

INST327 - Assignment 4

Be sure you complete both questions.

Please consult the rubric and instruction sheets before starting the assignment. Usage of some keywords or structures that are not allowed will result in point deductions. For this assignment, this includes “hardcoding” specific values such as `id = x`, where `x` is a PK value from a table, or calculated values such as sums and averages. Instead, use appropriate functions and a “dynamic calculation” approach to calculate these values.

Special note: after assignment 3’s CRUD operations you should re-run the `create_ischool.sql` script to make sure your data is correct.

Q.1) Aggregate Functions (50 points)

Write a query that replicates the result set shown below, matching all data and format aspects, including column headers. The columns are `enrollments`, which lists the number of courses the student is enrolled in; `credit_count`, which lists the number of credits they have taken; and `latest_end`, which is the latest end time from the courses they are enrolled in (*See the `time_format()` function for help with formatting here*). Only consider sections from the 2021 year. Include a final row that lists the super-aggregates for each column (i.e total enrollments, total credits of all students, latest end time). Only include students with more than 2 enrollments.

	student_name	enrollments	credit_count	latest_end
▶	Argue, Carley	5	13	03:15:00 PM
	Barker, Murray	5	13	03:15:00 PM
	Brooke, Edward	6	18	06:45:00 PM
	Cheshire, Ninetta	5	15	06:45:00 PM
	Cornell, Worth	5	13	03:15:00 PM
	Ellul, Genna	5	13	03:15:00 PM
	Ito, Aiko	5	13	03:15:00 PM
	Martina, Zoe	5	13	03:15:00 PM
	Matityahu, Carolyn	5	13	03:15:00 PM
	Nguyen, Dustin	5	13	03:15:00 PM
	Oguz, Torie	6	18	06:45:00 PM
	Quintana, Nairo	5	13	03:15:00 PM
	Slaughter, Francis	5	15	06:45:00 PM
	Van Baaren, Ellene	5	15	06:45:00 PM
	NULL	92	258	08:45:00 PM

15 rows returned.

Q.2) Subquery/CTE (50 points)

Replicate the result set below which counts both the number of sections and the number of students for each course. Only include courses with 5 or more enrolled students. To properly count both values **you must use either a subquery or CTE** of your choice. Counting both values within one SELECT query will return incorrect results, so using a subquery or CTE is necessary.

(+2 points bonus): Provide a short explanation of why you used either option (subquery/CTE). Neither answer is more correct, we would just like you to explain your choice. There is no rubric for this but answers should be more than a simple sentence.

	course	course_description	section_count	enrollment_count
▶	INST327	Database Design and Modeling	16	50
	INST314	Statistics for Information Science	10	10
	INST362	User-Centered Design	4	10
	INST377	Dynamic Web Applications	4	10
	INST101	Bits and Bytes of Computer and Information Sciences	3	9
	INST630	Introduction to Programming for the Information Professional	2	6
	INST710	User Experience Research Methods	1	6
	INST414	Design Science Techniques	3	5

8 rows returned.