

Experiment No:

Experiment Name: Database query using sql

Task-1: Find students who are older than 20 and have a GPA above the average GPA of all students

Code:

```
SELECT * FROM st_table WHERE age>20 and GPA>(SELECT AVG(GPA) FROM st_table);|
```

Output:

st_id	st_name	age	GPA	dept	year_add	fees_paid	credit	enroll_state
1	Eleven	21	3.8	Engineering	2021	10000	120	active
2	Dustin	22	3.9	Science	2020	9000	110	active
4	Mike	23	3.7	Science	2021	9500	115	inactive
6	Eddie	22	4	Arts	2019	8000	140	active
9	Steve	21	3.8	Science	2021	10500	120	active
12	Nancy	23	3.9	Business	2019	9500	135	active

Task-2: Find the top 5 students with the highest fess paid, ordered by GPA (in descending order) as a tiebreaker

Code:

```
SELECT st_name,fees_paid,GPA FROM `st_table` ORDER BY fees_paid DESC,GPA DESC LIMIT 5;
```

Output:

st_name	fees_paid	GPA
Nancy	9500	3.9
Mike	9500	3.7
Dustin	9000	3.9
Will	8500	3.4
Eddie	8000	4

Task-3: List students who belong to the "Engineering" department, have a GPA greater than 3.5, and are enrolled after 2020

Code:

Output:

```
SELECT st_id, st_name, dept, GPA, year_add FROM st_table WHERE dept LIKE '%Engineering%' AND GPA > 3.5 AND year_add > 2020;
```

st_id	st_name	dept	GPA	year_add
1	Eleven	Engineering	3.8	2021
10	Robin	Engineering	3.6	2022

Task-4: Find students who are not active (i.e., enrollment_status = 'inactive') and haven't paid any fees (fess_paid = 0)

Code:

```
SELECT * FROM st_table WHERE enroll_state='inactive' OR fees_paid=0;
```

Output:

st_id	st_name	age	GPA	dept	year_add	fees_paid	credit	enroll_state
4	Mike	23	3.7	Science	2021	9500	115	inactive
8	Alexei	25	3.2	Business	2018	7500	100	inactive

Task-5: Calculate the total fees paid and average GPA for each department, but only for departments with more than 10 students

Code:

```
SELECT dept,  
SUM(fees_paid) AS total_fees_paid,  
AVG(GPA) AS average_GPA,  
COUNT(st_id) AS student_count  
FROM st_table  
GROUP BY dept  
HAVING COUNT(st_id) > 10;
```

Output:

dept	total_fees_paid	average_GPA	student_count
..

