USE COLLEGE;

**SLICE:** Filtering data based on a specific department (AI&DS)

SELECT fe.enrollment\_id, st.student\_name, c.course\_name, i.instructor\_name, s.semester\_name, fe.grade

FROM fact\_enrollments fe

JOIN students st ON fe.student\_id = st.student\_id

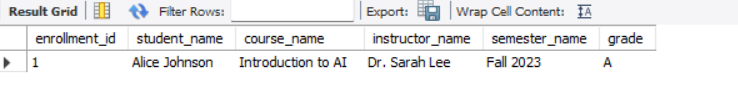
JOIN courses c ON fe.course\_id = c.course\_id

JOIN instructors i ON fe.instructor\_id = i.instructor\_id

JOIN semesters s ON fe.semester\_id = s.semester\_id

JOIN departments d ON st.department\_id = d.department\_id

WHERE d.department\_name = 'AI&DS';



**DICE:** Filtering data for a specific course and grade (Introduction to AI, Grade A)

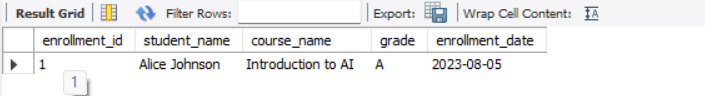
SELECT fe.enrollment\_id, st.student\_name, c.course\_name, fe.grade, fe.enrollment\_date

FROM fact\_enrollments fe

JOIN students st ON fe.student\_id = st.student\_id

JOIN courses c ON fe.course\_id = c.course\_id

WHERE c.course\_name = 'Introduction to AI' AND fe.grade = 'A';



**ROLLUP:** Aggregating data by department and semester

SELECT d.department\_name, s.semester\_name,

COUNT(fe.enrollment\_id) AS total\_enrollments

FROM fact\_enrollments fe

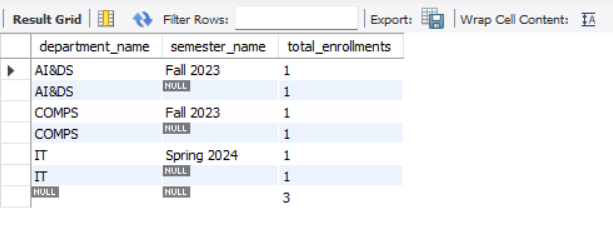
JOIN students st ON fe.student\_id = st.student\_id

JOIN departments d ON st.department\_id = d.department\_id

JOIN semesters s ON fe.semester\_id = s.semester\_id

GROUP BY d.department\_name, s.semester\_name

WITH ROLLUP;



**DRILLDOWN:** Viewing detailed enrollment data for a specific semester (Fall 2023)

SELECT fe.enrollment\_id, st.student\_name, c.course\_name, i.instructor\_name, s.semester\_name, fe.grade

FROM fact\_enrollments fe

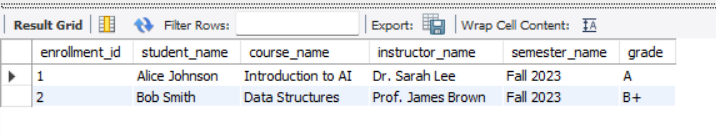
JOIN students st ON fe.student\_id = st.student\_id

JOIN courses c ON fe.course\_id = c.course\_id

JOIN instructors i ON fe.instructor\_id = i.instructor\_id

JOIN semesters s ON fe.semester\_id = s.semester\_id

WHERE s.semester\_name = 'Fall 2023';



**PIVOT:** Simulating a pivot table by converting rows into columns for grades

SELECT d.department\_name,

SUM(CASE WHEN fe.grade = 'A' THEN 1 ELSE 0 END) AS grade\_A,

SUM(CASE WHEN fe.grade = 'B+' THEN 1 ELSE 0 END) AS grade\_B\_plus,

SUM(CASE WHEN fe.grade = 'A-' THEN 1 ELSE 0 END) AS grade\_A\_minus

FROM fact\_enrollments fe

JOIN students st ON fe.student\_id = st.student\_id

JOIN departments d ON st.department\_id = d.department\_id

GROUP BY d.department\_name;

