

Task 4: Aggregate Functions and Grouping











COUNT – Number of enrollments per student

```
SELECT s.name, COUNT(e.enrollment_id) AS total_enrollments
```

```
FROM enrollments e
```

```
JOIN students s ON e.student_id = s.student_id
```

```
GROUP BY s.name;
```

| Grid view | | Form view |
|---|---|---|
|  |  |  |
|  |  |  |
|  |  |  |
|  | Total rows loaded: 4 | |
| name | | total enrollments |
| 1 | Amit Patel | 3 |
| 2 | Bhavna Shah | 1 |
| 3 | Chetan Mehta | 1 |
| 4 | Deepa Rana | 1 |











COUNT – Number of students in each department

```
SELECT d.department_name, COUNT(s.student_id) AS total_students
```

```
FROM students s
```

```
JOIN departments d ON s.department_id = d.department_id
```

```
GROUP BY d.department_name;
```

| Grid view | | Form view |
|---|---|---|
|  |  |  |
|  |  |  |
|  |  |  |
|  | Total rows loaded: 3 | |
| department name | | total students |
| 1 | Computer Science | 3 |
| 2 | Electronics | 1 |
| 3 | Information Technology | 2 |

SUM – Total credits of courses each student is enrolled in

```
SELECT s.name, SUM(c.credits) AS total_credits
```

```









FROM enrollments e

JOIN students s ON e.student_id = s.student_id

JOIN courses c ON e.course_id = c.course_id

GROUP BY s.name;

```









| Grid view Form view | | |
|---|--------------|---------------|
|      1    Total rows loaded: 4 | | |
| | name | total credits |
| 1 | Amit Patel | 11 |
| 2 | Bhavna Shah | 3 |
| 3 | Chetan Mehta | 4 |
| 4 | Deepa Rana | 2 |

AVG – Average credits of courses per department

```

SELECT d.department_name, AVG(c.credits) AS avg_credits
FROM courses c
JOIN departments d ON c.department_id = d.department_id
GROUP BY d.department_name;

```

| Grid view Form view | | |
|---|------------------------|------------------|
|      1    Total rows loaded: 3 | | |
| | department name | avg credits |
| 1 | Computer Science | 3.66666666666667 |
| 2 | Electronics | 2 |
| 3 | Information Technology | 3 |









MIN – Earliest enrollment date per student

```

SELECT s.name, MIN(e.enrollment_date) AS first_enrollment
FROM enrollments e
JOIN students s ON e.student_id = s.student_id









```

GROUP BY s.name;

| Grid view Form view | | |
|--|--------------|------------------|
|      1    Total rows loaded: 4 | | |
| | name | first enrollment |
| 1 | Amit Patel | 2025-01-10 |
| 2 | Bhavna Shah | 2025-01-12 |
| 3 | Chetan Mehta | 2025-01-13 |
| 4 | Deepa Rana | 2025-01-14 |

MAX – Latest enrollment date per student

```
SELECT s.name, MAX(e.enrollment_date) AS latest_enrollment
FROM enrollments e
JOIN students s ON e.student_id = s.student_id
GROUP BY s.name;
```

| Grid view Form view | | |
|--|--------------|-------------------|
|      1    Total rows loaded: 4 | | |
| | name | latest enrollment |
| 1 | Amit Patel | 2025-01-15 |
| 2 | Bhavna Shah | 2025-01-12 |
| 3 | Chetan Mehta | 2025-01-13 |
| 4 | Deepa Rana | 2025-01-14 |

Multiple aggregates together per student

```
SELECT s.name,
       COUNT(e.enrollment_id) AS total_courses,
       SUM(c.credits) AS total_credits,
       AVG(c.credits) AS avg_credits,
       MIN(e.enrollment_date) AS first_enrollment,
       MAX(e.enrollment_date) AS last_enrollment
```

FROM enrollments e

JOIN students s ON e.student_id = s.student_id

JOIN courses c ON e.course_id = c.course_id

GROUP BY s.name;

Grid view

Form view

1

Total rows loaded: 4

| | name | total cours | total credit | avg credits | first enrolln | last enrollm |
|---|--------------|-------------|--------------|-------------------|---------------|--------------|
| 1 | Amit Patel | 3 | 11 | 3.666666666666667 | 2025-01-10 | 2025-01-15 |
| 2 | Bhavna Shah | 1 | 3 | 3 | 2025-01-12 | 2025-01-12 |
| 3 | Chetan Mehta | 1 | 4 | 4 | 2025-01-13 | 2025-01-13 |
| 4 | Deepa Rana | 1 | 2 | 2 | 2025-01-14 | 2025-01-14 |

HAVING – Show only students with more than 1 enrollment

SELECT s.name, COUNT(e.enrollment_id) AS total_enrollments

FROM enrollments e


JOIN students s ON e.student_id = s.student_id


GROUP BY s.name


HAVING COUNT(e.enrollment_id) > 1;


Grid view


Form view














1







Total rows loaded: 1

| | name | total enrollments |
|---|------------|-------------------|
| 1 | Amit Patel | 3 |

HAVING – Show departments where average course credits > 3









SELECT d.department_name, AVG(c.credits) AS avg_credits

FROM courses c

JOIN departments d ON c.department_id = d.department_id

GROUP BY d.department_name

HAVING AVG(c.credits) > 3;

| Grid view | | Form view | |
|---|------------------|---|--|
|  | |     1   | |
|  | | Total rows loaded: 1 | |
| | department name | avg credits | |
| 1 | Computer Science | 3.66666666666667 | |