

LAB CYCLE 1
PART -A

EXPERIMENT-2:

1. Perform the following:

Consider the Company database with following Schema
EMPLOYEE(FNAME, MINIT, LNAME, SSN, BDATE, ADDRESS, SEX, SALARY, SUPERSSN, DNO)
DEPARTMENT (DNAME, DNO, MGRSSN, MSRSTARTDATE)
DEPT_LOCATIONS (DNO, DLOCATION)
PROJECT (PNAME, PNO, PLOCATION, DNUM)
WORKS_ON (ESSN, PNO, HOURS)
DEPENDENT (ESSN, DEPENDENT_NAME, SEX, BDATE, RELATIONSHIP)

EXPERIMENT-2

Perform the following:

1. Create company database
2. Viewing all databases
3. Viewing all Tables in a Database,
4. Creating Tables (With and Without Constraints)
5. Inserting/Updating/Deleting Records in a Table
6. Saving (Commit) and Undoing (rollback)

SOLUTION:

1. Creating a Database
CREATE DATABASE Company;
2. Viewing all databases
SHOW DATABASES;
3. Viewing all Tables in a Database,
SHOW tables;
4. Creating Tables (With and Without Constraints)

DEPARTMENT TABLE CODE:

```
create table DEPARTMENT61(DNO NUMBER primary key,DNAME varchar2(20),MGRstartdate date);
```

Table created

DESC DEPARTMENT61;

OUTPUT:

Table	Column	Data Type	Length	Precision	Scale	Primary
DEPARTMENT61	DNO	Number	-	-	-	1
-	DNAME	Varchar2	20	-	-	nullable
-	MGRSTARTDATE	Date	7	-	-	-
-	nullable	-	-	-	-	-

EMPLOYEE TABLE CODE

```
CREATE TABLE EMPLOYEE61(SSN VARCHAR2(10)PRIMARY KEY, FNAME VARCHAR2(10), MINIT
char, LNAME VARCHAR2(10), ADDRESS VARCHAR2(10), SEX CHAR, SALARY INTEGER, SUPERSSN
REFERENCES EMPLOYEE61(SSN), DNO REFERENCES DEPARTMENT61(DNO), BDATE DATE);
```

Table created

```
DESC EMPLOYEE61;
```

OUTPUT:

Table Key	Column	Nullable	Default	Data Type	Length	Precision	Scale	Primary
EMPLOYEE61	SSN	-	Varchar2	10	-	-	1	-
-	FNAME	-	Varchar2	10	-	-	-	nullable
-	MINIT	-	Varchar2	10	-	-	-	nullable
-	LNAME	-	Varchar2	10	-	-	-	nullable
-	ADDRESS	nullable	-	Varchar2	10	-	-	-
-	SEX	-	Char	1	-	-	-	nullable
-	SALARY	nullable	-	Number	-	-	0	-
-	SUPERSSN	-	Varchar2	10	-	-	-	nullable
-	DNO	nullable	-	Number	-	-	-	-
-	BDATE	-	Date	7	-	-	-	nullable

NOTE : Once DEPARTMENT and EMPLOYEE tables are created we must alter department table to add foreign constraint MGRSSN using sql command.

```
ALTER TABLE DEPARTMENT61 ADD MGRSSN REFERENCES EMPLOYEE61(SSN);
```

Table Altered

```
DESC DEPARTMENT61;
```

OUTPUT:

Table Key	Column	Nullable	Default	Data Type	Length	Precision	Scale	Primary
DEPARTMENT61	DNO	-	-	Number	-	-	-	1
-	DNAME	-	Varchar2	20	-	-	-	nullable
-	MGRSTARTDATE	nullable	-	Date	7	-	-	-
-	MGRSSN	nullable	-	Varchar2	10	-	-	-

DLOCATION TABLE CODE

```
CREATE TABLE DLOCATION61( DLOC VARCHAR2(20) Primary key, DNO REFERENCES
```

DEPARTMENT61(DNO));

Table created

DESC DLOCATIONS61;

OUTPUT:

Table	Column	Data Type	Length	Precision	Scale	Primary Key
DLOCATION61	DLOC	Varchar2	20	-	1	-
-	DNO	Number	-	-	-	nullable

PROJECT TABLE CODE:

CREATE TABLE PROJECT61(PNO NUMBER PRIMARY KEY,PNAME VARCHAR2(20),PLOCATION VARCHAR2(20),DNO REFERENCES DEPARTMENT61(DNO));

Table created

DESC PROJECT61;

OUTPUT:

Table	Column	Data Type	Length	Precision	Scale	Primary
PROJECT61	PNO	Number	-	-	1	-
-	PNAME	Varchar2	20	-	-	nullable
-	PLOCATION	Varchar2	20	-	-	nullable
-	DNO	Number	-	-	-	nullable

WORKS_ON TABLE CODE:

CREATE TABLE WORKS_ON61(SSN REFERENCES EMPLOYEE61(SSN),PNO REFERENCES PROJECT61(PNO),HOURS NUMBER);

Table created

DESC WORKS_ON61;

OUTPUT:

Table	Column	Data Type	Length	Precision	Scale	Primary
WORKS_ON61	SSN	Varchar2	10	-	-	nullable

```

        PNO          Number          -    -          0    -
nullable -          -
        HOURS       Number          -    -          -    -
nullable -          -

```

```

CREATE TABLE DEPENDENT61(ESSN REFERENCES EMPLOYEE61(SSN),DEPENDENT_NAME
VARCHAR2(10),SEX CHAR,BDATE DATE,RELATIONSHIP VARCHAR2(10));

```

Table created

```

DESC DEPENDENT61;

```

OUTPUT:

Table	Column	Data Type	Length	Precision	Scale	Primary
DEPENDENT61	ESSN	Varchar2	10	-	-	nullable
	DEPENDENT_NAME	Varchar2	10	-	-	nullable
	SEX	Char	1	-	-	nullable
	BDATE	Date	7	-	-	nullable
	RELATIONSHIP	Varchar2	10	-	-	nullable

Inserting values into employee table:

```

INSERT INTO EMPLOYEE61(SSN,FNAME,MINIT,LNAME,ADDRESS,SEX,SALARY,BDATE)
VALUES( 'UBCA01','PUNITH','R','GOWDA','BANGLORE','M',25000,'11-JAN-2003');
1 row updated
INSERT INTO EMPLOYEE61(SSN,FNAME,MINIT,LNAME,ADDRESS,SEX,SALARY,BDATE)
VALUES( 'UBCA02','DEEPAK','R','SINGH','BANGLORE','M',35000,'16-FEB-2003');
1 row updated
INSERT INTO EMPLOYEE61(SSN,FNAME,MINIT,LNAME,ADDRESS,SEX,SALARY,BDATE)
VALUES( 'UBCA03','RAJATH','S','GOWDA','BANGLORE','M',45000,'18-JAN-2003');
1 row updated
INSERT INTO EMPLOYEE61(SSN,FNAME,MINIT,LNAME,ADDRESS,SEX,SALARY,BDATE)
VALUES( 'UBCA04','SUSHAN','H','SHETTY','BANGLORE','M',25000,'11-SEP-2003');
1 row updated
INSERT INTO EMPLOYEE61(SSN,FNAME,MINIT,LNAME,ADDRESS,SEX,SALARY,BDATE)
VALUES( 'UBCA05','SATHISH','P','KUMAR','BANGLORE','M',35000,'21-JAN-2002');
1 row updated
INSERT INTO EMPLOYEE61(SSN,FNAME,MINIT,LNAME,ADDRESS,SEX,SALARY,BDATE)
VALUES( 'UBCA06','SHWETHA','M','GOWDA','BANGLORE','F',65000,'18-MAR-2003');
1 row updated
INSERT INTO EMPLOYEE61(SSN,FNAME,MINIT,LNAME,ADDRESS,SEX,SALARY,BDATE)
VALUES( 'UBCA07','BHARATH','D','GOWDA','MANGLORE','M',25000,'14-OCT-2003');
1 row updated
INSERT INTO EMPLOYEE61(SSN,FNAME,MINIT,LNAME,ADDRESS,SEX,SALARY,BDATE)
VALUES( 'UBCA08','LALITHA','R','GOWDA','BANGLORE','F',45000,'12-JAN-2003');
1 row updated
INSERT INTO EMPLOYEE61(SSN,FNAME,MINIT,LNAME,ADDRESS,SEX,SALARY,BDATE)
VALUES( 'UBCA09','SHRAVANI','R','GOWDA','BANGLORE','F',25000,'18-JUN-2003');
1 row updated
INSERT INTO EMPLOYEE61(SSN,FNAME,MINIT,LNAME,ADDRESS,SEX,SALARY,BDATE)

```

```
VALUES( 'UBCA10', 'RAGHU', 'R', 'SHETTY', 'BANGLORE', 'M', 25000, '19-JAN-2003');
1 row updated
```

```
SELECT * FROM EMPLOYEE61;
```

OUTPUT:

SSN	FNAME	MINIT	LNAME	ADDRESS	SEX	SALARY	BDATE
UBCA01		PUNITH	R	GOWDA BANGLORE	M	25000	11-Jan-03
UBCA02		DEEPAK	R	SINGH BANGLORE	M	35000	16-Feb-03
UBCA03		RAJATH	S	GOWDA BANGLORE	M	45000	18-Jan-03
UBCA04		SUSHAN	H	SHETTY BANGLORE	M	25000	11-Sep-03
UBCA05		SATHISH	P	KUMAR BANGLORE	M	35000	21-Jan-02
UBCA06		SHWETHA	M	GOWDA BANGLORE	F	65000	18-Mar-03
UBCA07		BHARATH	D	GOWDA MANGLORE	M	25000	14-Oct-03
UBCA08		LALITHA	R	GOWDA BANGLORE	F	45000	12-Jan-03
UBCA09		SHRAVANI	R	GOWDA BANGLORE	F	25000	18-Jun-03
UBCA10		RAGHU	R	SHETTY BANGLORE	M	25000	19-Jan-03

Inserting values into department table:

```
INSERT INTO DEPARTMENT61 VALUES(1, 'RESEARCH', '01-JAN-2000', 'UBCA01');
1 row updated
```

```
INSERT INTO DEPARTMENT61 VALUES(3, 'ACCOUNTS', '01-FEB-2001', 'UBCA02');
1 row updated
```

```
INSERT INTO DEPARTMENT61 VALUES(5, 'BCA', '01-JAN-2000', 'UBCA03');
1 row updated
```

```
SELECT * FROM DEPARTMENT61;
```

OUTPUT:

DNO	DNAME	MGRSTARTDATE	MGRSSN
1	RESEARCH	01-Jan-00	UBCA01
3	ACCOUNTS	01-Feb-01	UBCA02
5	BCA	01-Jan-00	UBCA03

Inserting values into employee table:

```
UPDATE EMPLOYEE61 SET DNO=1, SUPERSSN='UBCA10' WHERE SSN='UBCA01';
1 row updated
```

```
UPDATE EMPLOYEE61 SET DNO=3, SUPERSSN='UBCA10' WHERE SSN='UBCA02';
1 row updated
```

```
UPDATE EMPLOYEE61 SET DNO=5, SUPERSSN='UBCA10' WHERE SSN='UBCA03';
1 row updated
```

```
UPDATE EMPLOYEE61 SET DNO=1, SUPERSSN='UBCA10' WHERE SSN='UBCA04';
1 row updated
```

```
UPDATE EMPLOYEE61 SET DNO=3, SUPERSSN='UBCA10' WHERE SSN='UBCA05';
1 row updated
```

```
UPDATE EMPLOYEE61 SET DNO=3, SUPERSSN='UBCA10' WHERE SSN='UBCA06';
1 row updated
```

```
UPDATE EMPLOYEE61 SET DNO=3, SUPERSSN='UBCA10' WHERE SSN='UBCA07';
1 row updated
```

```
UPDATE EMPLOYEE61 SET DNO=5, SUPERSSN='UBCA10' WHERE SSN='UBCA08';
1 row updated
```

```
UPDATE EMPLOYEE61 SET DNO=5, SUPERSSN='UBCA10' WHERE SSN='UBCA09';
1 row updated
```

```
SELECT * FROM EMPLOYEE61;
```

OUTPUT:

OUTPUT:

SSN	FNAME	MINIT	LNAME	ADDRESS	SEX	SALARY	BDATE
UBCA01		PUNITH	R	GOWDA BANGLORE	M	25000	11-Jan-03
	SUPERSSN	DNO					UBCA10
	1						
UBCA02		DEEPAK	R	SINGH BANGLORE	M	35000	16-Feb-03
	3						UBCA10
UBCA03		RAJATH	S	GOWDA BANGLORE	M	45000	18-Jan-03
	5						UBCA10
UBCA04		SUSHAN	H	SHETTY BANGLORE	M	25000	11-Sep-03
	UBCA10		1				
UBCA05		SATHISH	P	KUMAR BANGLORE	M	35000	21-Jan-02
	3						UBCA10
UBCA06		SHWETHA	M	GOWDA BANGLORE	F	65000	18-Mar-03
	3						UBCA10
UBCA07		BHARATH	D	GOWDA MANGLORE	M	25000	14-Oct-03
	3						UBCA10
UBCA08		LALITHA	R	GOWDA BANGLORE	F	45000	12-Jan-03
	5						UBCA10
UBCA09		SHRAVANI	R	GOWDA BANGLORE	F	25000	18-Jun-03
	5						UBCA10
UBCA10		RAGHU	R	SHETTY BANGLORE	M	25000	19-Jan-03
	-						-

Inserting values into DLOCATION table:

```
INSERT INTO DLOCATION61 VALUES('BANGLORE',1);
1 row updated
INSERT INTO DLOCATION61 VALUES('HYDERABAD',3);
1 row updated
INSERT INTO DLOCATION61 VALUES('MANGLORE',5);
1 row updated
```

```
SELECT *FROM DLOCATION61;
```

OUTPUT:

DLOC	DNO
BANGLORE	1
MANGLORE	5
HYDERABAD	3

Inserting values into PROJECT table:

```
INSERT INTO PROJECT61 VALUES(100,'DOTNET','BANGLORE',1);
1 row updated
INSERT INTO PROJECT61 VALUES(101,'WEBDEVELOPMENT','BANGLORE',1);
1 row updated
INSERT INTO PROJECT61 VALUES(102,'EMBEDDED_C','HYDERABAD',3);
1 row updated
INSERT INTO PROJECT61 VALUES(103,'METRO_RAIL','HYDERABAD',3);
1 row updated
INSERT INTO PROJECT61 VALUES(104,'ATTENDENCE_REPORT','MANGLORE',5);
1 row updated
INSERT INTO PROJECT61 VALUES(105,'DATA_SCIENCE','MANGLORE',5);
1 row updated
```

```
SELECT * FROM PROJECT61;
```

OUTPUT:

PNO	PNAME	PLOCATION	DNO
100	DOTNET	BANGLORE	1
101	WEBDEVELOPMENT	BANGLORE	1
102	EMBEDDED_C	HYDERABAD	3
103	METRO_RAIL	HYDERABAD	3
104	ATTENDENCE_REPORT	MANGLORE	5
105	DATA_SCIENCE	MANGLORE	5

Inserting values into WORKS_ON table:

```
INSERT INTO WORKS_ON61 VALUES('UBCA01',100,36);
1 row updated
INSERT INTO WORKS_ON61 VALUES('UBCA02',102,46);
1 row updated
INSERT INTO WORKS_ON61 VALUES('UBCA03',104,36);
1 row updated
INSERT INTO WORKS_ON61 VALUES('UBCA04',101,36);
1 row updated
INSERT INTO WORKS_ON61 VALUES('UBCA05',102,36);
1 row updated
INSERT INTO WORKS_ON61 VALUES('UBCA06',103,46);
1 row updated
INSERT INTO WORKS_ON61 VALUES('UBCA07',103,46);
1 row updated
INSERT INTO WORKS_ON61 VALUES('UBCA08',104,56);
1 row updated
INSERT INTO WORKS_ON61 VALUES('UBCA09',105,56);
1 row updated
```

```
SELECT * FROM WORKS_ON61;
```

OUTPUT:

SSN	PNO	HOURS
UBCA02	102	46
UBCA03	104	36
UBCA04	101	36
UBCA05	102	36
UBCA06	103	46
UBCA07	103	46
UBCA08	104	56
UBCA09	105	56
UBCA01	100	36

Inserting values into DEPENDENT table:

```
INSERT INTO DEPENDENT61 VALUES ('UBCA01','RAMYA','F','01-JAN-2003','WIFE');
1 row updated
INSERT INTO DEPENDENT61 VALUES ('UBCA02','MAJU','F','01-FEB-2003','Daughter');
1 row updated
INSERT INTO DEPENDENT61 VALUES ('UBCA03','RAGHU','M','23-JAN-2003','SON');
1 row updated
```

```
SELECT * FROM DEPENDENT61;
```

OUTPUT:

ESSN	DEPENDENT_NAME	SEX	BDATE	RELATIONSHIP
UBCA01	RAMYA	F	01-Jan-03	WIFE

```

UBCA02    MAJU      F      01-Feb-03  Daguther
UBCA03    RAGHU     M      23-Jan-03  SON

```

```
DELETE FROM DEPENDENT61 WHERE ESSN='UBCA01';
```

1 row dropped

```
SELECT * FROM DEPENDENT61;
```

OUTPUT:

```

ESSN  DEPENDENT_NAME  SEX  BDATE      RELATIONSHIP
UBCA02    MAJU      F    01-Feb-03  WIFE
UBCA03    RAGHU     M    23-Jan-03  SON

```

EXPERIMENT 3:

3. Perform the following:
 Altering a Table,
 Dropping/Truncating/Renaming Tables,
 Backing up / Restoring a Database.

Consider STUDENT table:

```
STUDENTNO  SNAME LOC
```

Perform the following:

1. Create the student table.
2. Rename the table student as KLESTUDENTLIST.
3. Add a new column PINCODE with not null constraints to the existing table DEPT.
4. All constraints and views that reference the column are dropped automatically, along with the column.
5. Rename the column SNAME to STUDENT_NAME in dept table.
6. Change the data type of column STUDENTNO as CHAR with size 10.
7. Truncate table to delete the records.
8. Delete table.

SOLUTION:

Create Table

```
1.CREATE TABLE STUDENT(STUDENTNO INTEGER primary key, SNAME VARCHAR2(10),LOC
VARCHAR2(4));
```

Table created.

```
DESC STUDENT;
```

OUTPUT:

Table	Column	Data Type	Length	Precision	Scale	Primary
STUDENT	STUDENTNO	Number	-	-	0	1
-	SNAME	Varchar2	10	-	-	-
-	LOC	Varchar2	4	-	-	-

5. Rename the column SNAME to STUDENT_NAME in KLESTUDENTLIST table

```
ALTER TABLE KLESTUDENTLIST RENAME COLUMN SNAME TO STUDENT_NAME ;
```

Table altered.

```
DESC KLESTUDENTLIST;
```

OUTPUT:

Table	Primary Key	Column	Nullable	Data Type	Length	Precision	Scale
KLESTUDENTLIST	-	STUDENTNO	-	Number	-	-	0 1
-	-	STUDENT_NAME	-	Varchar2	10	-	-
-	-	PINCODE	-	Number	-	6	0 -

6. Change the datatype of column STUDENTNO as VARCHAR with size 10

```
ALTER TABLE KLESTUDENTLIST MODIFY STUDENTNO VARCHAR2(10);
```

Table altered.

```
DESC KLESTUDENTLIST;
```

q10OUTPUT:

Table	Primary Key	Column	Nullable	Data Type	Length	Precision	Scale
KLESTUDENTLIST	-	STUDENTNO	-	Varchar2	10	-	1
-	-	STUDENT_NAME	-	Varchar2	10	-	-
-	-	PINCODE	-	Number	-	6	0 -

7. Truncate table to delete the records.

```
INSERT INTO KLESTUDENTLIST VALUES('UAB101', 'PUNITH', 560012);
```

1 row updated

```
INSERT INTO KLESTUDENTLIST VALUES('UAB102', 'RAHUL', 560012);
```

1 row updated

```
INSERT INTO KLESTUDENTLIST VALUES('UAB103', 'RAJATH', 560012);
```

1 row updated

```
SELECT * FROM KLESTUDENTLIST;
```

output:

STUDENTNO	STUDENT_NAME	PINCODE
UAB101	PUNITH	560012
UAB102	RAHUL	560012
UAB103	RAJATH	560012

```
TRUNCATE TABLE KLESTUDENTLIST;
```

```
SELECT * FROM KLESTUDENTLIST;
```

OUTPUT: No Data found

Truncate MEANS it deletes the table information.

8. Delete table

DROP TABLE KLESTUDENTLIST;

Table dropped.

KLESTUDENTLIST table deleted.

EXPERENT - 4:

Consider EMPLOYEEESALARY Table:

ENO NAME DEPT DOJ SALARY

4. For a given set of relation schemes, create tables and perform the following Simple Queries, Simple Queries with Aggregate functions, Queries with Aggregate functions (group by and having clause).

Perform the following

1. Create table salary
2. Insert 7 tuples in to the table And Display all the fields into the table
3. Retrieve employee number and their salary
4. Find the sum of salaries of all employees.
5. Find the sum and average salary of employees of a particular department
6. Count the no of employees working for each department
7. Display Employee information in ascending order and descending order of their date of joining
8. Find the highest salary of an employee draws.
9. Find the least salary than an employee draws
10. Display details of employee whose name is SANDHYA and salary greater than 50000;

1. Create table salarytable

CREATE TABLE SALARYDB(ENO INT PRIMARY KEY, NAME VARCHAR2(10), DEPT VARCHAR2(10) ,DOJ DATE, SALARY INTEGER);

DESC SALARYDB;

output :

Table	Column	Data Type	Length	Precision	Scale	Primary Key
SALARYDB	ENO	Number	-	0	1	-
-	NAME	Varchar2	10	-	-	nullable --
-	DEPT	Varchar2	10	-	-	nullable -
-	DOJ	Date	7	-	-	nullable -
-	SALARY	Number	-	-	0	-

nullable - -

2. Insert 7 tuples in to the table And Display all the fields into the table

Insert 7 tuples in to the table

```
INSERT INTO SALARYDB VALUES(101, 'PUNITH', 'MCA', '01-JAN-22', 25000);
INSERT INTO SALARYDB VALUES(102, 'RAHUL', 'BCA', '13-JAN-22', 35000);
INSERT INTO SALARYDB VALUES(103, 'RAJATH', 'BCA', '12-JAN-22', 55000);
INSERT INTO SALARYDB VALUES(104, 'VARSHA', 'BCA', '13-FEB-22', 55000);
INSERT INTO SALARYDB VALUES(105, 'SANDHYA', 'BCA', '15-FEB-22', 75000);
INSERT INTO SALARYDB VALUES(106, 'SANDHYA', 'BCA', '11-JAN-22', 25000);
INSERT INTO SALARYDB VALUES(107, 'ROHITH', 'MCA', '09-JAN-22', 45000);
```

Display all the fields of employee table:

```
SELECT * FROM SALARYDB;
```

OUTPUT:

ENO	NAME	DEPT	DOJ	SALARY
101	PUNITH		MCA 01-Jan-22	25000
102	RAHUL	BCA	13-Jan-22	35000
103	RAJATH		BCA 12-Jan-22	55000
104	VARSHA		BCA 13-Feb-22	55000
105	SANDHYA		BCA 15-Feb-22	75000
106	SANDHYA		BCA 11-Jan-22	25000
107	ROHITH		MCA 09-Jan-22	45000

3. Retrieve employee number and their salary

```
SELECT ENO, SALARY FROM SALARYDB;
```

OUTPUT:

ENO	SALARY
101	25000
102	35000
103	55000
104	55000
105	75000
106	25000
107	45000

4. Find the sum of salaries of all employees.

```
select sum(salary) as "total_salary" from SALARYDB;
```

OUTPUT:

Total_salary

315000

5. Find the sum and average salary of employees of a particular department

```
select dept, sum(salary) as "total_salary", avg(salary) as "average_salary" From
SALARYDB group by dept;
```

output:

DEPT	Total_salary	Average_salary
BCA	245000	49000
MCA	70000	35000

6. Count the no of employees working for each department

```
select dept,count(*) as "number_of_employees" from SALARYDB group by dept;
```

output :

DEPT	Number_of_employees
BCA	5
MCA	2

7. Display Employee information in ascending order and descending order of their date of joining

Employee information in ascending order

```
select * from SALARYDB order by DOJ ASC;
```

OUTPUT:

ENO	NAME	DEPT	DOJ	SALARY
101	PUNITH		MCA 01-JAN-22	25000
107	ROHITH		MCA 09-JAN-22	45000
106	SANDHYA		BCA 11-JAN-22	25000
103	RAJATH		BCA 12-JAN-22	55000
102	RAHUL	BCA	13-JAN-22	35000
104	VARSHA		BCA 13-FEB-22	55000
105	SANDHYA		BCA 15-FEB-22	75000

Employee information in descending order

```
select * from SALARYDB order by DOJ DESC;
```

output:

ENO	NAME	DEPT	DOJ	SALARY
105	SANDHYA		BCA 15-FEB-22	75000
104	VARSHA		BCA 13-FEB-22	55000
102	RAHUL	BCA	13-JAN-22	35000
103	RAJATH		BCA 12-JAN-22	55000
106	SANDHYA		BCA 11-JAN-22	25000
107	ROHITH		MCA 09-JAN-22	45000
101	PUNITH		MCA 01-JAN-22	25000

8. Find the highest salary of an employee draws.

```
select max(salary) as "Highest_salary" from SALARYDB;
```

output:

Highest_salary

75000

9. Find the least salary than an employee draws

```
select min(salary) as "Least_salary" from SALARYDB;
```

output:

Least_salary

25000

10. Display details of employee whose name is SANDHYA and salary greater than 50000;

```
select * from SALARYDB where name='SANDHYA' and salary>50000;
```

OUTPUT:

ENO	NAME	DEPT	DOJ	SALARY
105	SANDHYA		BCA	15-FEB-22 75000

end of lab cycle 4

EXPERIMENT -5 :

1. How the resulting salaries if every employee working on the "RESEARCH" Departments is given a 10 percent raise

```
SELECT E.SSN, E.FNAME, D.DNAME,1.1*E.SALARY AS "INCR_SAL" FROM EMPLOYEE61 E,DEPARTMENT61 D WHERE E.DNO=D.DNO AND D.DNAME='RESEARCH';
```

OUTPUT:

SSN	FNAME	DNAME	INCR_SAL
UBCA01	PUNITH	RESEARCH	27500
UBCA04	SUSHAN	RESEARCH	27500

2. Find the sum of the salaries of all employees of the "Accounts" department, as well as the maximum salary, the minimum salary, and the average salary in this department

```
SELECT SUM(E.SALARY),MAX(E.SALARY),MIN(E.SALARY), AVG(E.SALARY)FROM EMPLOYEE61 E,DEPARTMENT61 D WHERE E.DNO=D.DNO AND D.DNAME='ACCOUNTS';
```

OUTPUT:

SUM(E.SALARY)	MAX(E.SALARY)	MIN(E.SALARY)	AVG(E.SALARY)
160000	65000	25000	40000

EXPERIMENT -6

1.Retrieve the name of each employee Controlled by department number 5 (use EXISTS operator).

```
SELECT E.FNAME,E.LNAME FROM EMPLOYEE61 E WHERE EXISTS(SELECT DNO FROM EMPLOYEE61 WHERE E.DNO=5);
```

OUTPUT:

FNAME	LNAME
RAJATH	GOWDA
LALITHA	GOWDA
SHRAVANI	GOWDA

2. Retrieve the name of each dept and number of employees working in each department which has at least 2 employees

```
SELECT D.DNAME, COUNT(*) FROM EMPLOYEE61 E, DEPARTMENT61 D WHERE E.DNO=D.DNO
GROUP BY D.DNAME HAVING COUNT(*)>=2;
```

OUTPUT:

DNAME	COUNT(*)
RESEACH	2
BCA	3
ACCOUNTS	4

EXPERIMENT-7

7. Execute the following queries

a. For each project, retrieve the project number, the project name, and the number of employee who work on that project.(use GROUP BY)

```
SELECT P.PNO,P.PNAME, COUNT(*) AS " NO_OF_EMP" FROM PROJECT61 P, WORKS_ON61 W
WHERE P.PNO=W.PNO GROUP BY P.PNO,P.PNAME;
```

OUTPUT:

PNO	PNAME	NO_OF_EMP
103	METRO_RAIL	2
100	DOTNET	1
102	EMBEDDED_C	2
104	ATTENDENCE_REPORT	2
105	DATA_SCIENCE	1
101	WEBDEVELOPMENT	1

b. Retrieve the name of employees who born in the year 2003â™s

```
SELECT FNAME,LNAME,BDATE FROM EMPLOYEE61 WHERE BDATE LIKE '%-%-03';
```

OUTPUT:

FNAME	LNAME	BDATE
PUNITH	GOWDA	11-JAN-03
DEEPAK	SINGH	16-FEB-03
RAJATH	GOWDA	18-JAN-03
SUSHAN	SHETTY	11-SEP-03
SHWETHA	GOWDA	18-MAR-03
BHARATH	GOWDA	14-OCT-03
LALITHA	GOWDA	12-JAN-03
SHRAVANI	GOWDA	18-JUN-03
RAGHU	SHETTY	19-JAN-03

EXPERIMENT-8

1. For each department that has more than TWO employees, retrieve the

department number and the number of its employees who are making more than Rs. 40,000.

```
SELECT D.DNO, COUNT (*) FROM DEPARTMENT61 D, EMPLOYEE61 E WHERE D.DNO=E.DNO AND
E.SALARY>40000
AND D.DNO IN (SELECT E1.DNO FROM EMPLOYEE61 E1 GROUP BY E1.DNO HAVING COUNT
(*)>2) GROUP BY D.DNO;
```

OUTPUT:

DNO	COUNT(*)
5	2
3	1

2. For each department that has more than FIVE employees, retrieve the department number and the number of its employees who are making more than Rs. 40,000.

```
SELECT D.DNO, COUNT (*) FROM DEPARTMENT61 D, EMPLOYEE61 E WHERE D.DNO=E.DNO AND
E.SALARY>40000
AND D.DNO IN (SELECT E1.DNO FROM EMPLOYEE61 E1 GROUP BY E1.DNO HAVING COUNT
(*)>5) GROUP BY D.DNO;
```

OUTPUT:

NO DATA FOUND

EXPERIMENT-9:

9.For each project on which atleast two employees work, retrieve the project number, project name and the number of employees who work on that project.

```
SELECT P.PNO,P.PNAME,COUNT(*) AS "NO_OF_EMP_WORKING" FROM PROJECT61
P,WORKS_ON61 W WHERE P.PNO=W.PNO GROUP BY P.PNO,P.PNAME HAVING COUNT(*)>=2;
```

OUTPUT:

PNO	PNAME	NO_OF_EMP_WORKING
103	METRO_RAIL	2
102	EMBEDDED_C	2
104	ATTENDENCE_REPORT	2

EXPERIMENT-10

```
SELECT * FROM EMPLOYEE61;
SELECT * FROM DEPARTMENT61;
```

1. Without Check option:

step 1: Create View

```
CREATE VIEW EMP_DEPT1 AS(SELECT E.SSN,E.FNAME,E.DNO,E.SALARY,D.DNAME FROM
EMPLOYEE61 E,DEPARTMENT61 D WHERE E.DNO=D.DNO);
```

View created

step 2: Display all the rows of a view

```
SELECT * FROM EMP_DEPT1;
```

OUTPUT:

SSN	FNAME	DNO	SALARY	DNAME
UBCA01	PUNITH		1	25000 RESEACH
UBCA02	DEEPAK		3	35000 ACCOUNTS
UBCA03	RAJATH		5	45000 BCA
UBCA04	SUSHAN		1	25000 RESEACH
UBCA05	SATHISH		3	35000 ACCOUNTS
UBCA06	SHWETHA		3	65000 ACCOUNTS
UBCA07	BHARATH		3	25000 ACCOUNTS
UBCA08	LALITHA		5	45000 BCA
UBCA09	SHRAVANI	5	25000	BCA
UBCA11	JOSHI	3	65000	ACCOUNTS
UBCA12	LAVANYA		3	65000 ACCOUNTS

step :3 Drop View

```
DROP VIEW EMP_DEPT1;
```

View Dropped

2. With check option

Step 1:

```
CREATE VIEW EMP_VIEW AS (SELECT SSN, FNAME, SALARY FROM EMPLOYEE61 WHERE SALARY<=50000) WITH CHECK OPTION;
```

View created

step 2: Display all the rows of a view

```
SELECT * FROM EMP_VIEW;
```

OUTPUT:

SSN	FNAME	SALARY
UBCA01	PUNITH	25000
UBCA02	DEEPAK	35000
UBCA03	RAJATH	45000
UBCA04	SUSHAN	25000
UBCA05	SATHISH	35000
UBCA07	BHARATH	25000
UBCA08	LALITHA	45000
UBCA09	SHRAVANI	25000
UBCA10	RAGHU	25000

Step 3 : Drop View

```
DROP VIEW EMP_VIEW;
```

PART B:

Create the following tables with properly specifying Primary keys, Foreign keys and solve the following queries.

BRANCH (Branchid, Branchname, HOD)
 STUDENT (USN, Name, Address, Branchid, sem)

BOOK (Bookid, Bookname, Authorid, Publisher, Branchid)
 AUTHOR (Authorid, Authorname, Country, age)
 BORROW (USN, Bookid, Borrow_Date)

1. Perform the following:

Creating Tables (With and Without Constraints)

```
create table branch(brid number(5) primary key,brname varchar2(15) not null,hod
varchar2(10));
desc branch;
```

output:

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable
BRANCH	BRID	Number	-	5	0	1	-
	BRNAME	Varchar2	15	-	-	-	-
	HOD	Varchar2	10	-	-	nullable	-

```
create table studentLIB1(usn varchar2(15) primary key,name varchar2(15) not
null,Address varchar2(15),brid references branch(brid),sem varchar2(10));
desc studentLIB1;
```

output:

Table	Column	Data Type	Length	Precision	Scale	Primary
STUDENTLIB1	USN	Varchar2	15	-	1	-
	NAME	Varchar2	15	-	-	-
	ADDRESS	Varchar2	15	-	-	nullable
	BRID	Number	-	5	0	-
	SEM	Varchar2	10	-	-	nullable

```
create table author(aid varchar2(10) primary key,aname varchar2(15) not null,
country varchar2(15), age number(4));
desc author;
```

output:

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable
AUTHOR	AID	Varchar2	10	-	1	-	-
	ANAME	Varchar2	15	-	-	-	-
	COUNTRY	Varchar2	15	-	-	nullable	-
	AGE	Number	-	4	0	nullable	-

-

```
create table book(bkid varchar2(10) primary key,bname varchar2(15) not null, aid
references author(aid),publisher varchar2(20) not null,brid references
branch(brid));
desc book;
```

output:

Table	Column	Nullable	Default	Data Type	Length	Precision	Scale	Primary Key
BOOK	BKID		Varchar2	10	-	1	-	-
-	BNAME		Varchar2	15	-	-	-	-
-	AID		Varchar2	10	-	-	-	nullable
-	PUBLISHER		Varchar2	20	-	-	-	-
-	BRID		Number		5	0	-	nullable
-	-	-	-	-	-	-	-	-

```
create table borrow2(usn references studentLIB1(usn),bkid references
book(bkid),borrow_date date, primary key (usn,bkid));
desc borrow2;
```

output:

Table	Column	Nullable	Default	Data Type	Length	Precision	Scale	Primary Key
BORROW2	USN		Varchar2	15	-	-	1	-
-	BKID		Varchar2	10	-	2	-	-
-	BORROW_DATE		Date	7	-	-	-	nullable
-	-	-	-	-	-	-	-	-

Viewing all Tables in a Database:

```
select table_name,status from user_tables;
```

output:

TABLE_NAME	STATUS
branch	VALID
studentlib1	VALID
author	VALID
book	VALID
borrow2	VALID

Inserting Records in a Table:

```
insert into branch(brid,brname,hod) values(10,'bca','radha h s');
insert into branch(brid,brname,hod) values(20,'bba','rashmi e');
insert into branch(brid,brname,hod) values(30,'bsc','ramesh a');
insert into branch(brid,brname,hod) values(40,'bcom','aditya p');
```

```
insert into branch(brid,brname,hod) values(50,'ba','asha p');
insert into branch(brid,brname,hod) values(60,'mca','ravi k s');
```

```
select * from branch;
output:
```

BRID	BRNAME	HOD
10	bca	radha h s
20	bba	rashmi e
30	bsc	ramesh a
40	bcom	aditya p
50	ba	asha p
60	mca	ravi k s

```
insert into studentlib1(usn,name,address,brid,sem)
values('klebca2201','arjun','jayanagar',10,'2ND sem');
insert into studentlib1(usn,name,address,brid,sem)
values('klebca2202','ramu','girinagar',10,'4TH sem');
insert into studentlib1(usn,name,address,brid,sem)
values('klebca2203','punith','vijayanagar',10,'2ND sem');
insert into studentlib1(usn,name,address,brid,sem)
values('klebca2204','rahul','basavangudi',10,'4TH sem');
insert into studentlib1(usn,name,address,brid,sem)
values('klebsc2201','ramya','hanumanth nagar',30,'2ND sem');
insert into studentlib1(usn,name,address,brid,sem)
values('klebsc2202','lakshmi','jayanagar',30,'4TH sem');
insert into studentlib1(usn,name,address,brid,sem)
values('kleba2201','sanjana','ram mandir',50,'2ND sem');
insert into studentlib1(usn,name,address,brid,sem)
values('klebba2201','arun','majestic',20,'4TH sem');
insert into studentlib1(usn,name,address,brid,sem)
values('klebba2202','abhi','jayanagar',20,'2ND sem');
insert into studentlib1(usn,name,address,brid,sem)
values('klebsc2203','deepthi','isckon',30,'2ND sem');
```

```
select * from studentlib1;
output:
```

USN	NAME	ADDRESS	BRID	SEM
klebca2201	arjun	jayanagar	10	2nd sem
klebca2202	ramu	girinagar	10	4th sem
klebca2203	punith	vijayanagar	10	2nd sem
klebca2204	rahul	basavangudi	10	4th sem
klebsc2201	ramya	hanumanth nagar	30	2nd sem
klebsc2202	lakshmi	jayanagar	30	4th sem
kleba2201	sanjana	ram mandir	50	2nd sem
klebba2201	arun	majestic	20	4th sem
klebba2202	abhi	jayanagar	20	2nd sem
klebsc2203	deepthi	isckon	30	2nd sem
kleba2201	sanjana	ram mandir	50	2ND sem

```
insert into
author(aid,aname,country,age)values('nepcomp01','chitraravi','india',36);
insert into
author(aid,aname,country,age)values('nepcomp02','rashmi','india',38);
insert into
author(aid,aname,country,age)values('nepcomm01','sangeetha','india',42);
insert into author(aid,aname,country,age)values('nepcomm02','dilip','india',39);
insert into
author(aid,aname,country,age)values('nepmca101','shekar','india',44);
```

```
select * from author;
output:
```

AID	ANAME	COUNTRY	AGE
nepcomp01	chitraravi	india	36
nepcomp02	rashmi	india	38
nepcomm01	sangeetha	india	42
nepcomm02	dilip	india	39
nepmca101	shekar	india	44

```
insert into
book(bkid,bname,aid,publisher,brid)values('nepdbms','dbms','nepcomp01','skyward',10);
insert into
book(bkid,bname,aid,publisher,brid)values('nepjava','java','nepcomp01','skyward',10);
insert into
book(bkid,bname,aid,publisher,brid)values('nepca','DS','nepcomp01','skyward',10);
;
insert into
book(bkid,bname,aid,publisher,brid)values('neppst','pst','nepcomp01','oxford',10);
insert into
book(bkid,bname,aid,publisher,brid)values('nepqabd','qabd','nepcomm01','skyward',20);
insert into
book(bkid,bname,aid,publisher,brid)values('nepcn','computernetwork','nepcomp02','oxford',30);
insert into book(bkid,bname,aid,publisher,brid)values('nepec','E-commerce','nepcomm01','skyward',20);
insert into
book(bkid,bname,aid,publisher,brid)values('nepac','accounts','nepcomm02','skyward',50);
insert into
book(bkid,bname,aid,publisher,brid)values('neppython','python','nepcomp02','skyward',30);
```

```
select * from book;
```

```
output:
```

BKID	BNAME	AID	PUBLISHER	BRID
nepdbms	dbms	nepcomp01	skyward	10
nepjava	java	nepcomp01	skyward	10
nepca	DS	nepcomp01	skyward	10
neppst	pst	nepcomp01	oxford	10
nepqabd	qabd	nepcomm01	skyward	20
nepcn	computernetwork	nepcomp02	oxford	30
nepec	E-commerce	nepcomm01	skyward	20
nepac	accounts	nepcomm02	skyward	50
neppython	python	nepcomp02	skyward	30

```
insert into borrow2(usn,bkid,borrow_date) values('klebca2201','nepdbms','20-may-22');
insert into borrow2(usn,bkid,borrow_date) values('klebca2202','nepjava','28-may-22');
insert into borrow2(usn,bkid,borrow_date) values('klebca2203','nepca','06-jun-22');
insert into borrow2(usn,bkid,borrow_date) values('klebca2204','neppst','20-may22');
insert into borrow2(usn,bkid,borrow_date) values('klebsc2201','nepcn','20-may22');
```

```

insert into borrow2(usn,bkid,borrow_date) values('klebsc2201','neppython','20-
may22');
insert into borrow2(usn,bkid,borrow_date) values('klebba2201','nepqabd','20-
may22');
insert into borrow2(usn,bkid,borrow_date) values('klebba2201','nepec','20-
may22');
insert into borrow2(usn,bkid,borrow_date) values('kleba2201','nepac','20-
may22');
insert into borrow2(usn,bkid,borrow_date) values('klebca2201','nepca','21-may-
22');
insert into borrow2(usn,bkid,borrow_date) values('klebca2201','nepjava','21-may-
22');

```

```
select * from borrow2;
```

output:

USN	BKID	BORROW_DATE
klebca2201	nepdbms	20-MAY-22
klebca2202	nepjava	28-MAY-22
klebca2203	nepca	06-JUN-22
klebca2204	neppst	20-MAY-22
klebsc2201	nepcn	20-MAY-22
klebsc2201	neppython	20-MAY-22
klebba2201	nepqabd	20-MAY-22
klebba2201	nepec	20-MAY-22
klebca2201	nepcn	21-MAY-22
klebca2201	nepjava	21-MAY-22
klebca2201	nepca	21-MAY-22

Updating Records in a Table:

```
update book set publisher='oxford' where bkid='nepjava';
```

```
select * from book;
```

output:

BKID	BNAME	AID	PUBLISHER	BRID
nepdbms	dbms	nepcomp01	skyward	10
nepjava	java	nepcomp01	oxford	10
nepca	DS	nepcomp01	skyward	10
neppst	pst	nepcomp01	oxford	10
nepqabd	qabd	nepcomm01	skyward	20
nepcn	computernetwork	nepcomp02	oxford	30
nepec	E-commerce	nepcomm01	skyward	20
nepac	accounts	nepcomm02	skyward	50
neppython	python	nepcomp02	skyward	30

Deleting Records in a Table

```
DELETE BORROW2 WHERE usn='kleba2201';
```

LABCYCLE 2:

a. List the details of Students who are all studying in 2nd sem BCA.

```
SELECT * FROM STUDENTLIB1 S,BRANCH B WHERE S.Brid=b.brid AND b.brname='bca' and
s.sem='2nd sem';
```

OUTPUT:

USN	NAME	ADDRESS	BRID	SEM	BRID	BRNAME	HOD
klebca2201	arjun	jayanagar	10	2nd sem	10	bca	radha h s
klebca2203	punith	vijayanagar	10	2nd sem	10	bca	radha h s

b. List the students who are not borrowed any books.

```
select * from studentlib1 s where s.usn not in(select b.usn from borrow2 b);
```

OUTPUT:

USN	NAME	ADDRESS	BRID	SEM
klebsc2202	lakshmi	jayanagar	30	4th sem
kleba2201	sanjana	ram mandir	50	2nd sem
klebba2202	abhi	jayanagar	20	2nd sem
klebsc2203	deepthi	isckon	30	2nd sem

LABCYCLE 3:

a. Display the USN, Student name, Branch_name, Book_name, Author_name, Books_Borrowed_ Date of 2nd sem BCA Students who borrowed books.

```
select s.usn,s.name,s.sem,br.brname,bk.bname,a.aname,b.borrow_date
from studentlib1 s,branch br,book bk, author a, borrow2 b where s.brid=br.brid
and s.brid=bk.brid and a.aid=bk.aid
and b.usn=s.usn and bk.bkid=b.bkid and s.sem='2nd sem' and br.brname='bca';
```

OUTPUT:

USN	NAME	SEM	BRNAME	BNAME	ANAME	BORROW_DATE
klebca2201	arjun	2nd sem	bca	dbms	chitraravi	20-MAY-22
klebca2201	arjun	2nd sem	bca	java	chitraravi	21-MAY-22
klebca2203	punith	2nd sem	bca	DS	chitraravi	06-JUN-22
klebca2201	arjun	2nd sem	bca	DS	chitraravi	21-MAY-22

b. Display the number of books written by each Author.

```
select a.aname,count(distinct bk.bkid) as "no_of_ books" from author a,book bk
where a.aid=bk.aid group by a.aname;
```

OUTPUT:

ANAME	No_of_ Books
chitraravi	4
dilip	1
rashmi	2
sangeetha	2

LAB CYCLE 4:

a. Display the student details who borrowed more than two books.

```
select s.name from studentlib1 s,borrow2 b where s.usn=b.usn group by s.name
having count(distinct b.bkid)>2;
```

OUTPUT:

NAME
arjun

b. Display the student details who borrowed books of more than one Author.

```
select s.name, count(distinct bk.aid) from studentlib1 s, book bk, borrow2 b where
s.usn=b.usn and b.bkid=bk.bkid group by s.name having count( distinct
bk.aid)>1;
```

```
NAME COUNT(DISTINCTBK.AID)
arjun 2
```

LAB CYCLE 5:

a. Display the Book names in descending order of their names.

```
select * from book order by bname desc;
```

OUTPUT:

BKID	BNAME	AID	PUBLISHER	BRID	
nepqabd	qabd		nepcomm01	skyward	20
neppython	python		nepcomp02	skyward	30
nepst	pst		nepcomp01	oxford	10
nepjava	java		nepcomp01	oxford	10
nepdbms	dbms		nepcomp01	skyward	10
nepcn	computernetwork		nepcomp02	oxford	30
nepac	accounts	nepcomm02	skyward		50
nepec	E-commerce	nepcomm01	skyward		20
nepca	DS	nepcomp01	skyward		10

b. List the details of students who borrowed the books which are all published by the same publisher.

```
select s.name, count(bk.publisher) from studentlib1 s, book bk, borrow2 b where
s.usn=b.usn and b.bkid=bk.bkid group by s.name having count(bk.publisher)>1;
```

OUTPUT:

```
NAME COUNT(BK.PUBLISHER)
arjun 4
arun 2
ramya 2
```

LAB CYCLE 6:

Consider the following schema:

```
STUDENT (USN, name, date_of_birth, branch, mark1, mark2, mark3, total, GPA)
```

Perform the following:

a. Creating Tables (With and Without Constraints)

```
CREATE TABLE STUDENTMARKS(USN VARCHAR2(10) PRIMARY KEY, NAME VARCHAR2(20) NOT
NULL, DOB DATE, BRANCH VARCHAR2(10) NOT NULL, MARK1 NUMBER(4) NOT NULL, MARK2
NUMBER(4) NOT NULL, MARK3 NUMBER(4) NOT NULL, TOTAL NUMBER(4), GPA NUMBER(4,2));
DESC STUDENTMARKS;
```

output:


```
SELECT * FROM STUDENTLIB1;
```

output:

USN	NAME	ADDRESS	BRID	SEM
klebca2201	arjun	jayanagar	10	2nd sem
klebca2202	ramu	girinagar	10	4th sem
klebca2203	punith	vijayanagar	10	2nd sem
klebca2204	rahul	basavangudi	10	4th sem
klebsc2201	ramya	hanumanth nagar	30	2nd sem
klebsc2202	lakshmi	jayanagar	30	4th sem
kleba2201	sanjana	ram mandir	50	2nd sem
klebba2201	arun	majestic	20	4th sem
klebba2202	abhi	jayanagar	20	2nd sem
klebsc2203	deepthi	isckon	30	2nd sem
kleba2201	sanjana	ram mandir	50	2ND sem

```
INSERT INTO
```

```
STUDENTMARKS(USN,NAME,DOB,BRANCH,MARK1,MARK2,MARK3,TOTAL,GPA)VALUES('KLEBCA2201',  
'ARJUN','24-AUG-2003','BCA',85,95,96,NULL,NULL);
```

```
1 row updated
```

```
INSERT INTO
```

```
STUDENTMARKS(USN,NAME,DOB,BRANCH,MARK1,MARK2,MARK3,TOTAL,GPA)VALUES('KLEBCA2202',  
'ramu','24-sep-2003','BCA',75,85,65,NULL,NULL);
```

```
1 row updated
```

```
INSERT INTO
```

```
STUDENTMARKS(USN,NAME,DOB,BRANCH,MARK1,MARK2,MARK3,TOTAL,GPA)VALUES('KLEBCA2203',  
'punith','12-jan-2004','BCA',85,95,96,NULL,NULL);
```

```
1 row updated
```

```
INSERT INTO
```

```
STUDENTMARKS(USN,NAME,DOB,BRANCH,MARK1,MARK2,MARK3,TOTAL,GPA)VALUES('KLEBCA2204',  
'rahul','25-feb-2002','BCA',85,95,96,NULL,NULL);
```

```
1 row updated
```

```
INSERT INTO
```

```
STUDENTMARKS(USN,NAME,DOB,BRANCH,MARK1,MARK2,MARK3,TOTAL,GPA)VALUES('KLEBsc2201',  
'ramya','12-mar-2001','Bsc',85,95,96,NULL,NULL);
```

```
1 row updated
```

```
INSERT INTO
```

```
STUDENTMARKS(USN,NAME,DOB,BRANCH,MARK1,MARK2,MARK3,TOTAL,GPA)VALUES('KLEBsc2202',  
'lakshmi','14-sep-2004','Bsc',85,92,96,NULL,NULL);
```

```
1 row updated
```

```
INSERT INTO
```

```
STUDENTMARKS(USN,NAME,DOB,BRANCH,MARK1,MARK2,MARK3,TOTAL,GPA)VALUES('KLEBsc2203',  
'deepthi','24-sep-2004','bsc',85,95,96,NULL,NULL);
```

```
1 row updated
```

```
INSERT INTO
```

```
STUDENTMARKS(USN,NAME,DOB,BRANCH,MARK1,MARK2,MARK3,TOTAL,GPA)VALUES('KLEBba2201',  
'arun','24-oct-2003','Bba',65,75,96,NULL,NULL);
```

```
1 row updated
```

```
INSERT INTO
```

```
STUDENTMARKS(USN,NAME,DOB,BRANCH,MARK1,MARK2,MARK3,TOTAL,GPA)VALUES('KLEBba2202',  
'abhi','24-oct-2003','Bba',85,75,58,NULL,NULL);
```

```
1 row updated
```

```
SELECT * FROM STUDENTMARKS;
```

output:

USN	NAME	DOB	BRANCH	MARK1	MARK2	MARK3	TOTAL	GPA
KLEBCA2201	ARJUN	24-AUG-03	BCA	85	95	96	-	-
KLEBCA2202	ramu	24-SEP-03	BCA	75	85	65	-	-
KLEBCA2203	punith	12-JAN-04	BCA	85	95	96	-	-

KLEBCA2204	rahul	25-FEB-02	BCA	85	95	96	-	-	
KLEBsc2201	ramya	12-MAR-01	bsc	85	95	96	-	-	
KLEBsc2202	lakshmi	14-SEP-04	Bsc	85	92	96	-	-	
KLEBsc2203	deepthi	24-SEP-04	bsc	85	95	96	-	-	
KLEBba2201	arun	24-OCT-03	Bba	65	75	96	-	-	
KLEBba2202	abhi	24-OCT-03	Bba	85	75	58	-	-	

```
update studentmarks set total=mark1+mark2+mark3;
select * from studentmarks;
```

output:

USN	NAME	DOB	BRANCH	MARK1	MARK2	MARK3	TOTAL	GPA
KLEBCA2201	ARJUN	24-AUG-03	BCA	85	95	96	276	-
KLEBCA2202	ramu	24-SEP-03	BCA	75	85	65	225	-
KLEBCA2203	punith	12-JAN-04	BCA	85	95	96	276	-
KLEBCA2204	rahul	25-FEB-02	BCA	85	95	96	276	-
KLEBsc2201	ramya	12-MAR-01	bsc	85	95	96	276	-
KLEBsc2202	lakshmi	14-SEP-04	Bsc	85	92	96	273	-
KLEBsc2203	deepthi	24-SEP-04	bsc	85	95	96	276	-
KLEBba2201	arun	24-OCT-03	Bba	65	75	96	236	-
KLEBba2202	abhi	24-OCT-03	Bba	85	75	58	218	-

LAB CYCLE -7:

Execute the following queries:

a. Find the GPA score of all the students.

```
UPDATE STUDENT SET GPA=((100*TOTAL)/300)/10;
select * from studentmarks;
```

output:

USN	NAME	DOB	BRANCH	MARK1	MARK2	MARK3	TOTAL	GPA
KLEBCA2201	ARJUN	24-AUG-03	BCA	85	95	96	276	9.2
KLEBCA2202	ramu	24-SEP-03	BCA	75	85	65	225	7.5
KLEBCA2203	punith	12-JAN-04	BCA	85	95	96	276	9.2
KLEBCA2204	rahul	25-FEB-02	BCA	85	95	96	276	9.2
KLEBsc2201	ramya	12-MAR-01	bsc	85	95	96	276	9.2
KLEBsc2202	lakshmi	14-SEP-04	Bsc	85	92	96	273	9.1
KLEBsc2203	deepthi	24-SEP-04	bsc	85	95	96	276	9.2
KLEBba2201	arun	24-OCT-03	Bba	65	75	96	236	7.87
KLEBba2202	abhi	24-OCT-03	Bba	85	75	58	218	7.27

b. Find the students who born on a particular year of birth from the date_of_birth column.

```
SELECT USN,NAME,DOB FROM STUDENTMARKS WHERE DOB LIKE '%-%-04';
```

output:

USN	NAME	DOB
KLEBCA2203	punith	12-JAN-04
KLEBsc2202	lakshmi	14-SEP-04
KLEBsc2203	deepthi	24-SEP-04

QUERY -8

a. List the students who are studying in a particular branch of study.

```
SELECT USN,NAME,BRANCH,DOB FROM STUDENTMARKS WHERE BRANCH='BCA';
```

output:

USN	NAME	BRANCH	DOB
KLEBCA2201	ARJUN	BCA	24-AUG-03
KLEBCA2202	ramu	BCA	24-SEP-03
KLEBCA2203	punith	BCA	12-JAN-04
KLEBCA2204	rahul	BCA	25-FEB-02

b. Find the maximum GPA score of the student branch-wise.

```
SELECT BRANCH,MAX(GPA) FROM STUDENTMARKS GROUP BY BRANCH;
```

output:

BRANCH	MAX(GPA)
bsc	9.2
BCA	9.2
Bsc	9.1
Bba	7.87