1. Show each student's first name and their course name using an INNER JOIN.

Ans:

Select s.firstname , c.coursename from students s inner join course c on s.course\_id = c.course\_id;

1. Display all students and the department of their course using an INNER JOIN.

Ans:

Select s.\* , c.department from students s inner join course c on s.course\_id = c.course\_id;

1. Show course names and the students enrolled in them (only matching rows).

Ans:

Select c.course\_name , s.stucent\_name ,s.student\_id,s.students\_enrolled\_status from students s inner join course c on s.course\_id = c.course\_id;

1. List all students whose course credits are greater than 3.

Ans:

Select s.\* from students s left join course c on c.ourse\_id = s.course\_id where c.course\_credit > 3;

1. Find students who are in the 'Science' department.

Ans:

Select s.\* from students s left join course c on c.course\_id = s.course\_id where c.department = ‘Science’;

1. Show all students and their course names, including students without a course.

Ans:

Select s.student\_name ,s.student\_id, c.course\_name from students s left join course c on s.course\_id = s.course\_id;

1. Show all courses and the students enrolled, including courses without any students.

Ans:

Select c.course\_name , s.student\_enrolled\_status from student s right join course c on c.course\_id = s.course\_id;

1. List students who have not been assigned a course yet.

Ans:

Select s.\* from student s left join course c on c.course\_id = s.course\_id where s.student\_enrolled\_status IS NULL;

1. Show all courses along with the number of students enrolled (0 if none).

Ans:

Select c.\* ,count(student\_id) as enrolled\_student from course c left join student s on c.ourse\_id = s.course\_id group by s.course\_id;

1. Display all students with their course department (NULL if not assigned).

Ans:

Select s.\* from student s left join course c on s.course\_id = c.course\_id

union

select case

when s.course\_id is null then null

when s.course\_id is Not null then c.course\_name

end

from student s inner join course c on s.course\_id = c.course\_id;

1. Display all course names with their student names, even if no students are enrolled.

Ans:

Select c.course\_name , s.student\_name from students s from course c right join students s on c.course\_id = s.course\_id;

1. Show all departments and the students studying in them, using RIGHT JOIN.

Ans:

Select c.\* from course c right join student s on c.course\_id = s.course\_id where student\_enrolled\_status is not null;

1. Find courses that do not have any students enrolled.

Ans:

Select c.course\_name from course c left join students s on c.course\_id = s.course\_id;

1. Show all course names and credits, even if they don't have any students.

Ans:

Select c.course\_name ,c.course\_credits from course c left join students s on c.course\_id = s.course\_id;

1. List all departments and match them with students via course.

Ans:

Select c.department , s.student\_name from student inner join course c on s.course\_id = c.course\_id;

1. Display all students and all courses, showing NULL where data is missing.

Ans:

Select s.student\_name from students s left join course c on c.course\_id = s.course\_id

Union

Select c.course\_name from students s right join course c on c.course\_id = s.course\_id;

1. List all student names and all course names, even if they don't match.

Ans:

Select s.student\_name from students s left join course c on c.course\_id = s.course\_id

Union

Select c.course\_name from students s right join course c on c.course\_id = s.course\_id;

1. Show student names, course names, and department heads.

Ans:

(Select s.students\_name from students s left join course c on c.course\_id = s.course\_id) inner join department d on c.dept\_id = d.dept\_id;

1. Find students who are in courses from the 'Technology' department.

Ans:

(Select s.student\_name , s.student\_enrolled\_status from students s left join course c on c.course\_id = s.course\_id) inner join department d on s.dept\_id = d.dept\_id where d.department\_name = ‘Technology’;

1. Show department names and total students in each department.

Ans;

Select s.department\_name ,count(student\_id) from students s left join department d on s.dept\_id = d.dept\_id group by dept\_id;

1. Display student names, their department, and credits for their course.

Ans:

Select s.student\_name ,s.department ,c.course\_credits from student inner join course c on c.course\_id = s.course\_id ;

1. Show all departments with courses and students (include those with no students).

Ans:

Select d.department\_name from department inner Join (select c.course\_name ,s.students\_name from course c inner join students s on s.course\_id = c.course\_id) on c.dept\_id = d.dept\_id;

1. Find pairs of students studying the same course.

Ans:

Select s.students\_name , c.course\_name from students s cross join course c where c.course\_id = s.course\_id;

1. Show all possible student pairs where both are in the same department.

Ans:

Select s.\* from students s cross join students s1 where s.dept\_id = s1.dept\_id;

1. List all students who share a course with 'Alice'.

Ans:

Select s.\* from students s where s.course\_name = (select s.course\_name from students where s.student\_name = ‘Alice’);

1. Find the total number of students in each course.

Ans:

Select count(\*) ,s.course\_name from students s group by s.course\_id;

1. Find the average credits for courses that have students enrolled.

Ans:

Select s.course\_name from students s left join course c on s.course\_id = c.course\_id

Union

Select Avg(c.course\_ceridts) from students s right join course c on c.course\_id = s.course\_id;

1. Show the department with the highest number of enrolled students.

Ans:

Select s.department\_name from students right join (select count(dept\_id) as maximum\_enrolled, department\_name from students where s.students\_enrolled\_status is Not null group by dept\_id) f on s.department\_name = f.department\_name order by maximum\_enrolled;

1. Display students who are in courses with credits above the average credits.

Ans:

Select s.students\_name from students s natural join course c where c.course\_credits > (select AVG(cerdits) from course );

1. Show students whose course is in the same department as 'Physics'.

Ans:

Select s.\* from students natural join course where department\_name = ‘Physics’;