ITCS241: Database Management System
Semester 1/2021, Faculty of ICT

Student Name:_____**Student ID:**_____

Assignment: SQL Part III

Preparation before the SQL 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 previous class, and create a brand new tinycollege database from the following SQL script [Link]. **Or** you can create a copy of the `tinycollege` database, i.e., `tinycollege2`, for these practices.

Use the non-modified `tinycollege` database for the following questions. For each query below, write the DQL (`SELECT`) commands and save all commands in the the SQL file for submission: "`sql3_sY_xx88xxx`" where Y is your section and xx88xxx is your MU student ID

Q1. List the top 10 oldest professors (first name and last name) and their age at the current year. The result must contain two columns: Name and Age, sorted by the oldest professor to the youngest one.
Expected 2 attributes, 10 rows as shown in the following output table

Name	Age
Robert Smith	84
Gerald Graztevski	82
Peter Rob	81
Ross Washington	80
Ronald Okomoto	77
James Blalock	76
Melanie Smith	75
Preston Yukon	73
George Smithson	73
Carlos Coronel	72

Q2. Find the average GPA of "CIS" student. The result must have only one column named "Average CIS GPA" and the average GPA must be rounded into 2 decimal places. **Expected 1 attributes, 1 row** as shown in the following output table

Average CIS GPA
2.56

Student Name:_____**Student ID:**_____

Q3. Find how many 3-credit courses in total offered by "CIS", "MATH", "BIOL" and "ENG". The result must have only one column named "# of Courses". **Expected 1 attributes, 1 row** as shown in the following output table

of Courses
9

Hint: All 9 courses include `CIS-220`, `CIS-320`, `CIS-370`, `ENG-210`, `ENG-220`, `MATH-120`, `MATH-243`, `QM-261`, and `SPCH-240`

Q4. Find the total numbers of students of in each of the following departments: "CIS", "MATH", "BIOL" and "ENG" department. The result must contain two columns: **`dept_code`** and "Total # of Students" **Expected 2 attributes, 4 rows** as shown in the following output table

dept_code	Total # of Students
CIS	7
BIOL	5
MATH	2
ENG	3

Q5. List all departments (department code) and the average GPA of their (displayed in 2 decimal places). The result must have two columns: `dept_code` and "Average GPA", ranked from the highest GPA value to the lowest one. **Expected 2 attributes, 11 rows** as shown in the following output table

dept_code	Average GPA
SOC	3.72
MATH	3.32
ART	3.02
ECON/FIN	3.01
ENG	2.92
ACCT	2.89
HIST	2.74
MKT/MGT	2.72
CIS	2.56
BIOL	2.53
PSYCH	2.51

Student Name:_____**Student ID:**_____

Q6. List all departments (department code) that have the average GPA of their students higher than 3.00. The result must have two columns: **`dept_code`** and "Average GPA" displayed in 2 decimal places and ranked from the highest value to the lowest one
Expected 2 attributes, 4 rows as shown in the following output table

dept_code	Average GPA
SOC	3.72
MATH	3.32
ART	3.02
ECON/FIN	3.01

Q7. Find the total numbers of students and the average GPA of students of each class (e.g. 1, 2, 3 and 4). The result must have three columns: **`stu_class`** and "Total students with GPA" and "Average Class GPA" displayed in 2 decimal places and ordered by class. Also, the result should exclude the students who do not have the GPA reported from the counting and averaging list. **Expected 3 attributes, 4 rows** as shown in the following output table

stu_class	Total students with GPA	Average class GPA
1	4	2.57
2	11	2.62
3	11	2.76
4	10	3.11

Q8. List all students who have their professor name begin with "P" or "A". The result must have three columns: **`stu_num`**, "student", (student first name and last name) and "advisor" (professor first name and last name), sorted by advisor's names alphabetically
Expected 3 attributes, 7 rows as shown in the following output table

stu_num	student	advisor
341101	Ronald Richter	Anne Doornberg
345783	LaRue Boisseaux	Anne Doornberg
324273	John Smith	Annelise Ritula
332345	Annelise Paulus	Annelise Ritula
311198	Anne Robertson	Peter Rob
324269	Walter Oblonski	Peter Rob
345767	Rupert Jones	Preston Yukon

Student Name:_____**Student ID:**_____

Q9. List all "CIS" professor who teach at least three classes. The result must have four columns: emp_num, dept_code, "professor" (professor first name and last name) and "Total classes"
Expected 4 attributes, 2 rows as shown in the following output table

emp_num	dept_code	professor	Total classes
228	CIS	Carlos Coronel	5
162	CIS	Peter Rob	4

Q10. Show the grade report of the students who took any courses beginning with "CIS". The result must consist of `stu_fname, stu_lname, class_code, grade` and `course_code` and must be sorted by `course_code` and then `grade` respectively. **Expected 5 attributes, 14 rows** as shown in the following output table

stu_fname	stu_lname	class_code	grade	course_code
John	Brewton	20017	A	CIS-220
Sidney	Wesson	20018	A	CIS-220
Robert	Rutan	20017	B	CIS-220
Jan	Huizinga	20018	B	CIS-220
William	Bowser	20019	B	CIS-220
Juliette	Brewer	20019	B	CIS-220
Marie	Warren	20019	C	CIS-220
Antoinette	Johnson	20025	A	CIS-320
Anne	Robertson	20030	A	CIS-370
Anne	Smithson	20030	B	CIS-370
Antoinette	Johnson	20030	B	CIS-370
Carlos	Innugado	20030	C	CIS-370
Walter	Oblonski	20040	A	CIS-420
Anton	Jubilar	20040	B	CIS-420

After completing sql3_sY_xx88xxx.sql with 10 questions, submit the sql file in MyCourses.
