| transporter    | sum(noofstudents) |
+----------------+-------------------+
| anand travels  |               225 |
| Bhalla travels |                60 |
| kishan travels |               100 |
| shivam travels |               120 |
| Speed travels  |               160 |
| Yadav travels  |               190 |
+----------------+-------------------+
6 rows in set (0.00 sec)
```

Q. To show rtno, area_covered and average cost per student for all routes where average cost per student is—

charges/noofstudents.

Ans

```
mysql> select rtno, area_covered, charges/noofstudents 'average cost' from schoolbus;
+------+---------------+--------------+
| rtno | area_covered  | average cost |
+------+---------------+--------------+
|    1 | vasunt kunj   |     833.3333 |
|    2 | hauz khas     |    1062.5000 |
|    3 | pritam pura   |    1090.9091 |
|    4 | rohini        |    1111.1111 |
|    5 | Yamnuna vihar |     916.6667 |
|    6 | Krishna nagar |    1000.0000 |
|    7 | Vashundhara   |     909.0909 |
|    8 | pashchim vihar|    1375.0000 |
|    9 | saket         |     833.3333 |
|   10 | janakpuri     |    9500.0000 |
+------+---------------+--------------+
10 rows in set (0.00 sec)
```

Q. Add a new record with the following data:

   (11, "Motibagh",35,32,10, "kisan tours", 35000)

Ans

mysql> insert into schoolbus values(11,'motibagh', 35,32,10,'kishan travels', 35000);

Query OK, 1 row affected (0.02 sec)

Give the output considering the original relation asgiven:

select sum(distance) from schoolbus where transporter= "Yadav travels";
```
mysql> select sum(distance) from schoolbus where transporter= "Yadav travels";
+---------------+
| sum(distance) |
+---------------+
|            50 |
+---------------+
1 row in set (0.00 sec)
```

select min(noofstudents) from schoolbus;
```
mysql> select min(noofstudents) from schoolbus;
+-------------------+
| min(noofstudents) |
+-------------------+
|                32 |
+-------------------+
1 row in set (0.00 sec)
```

select avg(charges) from schoolbus where transporter= "Anand travels";

```
mysql> select avg(charges) from schoolbus where transporter= "Anand travels";
+--------------+
| avg(charges) |
+--------------+
|   81666.6667 |
+--------------+
1 row in set (0.00 sec)
```

select distinct transporter from schoolbus;

```
mysql> select distinct transporter from schoolbus;
+----------------+
| transporter    |
+----------------+
| shivam travels |
| anand travels  |
| Bhalla travels |
| Yadav travels  |
| Speed travels  |
| kishan travels |
+----------------+
6 rows in set (0.00 sec)
```