Practical 7

Aim: Perform the following SQL queries on TRANSACTIONS using COMMIT, ROLLBACK, SAVEPOINT

1) Create a table Customers having the following attributes:
ID, NAME, AGE, ADDRESS, SALARY

```
CREATE TABLE customers(
CUST_ID int PRIMARY KEY,
Name varchar(25),
Age int,
Address varchar(25),
Salary int
)
```

```
Successfully run. Total query runtime: 121 msec.
```

2) Start a transaction, define a savepoint, execute a delete query and ROLLBACK

```
BEGIN transaction;
SAVEPOINT xyz;
DELETE FROM customers WHERE age=40;
ROLLBACK;
END transaction;
```

```
WARNING:  there is no transaction in progress
COMMIT

Query returned successfully in 47 msec.
```

3) Start a transaction, define a savepoint, execute a delete query and COMMIT

```
BEGIN transaction;
SAVEPOINT xyz;
DELETE FROM customers WHERE age=40;
COMMIT;
END transaction;
```

```
WARNING:  there is no transaction in progress
COMMIT

Query returned successfully in 47 msec.
```

Result: Performed various SQL queries on TRANSACTIONS using COMMIT, ROLLBACK, SAVEPOINT

Marking Scheme:

Criteria	Total Marks	Marks Obtained	Comments
Concept (A)	2		
Implementation (B)	2		
Performance (C)	2		
Total	6 (To be scaled down to 1.5)		

Practical 8

Aim: Based on the Library Information System Database, perform the following SQL queries related to GROUP BY, VIEW operations.

1) Display the count of students in each department using GROUP BY operation using the table STUDENTS.

SELECT count (department_code) FROM students GROUP BY department_code;

	count bigint
1	12
2	16
3	14
4	10

2) Create a new view to display the Name and Roll No of 'CS' Students.

CREATE VIEW abc as SELECT student_fname, student_lname, roll_no FROM students WHERE department_code='CS';
SELECT * FROM abc;

```
CREATE VIEW

Query returned successfully in 42 msec.
```

	student_fname character varying (80)	student_lname character varying (80)	roll_no character varying (20)
1	Vikas	Das	CS01
2	David	Rajak	CS03
3	John	Chattarjee	CS04
4	Robert	Junior	CS05
5	Arup	Layek	CS06
6	Susmita	Das	CS07
7	Soma	Gorai	CS08
8	Suman	Kumari	CS09
9	Payel	Mandal	CS10
10	Puja	Biswas	CS11
11	Sataskhi	Mahato	CS12
12	Sita	Nayak	CS13
13	Laxmi	Sarkar	CS14
14	Pushpa	Das	CS15
15	Diptangsu	Ma	CS16
16	Jane	Das	CS02

Result: Based on the Library Information System Database, performed various SQL queries related to GROUP BY, VIEW operations.

Marking Scheme:

CRITERIA	TOTAL MARKS	MARKS OBTAINED	COMMENTS
CONCEPT (A)	2		
IMPLEMENTATION (B)	2		
PERFORMANCE (C)	2		
TOTAL	6 (TO BE SCALED DOWN TO 1.5)		

Practical 9

Aim: Based on the Library Information System Database, perform the following SQL queries related to ALTER TABLE, DROP, ADD, RENAME operations.

1) Insert a new attribute 'CGPA' to the students table

ALTER Table students add CGPA decimal;
SELECT * FROM students;

	student_fname character varying (80)	student_lname character varying (80)	enrollment [PK] character varying (20)	department_code character varying (80)	gender character varying (1)	mobile_no numeric (10)	dob date	degree character varying (80)	cgpa numeric
1	Vikas	Das	CS01	CS	M	9002000000	2002-05-09	B.Tech	[null]
2	David	Rajak	CS03	CS	M	9002000002	2002-03-05	B.Tech	[null]
3	John	Chattarjee	CS04	CS	M	9002000003	2002-02-09	B.Tech	[null]
4	Robert	Junior	CS05	CS	M	9002000004	2002-01-07	B.Tech	[null]
5	Arup	Layek	CS06	CS	M	9002000005	2002-10-05	B.Tech	[null]
6	Diptangsu	Ma	CS16	CS	M	9002000035	2003-06-03	B.Tech	[null]
7	Ramesh	Samant	ME01	ME	M	9002000010	2003-05-10	B.Tech	[null]
8	Anil	Pratap	ME02	ME	M	9002000011	2003-04-11	B.Tech	[null]
9	Vijay	Dubey	ME03	ME	M	9002000012	2003-03-12	B.Tech	[null]
10	Suresh	Singh	ME04	ME	M	9002000013	2003-02-13	B.Tech	[null]
11	Sanjay	Mollya	ME05	ME	M	9002000014	2003-01-14	B.Tech	[null]
12	Santash	Thorat	ME06	ME	M	9002000015	2003-06-15	B.Tech	[null]
13	Argha	Bee	ME07	ME	M	9002000016	2003-07-16	B.Tech	[null]
14	Dilip	Nayak	ME09	ME	M	9002000036	2002-06-03	B.Tech	[null]

2) Delete the newly added attribute 'CGPA'

ALTER TABLE students drop CGPA;
SELECT * FROM students;

Data Output | Messages | Notifications

	student_fname character varying (80)	student_lname character varying (80)	enrollment [PK] character varying (20)	department_code character varying (80)	gender character varying (1)	mobile_no numeric (10)	dob date	degree character varying (80)
1	Vikas	Das	CS01	CS	M	9002000000	2002-05-09	B.Tech
2	David	Rajak	CS03	CS	M	9002000002	2002-03-05	B.Tech
3	John	Chattarjee	CS04	CS	M	9002000003	2002-02-09	B.Tech
4	Robert	Junior	CS05	CS	M	9002000004	2002-01-07	B.Tech
5	Arup	Layek	CS06	CS	M	9002000005	2002-10-05	B.Tech
6	Diptangsu	Ma	CS16	CS	M	9002000035	2003-06-03	B.Tech
7	Ramesh	Samant	ME01	ME	M	9002000010	2003-05-10	B.Tech
8	Anil	Pratap	ME02	ME	M	9002000011	2003-04-11	B.Tech
9	Vijay	Dubey	ME03	ME	M	9002000012	2003-03-12	B.Tech
10	Suresh	Singh	ME04	ME	M	9002000013	2003-02-13	B.Tech
11	Sanjay	Mollya	ME05	ME	M	9002000014	2003-01-14	B.Tech
12	Santash	Thorat	ME06	ME	M	9002000015	2003-06-15	B.Tech
13	Argha	Bee	ME07	ME	M	9002000016	2003-07-16	B.Tech
14	Dilip	Nayak	ME09	ME	M	9002000036	2002-06-03	B.Tech

3) Rename the column 'Enrollment' to 'EID'

ALTER TABLE students rename enrollment to EID;
SELECT * FROM students;

```
ALTER TABLE

Query returned successfully in 46 msec.
```

Data Output | Messages | Notifications

	student_fname character varying (80)	student_lname character varying (80)	eid [PK] character varying (20)	department_code character varying (80)	gender character varying (1)	mobile_no numeric (10)	dob date	degree character varying (80)
1	Vikas	Das	CS01	CS	M	9002000000	2002-05-09	B.Tech
2	David	Rajak	CS03	CS	M	9002000002	2002-03-05	B.Tech
3	John	Chattarjee	CS04	CS	M	9002000003	2002-02-09	B.Tech
4	Robert	Junior	CS05	CS	M	9002000004	2002-01-07	B.Tech
5	Arup	Layek	CS06	CS	M	9002000005	2002-10-05	B.Tech
6	Diptangsu	Ma	CS16	CS	M	9002000035	2003-06-03	B.Tech
7	Ramesh	Samant	ME01	ME	M	9002000010	2003-05-10	B.Tech
8	Anil	Pratap	ME02	ME	M	9002000011	2003-04-11	B.Tech
9	Vijay	Dubey	ME03	ME	M	9002000012	2003-03-12	B.Tech
10	Suresh	Singh	ME04	ME	M	9002000013	2003-02-13	B.Tech
11	Sanjay	Mollya	ME05	ME	M	9002000014	2003-01-14	B.Tech
12	Santash	Thorat	ME06	ME	M	9002000015	2003-06-15	B.Tech
13	Argha	Bee	ME07	ME	M	9002000016	2003-07-16	B.Tech
14	Dilip	Nayak	ME09	ME	M	9002000036	2002-06-03	B.Tech

Result: Based on the Library Information System Database, performed various SQL queries related to ALTER TABLE, DROP, ADD, RENAME operations.

Marking Scheme:

CRITERIA	TOTAL MARKS	MARKS OBTAINED	COMMENTS
CONCEPT (A)	2		
IMPLEMENTATION (B)	2		
PERFORMANCE (C)	2		
TOTAL	6 (TO BE SCALED DOWN TO 1.5)		

Practical 10

Aim: Perform the following SQL queries pertaining to CONSTRAINTS.

1. Create a table called PERSONS having the attributes:

Attribute	DataType	Constraints
ID	INTEGER	NOT NULL, PRIMARY KEY
Name	VARCHAR	NOT NULL
Age	INTEGER	
Email	VARCHAR	UNIQUE

```
CREATE TABLE Persons (
ID int NOT NULL PRIMARY KEY, Name varchar(10) NOT NULL, Age int,
EMail varchar (19) UNIQUE
);
```

```
Successfully run. Total query runtime: 121 msec.
```

2. Try to insert records having only ID, Age and Email values to test for NOT NULL Conditions.

```
INSERT into Persons
Values (30, null, 20, 'ldlaland@xyz.com');
```

```
ERROR:  Failing row contains (30, null, 20, ldlaland@xyz.com).null value in column "name" of relation "persons" violates not-null constraint

ERROR:  null value in column "name" of relation "persons" violates not-null constraint
SQL state: 23502
Detail: Failing row contains (30, null, 20, ldlaland@xyz.com).
```

3. Try to insert records with DUPLICATE Email to check the condition of UNIQUE.

```
INSERT into Persons
Values (40,
'avu',20,'ldlaland@xyz.com');
```

```
ERROR:  Key (email)=(ldlaland@xyz.com) already exists.duplicate key value violates unique constraint "persons_email_key"

ERROR:  duplicate key value violates unique constraint "persons_email_key"
SQL state: 23505
Detail: Key (email)=(ldlaland@xyz.com) already exists.
```

Result: Performed various SQL queries pertaining to CONSTRAINTS.

Marking Scheme:

Criteria	Total Marks	Marks Obtained	Comments
Concept (A)	2		
Implementation (B)	2		
Performance (C)	2		
Total	6 (To be scaled down to 1.5)		