**RDBMS Task#1 Answer:**

1. Select department\_id, count(\*) from students group by department\_id;
2. Select course\_name, Professor\_id from courses;
3. [SELECT](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/select.html) course\_id, [AVG](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/aggregate-functions.html%23function_avg)([CASE](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/control-flow-functions.html%23operator_case)

WHEN Grade = 'A+' THEN 5 WHEN Grade = 'A' THEN 4 WHEN  Grade = 'B+' THEN 3 WHEN Grade = 'B' THEN 2 WHEN Grade = 'C+' THEN 1 WHEN Grade = 'C' THEN 0 END)

AS AverageGrade FROM enrollments GROUP BY course\_id;

1. SELECT student\_id, first\_name, last\_name FROM Students

WHERE student\_id NOT IN (SELECT student\_id FROM Enrollments);

1. [SELECT](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/select.html) [count](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/aggregate-functions.html%23function_count)(course\_name), department\_id from courses group by department\_id;
2. SELECT students.student\_id, students.first\_name

FROM Students

JOIN Enrollments ON students.student\_id = enrollments.student\_id

JOIN Courses ON enrollments.course\_id = courses.course\_id

WHERE courses.course\_name = 'Introduction to Philosophy';

1. SELECT courses.course\_id, courses.course\_name, COUNT(enrollments.enrollment\_id) AS enrollment\_count FROM Courses

JOIN Enrollments ON courses.course\_id = enrollments.course\_id

GROUP BY courses.course\_id, courses.course\_name

ORDER BY enrollment\_count DESC

LIMIT 1;

1. SELECT departments.department\_id,departments.department\_name, AVG(courses.credits) AS avg\_credits\_per\_student

FROM Enrollments

JOIN Courses ON enrollments.course\_id = courses.course\_id

JOIN Departments ON courses.department\_id = departments.department\_id

GROUP BY departments.department\_id, departments.department\_name;

9. SELECT professors.professor\_id, professors.first\_name, professors.last\_name, COUNT(DISTINCT courses.department\_id) AS department\_count

FROM Professors

JOIN Courses ON professors.professor\_id = courses.professor\_id

JOIN Departments ON courses.department\_id = departments.department\_id

GROUP BY professors.professor\_id, professors.first\_name, professors.last\_name

HAVING COUNT(DISTINCT courses.department\_id) > 1;