

“Heaven’s Light is Our Guide”

Rajshahi University of Engineering & Technology, Rajshahi



Department of Electrical & Computer Engineering

Lab Report

Course Code : ECE 2216

Course Title : Data base systems sessional

Experiment No. : 02

Submission Date : 1-10-24

Submitted To-

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Submitted By-

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Experiment No. : 02

Name of the experiment : Learning and implementation of SELECT queries in database

Objectives:

- Create a students table with appropriate fields and data types.
- Insert data into the table to simulate real-world student records.
- Write SQL queries to retrieve specific information based on conditions like age, GPA, and department.
- Practice filtering, sorting, and grouping data using SQL.
- Calculate aggregate values such as total fees and average GPA.
- Gain practical experience in managing and analyzing database records.

Queries and Output:

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

✓ MySQL returned an empty result set (i.e. zero rows). (Query took 0.0004 seconds.)

```
SELECT department, SUM(fees_paid) AS total_fees_paid, AVG(GPA) AS average_GPA FROM students GROUP BY department HAVING COUNT(*) > 10;
```

☐ Profiling [\[Edit inline \]](#) [\[Edit \]](#) [\[Explain SQL \]](#) [\[Create PHP code \]](#) [\[Refresh \]](#)

department	total_fees_paid	average_GPA
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Query results operations

2. Find the top 5 students with the highest fees paid, ordered by GPA (in descending order) as a tiebreaker

✓ MySQL returned an empty result set (i.e. zero rows). (Query took 0.0002 seconds.)

```
SELECT * FROM students WHERE enrollment_status = 'inactive' AND fees_paid = 0;
```

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student_id	student_name	age	GPA	department	year_of_admission	fees_paid	credits_earned	enrollment_status
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Query results operations

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

Showing rows 0 - 1 (2 total, Query took 0.0004 seconds.)

```
SELECT * FROM students WHERE department = 'Engineering' AND GPA > 3.5 AND year_of_admission > 2020;
```

Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

Show all | Number of rows: 25 | Filter rows: Search this table | Sort by key: None

Extra options

	student_id	student_name	age	GPA	department	year_of_admission	fees_paid	credits_earned	enrollment_status
<input type="checkbox"/> Edit Copy Delete	1	Eleven	21	3.80	Engineering	2021	10000	120	active
<input type="checkbox"/> Edit Copy Delete	10	Robin	20	3.60	Engineering	2022	11000	125	active

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

```
SELECT * FROM students ORDER BY fees_paid DESC, GPA DESC LIMIT 5;
```

Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

Extra options

	student_id	student_name	age	GPA	department	year_of_admission	fees_paid	credits_earned	enrollment_status
<input type="checkbox"/> Edit Copy Delete	5	Max	20	3.50	Engineering	2020	12000	130	active
<input type="checkbox"/> Edit Copy Delete	10	Robin	20	3.60	Engineering	2022	11000	125	active
<input type="checkbox"/> Edit Copy Delete	9	Steve	21	3.80	Science	2021	10500	120	active
<input type="checkbox"/> Edit Copy Delete	1	Eleven	21	3.80	Engineering	2021	10000	120	active
<input type="checkbox"/> Edit Copy Delete	12	Nancy	23	3.90	Business	2019	9500	135	active

Check all | With selected: Edit Copy Delete Export

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

Showing rows 0 - 5 (6 total, Query took 0.0006 seconds.)

```
SELECT * FROM students WHERE age > 20 AND GPA > (SELECT AVG(GPA) FROM students);
```

Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

Show all | Number of rows: 25 | Filter rows: Search this table | Sort by key: None

Extra options

	student_id	student_name	age	GPA	department	year_of_admission	fees_paid	credits_earned	enrollment_status
<input type="checkbox"/> Edit Copy Delete	1	Eleven	21	3.80	Engineering	2021	10000	120	active
<input type="checkbox"/> Edit Copy Delete	2	Dustin	22	3.90	Science	2020	9000	110	active
<input type="checkbox"/> Edit Copy Delete	4	Mike	23	3.70	Science	2021	9500	115	inactive
<input type="checkbox"/> Edit Copy Delete	6	Eddie	22	4.00	Arts	2019	8000	140	active
<input type="checkbox"/> Edit Copy Delete	9	Steve	21	3.80	Science	2021	10500	120	active
<input type="checkbox"/> Edit Copy Delete	12	Nancy	23	3.90	Business	2019	9500	135	active