

ITCS 241 Database Management Systems

SQL Class Assignment 4 (Extra)

(No submission required)

Preparation before the SQL Class Assignment Exercise

We will use an untouched `tinycollege` database for this exercise. Hence, before you do the exercise, please drop (delete) the current version of `tinycollege` database you used in the class and create a brand new `tinycollege` database from the sql script. Otherwise, you can create a copy of the `tinycollege` database, i.e., `tinycollege2`, for these practices :).

Write the DQL (`SELECT`) commands for the following queries.

65. List all professors who work in the same department as the professor's employee number 209. The output should include the professor first name, last name, department code, department name and exclude the professor's employee number 209. **Expected 4 attributes, 2 rows as shown in the following output table**

emp_fname	emp_lname	dept_code	dept_name
Peter	Rob	CIS	Computer Info. Systems
Carlos	Coronel	CIS	Computer Info. Systems

66. List all first names of both students and professors whose names are used at least twice. The result should include the first name (sorted alphabetically) and the number of times the names were used.

Expected 2 attributes, 10 rows as shown in the following output table

fname	num_used
Anne	3
Annelise	2
Carlos	2
George	4
Gerald	2
John	3
Marie	2
Robert	4
Ronald	3
William	2

67. List courses that do not have class offered. The result should show course code, course name, number of the class offered.

Expected 3 attributes, 3 rows as shown in the following output table

course_code	course_name	num_class
ENG-220	Literature	0
FIN-300	Money and Banking	0
MATH-240	Intro. to Calculus	0

68. Find a list of professors whose current ages are below the average of all professors.
Expected 3 attributes, 10 rows as shown in the following output table

emp_fname	emp_lname	age
Ralph	Matler	48
Anne	Doornberg	58
Doreen	Stoddard	61
Annelise	Ritula	64
Robert	Smith	66
Herman	Williams	66
Willa	Dexter	68
Ronald	Donelly	69
Ismael	Osaki	69
Van	Thieu	70

69. Find a list of students who have not enrolled in any classes, sorted by student number. **Expected 3 attributes, 19 rows as shown in the following output table**

stu_num	stu_fname	stu_lname
323119	George	Papar
324273	John	Smith
324291	Gerald	Robertson
324299	John	Smith
324567	Samuel	Willow
326578	George	Weston
328799	Robert	Smith
330010	Georgette	Schlumberg
332345	Annelise	Paulus
341101	Ronald	Richter
341108	Darren	Smith
342715	Marie	Alvarez
342722	Louise	Browning
342745	Warren	Ularen
342748	George	Perdurax
345755	Jeanine	Washington
345767	Rupert	Jones
345779	Kenna	Hernando
900245	Randy	Peppard

70. Find a list of courses that do not have any classes. **Expected 1 attribute, 3 rows as shown in the following output table**

course_name
Literature
Money and Banking
Intro. to Calculus

71. List all professors, and their number of teaching classes, who teach less than 2 classes (included the ones who do not have any classes). **Expected 2 attributes, 6 rows as shown in the following output table**

fullname	num_classes
Ross Washington	1
Gerald Grazteveski	1
Herman Williams	1
Hermine Jones	1
Ronald Okomoto	0
Ralph Matler	1

72. List all professors, and their department name, who do not have any advisees. **Expected 3 attributes, 5 rows as shown in the following output table**

emp_fname	emp_lname	dept_name
Arnelle	Heffington	Accounting
Van	Thieu	Biology
Hermine	Jones	Mathematics
Ronald	Okomoto	English
Ralph	Matler	Economics/Finance

73. List all students and professors who are in the “CIS” department. **Expected 2 attributes, 10 rows as shown in the following output table**

First name	Last Name
Anne	Robertson
Anne	Smithson
Walter	Oblonski
Carlos	Innugado
Georgette	Schlumberg
John	Brewton
Antoinette	Johnson
Peter	Rob
Melanie	Smith
Carlos	Coronel

74. List the name of the course (course code and course name) provided for class section 1 but not for class section 2. **Expected 2 attributes, 11 rows as shown in the following output table**

course_code	course_name
ACCT-311	Managerial Accounting
ART-210	Intro. to Art
ART-340	Jewelry Design
BIOL-220	Biology and the Environment
CIS-320	Spreadsheet Applications
CIS-420	Database Design and Implementation
ECON-250	Macroeconomics
HIST-220	U.S. History Through the 1900s
MATH-243	Mathematics for Managers
PSYCH-200	Intro. to Psychology
SOC-200	Intro. to Sociology

75. List all professors who teach the classes more than the average number of teaching class per professors. **Expected 4 attributes, 5 rows as shown in the following output table**

emp_num	emp_fname	emp_lname	num_class_teach
105	Annelle	Heffington	3
228	Carlos	Coronel	5
162	Peter	Rob	4
191	Willa	Dexter	3
104	Preston	Yukon	4

76. List the students whose last name is shorter than the average length of all students' last name. Sort the result by student's first name. **Note:** you can use `LENGTH()` to find the number of characters in a string. **Hint:** the average length of the student last names is 6.9211 characters. **Expected 2 attributes, 15 rows as shown in the following output table**

stu_fname	stu_lname
Annelise	Paulus
Darren	Smith
George	Papar
George	Weston
John	Smith
Juliette	Brewer
Leontine	Olenga
Marie	Warren
Robert	Rutan
Robert	Smith
Rupert	Jones
Samuel	Willow
Sidney	Wesson
Warren	Ularen
William	Bowser

77. List the students whose last name is longer than their last name. Sort the result by student's first name. **Note:** you can use `LENGTH()` to find the number of characters in a string. **Expected 2 attributes, 10 rows as shown in the following output table**

stu_fname	stu_lname
Annelise	Paulus
Antoinette	Johnson
Darren	Smith
George	Papar
Juliette	Brewer
Leontine	Olenga
Robert	Rutan
Robert	Smith
Rupert	Jones
William	Bowser

78. List the name of the departments that have the number of the students equals to the number of the professors. **Expected 2 attributes, 4 rows as shown in the following output table**

dept_code	dept_name
MATH	Mathematics
ENG	English
SOC	Sociology
PSYCH	Psychology

79. List the students whose GPA is above average GPA of their department. Sort the result by the department codes. **Expected 6 attributes, 18 rows as shown in the following output table**

stu_num	stu_fname	stu_lname	stu_gpa	dept_code	dept_name
322345	Sidney	Wesson	3.91	ACCT	Accounting
324258	Juliette	Brewer	3.48	ACCT	Accounting
324274	Raphael	Katinga	2.91	ACCT	Accounting
328993	Anton	Jubilar	2.95	ACCT	Accounting
328799	Robert	Smith	3.51	BIOL	Biology
900245	Randy	Peppard	2.61	BIOL	Biology
311198	Anne	Robertson	3.04	CIS	Computer Info. Systems
330010	Georgette	Schlumberg	3.21	CIS	Computer Info. Systems
345758	Antoinette	Johnson	3.45	CIS	Computer Info. Systems
342715	Marie	Alvarez	2.98	ENG	English
345767	Rupert	Jones	3.33	ENG	English
320367	Suzanna	Grafton	2.81	HIST	History
345779	Kenna	Hernando	3.88	HIST	History
332345	Annelise	Paulus	3.92	MATH	Mathematics
319989	Heinz	Schloss	3.45	MKT/MGT	Marketing/Management
323119	George	Papar	2.78	MKT/MGT	Marketing/Management
327689	Leontine	Olenga	3.12	MKT/MGT	Marketing/Management
345755	Jeanine	Washington	2.87	MKT/MGT	Marketing/Management

80. List the students whose GPA is the highest GPA of their department. Sort the result by the department codes. **Expected 6 attributes, 11 rows as shown in the following output table**

stu_num	stu_fname	stu_lname	stu_gpa	dept_code	dept_name
322345	Sidney	Wesson	3.91	ACCT	Accounting
345783	LaRue	Boisseaux	3.02	ART	Fine Arts
328799	Robert	Smith	3.51	BIOL	Biology
345758	Antoinette	Johnson	3.45	CIS	Computer Info. Systems
342721	Robert	Rutan	3.01	ECON/FIN	Economics/Finance
345767	Rupert	Jones	3.33	ENG	English
345779	Kenna	Hernando	3.88	HIST	History
332345	Annelise	Paulus	3.92	MATH	Mathematics
319989	Heinz	Schloss	3.45	MKT/MGT	Marketing/Management
342745	Warren	Ularen	2.51	PSYCH	Psychology
342722	Louise	Browning	3.72	SOC	Sociology