

**ITEC 3335**  
**Database Development**  
**Fall 2019**  
**Homework #5**

**More SQL**

Install the database toyu in your MySQL by [executing the sql file: createtoyu.sql.txt](#) in MySQL console. This assignment uses toyu.

**Q1 to Q4: on DDL and DML writing**

Write SQL statements for the following problems.

(1) Set the number of alerts (n\_alerts) of every student enrollment to NULL if it is originally 0.

Before your SQL statement:

```
mysql> SELECT * FROM Enroll;
```

stuId	classId	grade	n_alerts
100000	10000	A	0
100001	10000	NULL	NULL
100002	10000	B-	3
100000	10001	A	2
100001	10001	A-	0
100000	10002	B+	1
100002	10002	B+	2
100000	10003	C	0
100002	10003	D	4
100004	10003	A	0
100005	10003	NULL	NULL
100000	10004	A-	1
100004	10004	B+	NULL
100005	10004	A-	0
100006	10004	C+	NULL
100005	10005	A-	0
100006	10005	A	NULL
100005	10006	B+	NULL
100007	10007	F	4
100008	10007	C-	0
100007	10008	A-	0
100000	11001	D	4

22 rows in set (0.02 sec)

After executing your SQL statement:

```
mysql> SELECT * FROM Enroll;
```

stuId	classId	grade	n_alerts
100000	10000	A	NULL
100001	10000	NULL	NULL
100002	10000	B-	3
100000	10001	A	2
100001	10001	A-	NULL

100000	10002	B+	1
100002	10002	B+	2
100000	10003	C	NULL
100002	10003	D	4
100004	10003	A	NULL
100005	10003	NULL	NULL
100000	10004	A-	1
100004	10004	B+	NULL
100005	10004	A-	NULL
100006	10004	C+	NULL
100005	10005	A-	NULL
100006	10005	A	NULL
100005	10006	B+	NULL
100007	10007	F	4
100008	10007	C-	NULL
100007	10008	A-	NULL
100000	11001	D	4

22 rows in set (0.00 sec)

(2) Three students (id, 100001, 100003 and 100005) are now enrolled in the class with id (11002). There are no grades or n\_alerts yet. Provide the SQL statement to update you accordingly. After executing your SQL statement, we should have:

```
mysql> select * from enroll;
```

stuId	classId	grade	n_alerts
100000	10000	A	NULL
100001	10000	NULL	NULL
100002	10000	B-	3
100000	10001	A	2
100001	10001	A-	NULL
100000	10002	B+	1
100002	10002	B+	2
100000	10003	C	NULL
100002	10003	D	4
100004	10003	A	NULL
100005	10003	NULL	NULL
100000	10004	A-	1
100004	10004	B+	NULL
100005	10004	A-	NULL
100006	10004	C+	NULL
100005	10005	A-	NULL
100006	10005	A	NULL
100005	10006	B+	NULL
100007	10007	F	4
100008	10007	C-	NULL
100007	10008	A-	NULL
100000	11001	D	4
100001	11002	NULL	NULL
100003	11002	NULL	NULL
100005	11002	NULL	NULL

25 rows in set (0.00 sec)

(3) Provide the SQL statement to undo the effect of (2). After executing your SQL statement, we should have the following result again:

```
mysql> SELECT * FROM Enroll;
```

stuId	classId	grade	n_alerts
100000	10000	A	NULL
100001	10000	NULL	NULL
100002	10000	B-	3
100000	10001	A	2

100001	10001	A-	NULL
100000	10002	B+	1
100002	10002	B+	2
100000	10003	C	NULL
100002	10003	D	4
100004	10003	A	NULL
100005	10003	NULL	NULL
100000	10004	A-	1
100004	10004	B+	NULL
100005	10004	A-	NULL
100006	10004	C+	NULL
100005	10005	A-	NULL
100006	10005	A	NULL
100005	10006	B+	NULL
100007	10007	F	4
100008	10007	C-	NULL
100007	10008	A-	NULL
100000	11001	D	4

22 rows in set (0.00 sec)

(4) Create a temporary table student\_2 that has all columns and keys of the table student, plus two additional columns advisor\_deptCode and advisor\_rank, which are the department code and the rank of the student's advisor.

```
mysql> DESC student_2;
```

Field	Type	Null	Key	Default	Extra
stuId	int(11)	NO	PRI	NULL	NULL
fname	varchar(20)	NO		NULL	NULL
lname	varchar(20)	NO		NULL	NULL
major	varchar(4)	YES		NULL	NULL
minor	varchar(4)	YES		NULL	NULL
credits	int(3)	YES		0	NULL
advisor	int(11)	YES		NULL	NULL
advisor_deptCode	varchar(4)	YES		NULL	NULL
advisor_rank	varchar(25)	YES		NULL	NULL

9 rows in set (0.03 sec)

(5) Populate student\_2 using the contents of existing tables.

After executing your SQL statement:

```
mysql> SELECT * FROM student_2;
```

stuId	fname	lname	major	minor	credits	advisor	advisor_deptCode	advisor_rank
100000	Tony	Hawk	CSCI	CINF	40	1011	CSCI	Professor
100001	Mary	Hawk	CSCI	CINF	35	1011	CSCI	Professor
100002	David	Hawk	CSCI	ITEC	66	1011	CSCI	Professor
100003	Catherine	Lim	ITEC	CINF	20	1017	ITEC	Professor
100004	Larry	Johnson	ITEC	NULL	66	1017	ITEC	Professor
100005	Linda	Johnson	CINF	ENGL	13	1015	CINF	Professor
100006	Lillian	Johnson	CINF	ITEC	18	1015	CINF	Professor
100007	Ben	Zico	NULL	NULL	16	NULL	NULL	NULL
100008	Bill	Ching	ARTS	ENGL	90	1018	ARTS	Assistant Professor
100009	Linda	King	ARTS	CSCI	125	1018	ARTS	Assistant Professor

10 rows in set (0.00 sec)

## Q6 to Q10: DML Data Retrieval

Re-install the database toyu in your MySQL by [executing the sql file: toyu.sql.txt](#) in MySQL console again so you start with the original instance.

Write SQL SELECT queries for the following problems.

(6) List the student names, their majors, minors, credits, their advisor names for those majoring or minoring in ITEC. Note the names of the result columns.

id	first name	last name	major	minor	credits	faculty advisor
100002	David	Hawk	CSCI	ITEC	66	Paul Smith
100003	Catherine	Lim	ITEC	CINF	20	Deborah Gump
100004	Larry	Johnson	ITEC	NULL	66	Deborah Gump
100006	Lillian	Johnson	CINF	ITEC	18	Daniel Kim

4 rows in set (0.00 sec)

(7) List the names of the faculty who advise a CSCI major student in the following manner.

CSCI advisor
Paul Smith

1 row in set (0.00 sec)

(8) List the names of the faculty who do not advise a CSCI major student in the following manner.

Not CSCI advisor
Mary Tran
David Love
Sharon Mannes
Daniel Kim
Andrew Byre
Deborah Gump
Art Allister
Benjamin Yu
Katrina Bajaj
Jorginlo Neymar

10 rows in set (0.00 sec)

(9) List the student names, class names and their enrollment grades for all CSCI classes. Show the results only for students majoring in 'CSCI'. Show the result in ascending order of student names.

student	course	grade
David Hawk	Data Structures	B-
David Hawk	DBMS	B+
Mary Hawk	Data Structures	NULL
Mary Hawk	Design of Database Systems	A-
Tony Hawk	Data Structures	A
Tony Hawk	Design of Database Systems	A
Tony Hawk	DBMS	B+
Tony Hawk	Design of Database Systems	D

8 rows in set (0.00 sec)

(10) List the names of the faculty who have taught both 'Design of Database Systems' and 'Data Structures'.

```
+-----+
| faculty |
+-----+
| Paul Smith |
+-----+
1 row in set (0.00 sec)
```

Submit an executable SQL text file with SQL statements. Naming convention should be the same for all homework submission: H<assignment number>\_itec3335\_<sid>\_<lastname>.<extension>. For example, H5\_itec3335\_0111006\_Bond\_Jane.sql.txt.