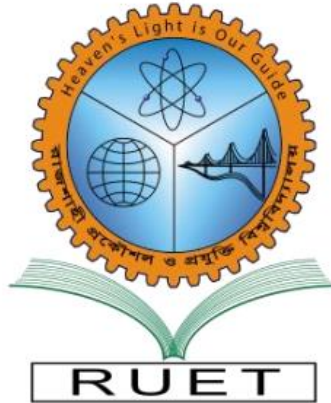*Heaven's Light is Our Guide*

Rajshahi University of Engineering and Technology

Department of Electrical & Computer Engineering

Course Code: ECE 2216

Course Title: Database Management System Sessional

Submitted by

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Roll: 2110038

Submitted to

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Experiment No: 03

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 student_id, student_name, age, GPA, department

FROM student_info

WHERE age > 20

AND GPA > (SELECT AVG(GPA) FROM student_info);
```

Output:

student_id	student_name	age	GPA	department
1	Eleven	21	3.8	Engineering
2	Dustin	22	3.9	Science
4	Mike	23	3.7	Engineering
6	Eddie	22	4	Arts
9	Steve	21	3.8	Science
12	Nancy	23	3.9	business

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

Code:

```
SELECT student_id, student_name, fess_paid, GPA

FROM student_info

ORDER BY fess_paid DESC, GPA DESC

LIMIT 5;
```

Output:

student_id	student_name	fess_paid ▼ 1	GPA ▼ 2
5	Max	12000	3.5
10	Robin	11000	3.6
9	Steve	10500	3.8
1	Eleven	10000	3.8
12	Nancy	9500	3.9

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

Code:

```
SELECT student_id, student_name, department, GPA, year_of_admission
```

```
FROM student_info

WHERE department LIKE '%Engineering%'

AND GPA > 3.5

AND year_of_admission > 2020;
```

Output:

student_id	student_name	department	GPA	year_of_admission
1	Eleven	Engineering	3.8	2021
4	Mike	Engineering	3.7	2021
10	Robin	Engineering	3.6	2022

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

Code:

```
SELECT student_id, student_name, enrollment_status, fess_paid

FROM student_info

WHERE enrollment_status = 'inactive'

AND fess_paid = 0;
```

Output:

student_id	student_name	enrollment_status	fess_paid

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

Code:

```
SELECT department,

        SUM(fess_paid) AS total_fess_paid,

        AVG(GPA) AS average_GPA,

        COUNT(student_id) AS student_count

FROM student_info

GROUP BY department

HAVING COUNT(student_id) > 10;
```

Output:

department	total_fess_paid	average_GPA	student_count