

20BCS042 | Mohd Adil

Assignment 9

```
mysql> create table Student(  
-> snum int,  
-> sname varchar(10),  
-> major varchar(10),  
-> level varchar(2),  
-> age int);  
Query OK, 0 rows affected (0.05 sec)
```

```
mysql> create table class(  
-> cname varchar(6),  
-> meets_at varchar(10),  
-> room varchar(4),  
-> fid int);  
Query OK, 0 rows affected (0.02 sec)
```

```
mysql> create table Enrolled(  
-> snum int,  
-> cname varchar(6));  
Query OK, 0 rows affected (0.03 sec)
```

```
mysql> create table Faculty(  
-> fid int,  
-> fname varchar(10),  
-> deptid int);  
Query OK, 0 rows affected (0.02 sec)
```

```
mysql> insert into student  
-> values  
-> (101, 'John', 'CS', 'SR', 19),  
-> (102, 'Smith', 'CS', 'JR', 20),  
-> (103, 'Jacob', 'ECE', 'SR', 20),  
-> (104, 'Tom', 'CS', 'JR', 20),  
-> (105, 'Sid', 'CS', 'JR', 20),  
-> (106, 'Harry', 'History', 'SR', 21),  
-> (107, 'Hellen', 'CS', 'JR', 21),  
-> (108, 'Bob', 'English', 'SR', 22),  
-> (109, 'Andy', 'ECE', 'JR', 21),  
-> (110, 'Charles', 'History', 'SR', 23);  
Query OK, 10 rows affected (0.02 sec)  
Records: 10  Duplicates: 0  Warnings: 0
```

```
mysql> insert into class  
-> values  
-> ('CSC342', 'Morning', 'R128', 201),  
-> ('CSC343', 'Noon', 'R128', 203),  
-> ('CSC345', 'Night', 'R154', 204),  
-> ('ECE300', 'Morning', 'R111', 202),
```

```

-> ('ECE301', 'Noon', 'R111', 203),
-> ('ENG366', 'Morning', 'R154', 203),
-> ('ENG367', 'Evening', 'R111', 205),
-> ('HIS320', 'Evening', 'R128', 205);
Query OK, 8 rows affected (0.01 sec)
Records: 8 Duplicates: 0 Warnings: 0

```

```

mysql> insert into Enrolled
-> values
-> (101, 'CSC342'),
-> (101, 'CSC343'),
-> (101, 'CSC345'),
-> (101, 'ECE300'),
-> (101, 'ENG366'),
-> (102, 'CSC343'),
-> (102, 'CSC345'),
-> (102, 'ECE301'),
-> (103, 'ECE300'),
-> (103, 'ECE301'),
-> (104, 'CSC342'),
-> (104, 'ECE301'),
-> (105, 'CSC345'),
-> (106, 'ECE300'),
-> (106, 'HIS320'),
-> (107, 'CSC366'),
-> (107, 'ENG366'),
-> (108, 'ENG367'),
-> (108, 'HIS320'),
-> (109, 'ECE300'),
-> (109, 'ECE301'),
-> (110, 'ENG366'),
-> (110, 'HIS320');
Query OK, 23 rows affected (0.01 sec)
Records: 23 Duplicates: 0 Warnings: 0

```

```

mysql> insert into Faculty
-> values
-> (201, 'S. Jackson', 301),
-> (202, 'M. Shanks', 302),
-> (203, 'I. Teach', 302),
-> (204, 'A. Zobrah', 303),
-> (205, 'M. Jensen', 303);
Query OK, 5 rows affected (0.01 sec)
Records: 5 Duplicates: 0 Warnings: 0

```

```

mysql> select * from student;
+-----+-----+-----+-----+-----+
| snum | sname  | major | level | age |
+-----+-----+-----+-----+-----+
| 101  | John   | CS    | SR    | 19  |
| 102  | Smith  | CS    | JR    | 20  |

```

103	Jacob	ECE	SR	20
104	Tom	CS	JR	20
105	Sid	CS	JR	20
106	Harry	History	SR	21
107	Hellen	CS	JR	21
108	Bob	English	SR	22
109	Andy	ECE	JR	21
110	Charles	History	SR	23

+-----+-----+-----+-----+

10 rows in set (0.01 sec)

mysql> select * from class;

cname	meets_at	room	fid
CSC342	Morning	R128	201
CSC343	Noon	R128	203
CSC345	Night	R154	204
ECE300	Morning	R111	202
ECE301	Noon	R111	203
ENG366	Morning	R154	203
ENG367	Evening	R111	205
HIS320	Evening	R128	205

+-----+-----+-----+-----+

8 rows in set (0.01 sec)

mysql> select * from Enrolled;

snum	cname
101	CSC342
101	CSC343
101	CSC345
101	ECE300
101	ENG366
102	CSC343
102	CSC345
102	ECE301
103	ECE300
103	ECE301
104	CSC342
104	ECE301
105	CSC345
106	ECE300
106	HIS320
107	CSC366
107	ENG366
108	ENG367
108	HIS320
109	ECE300
109	ECE301

```
| 110 | ENG366 |
| 110 | HIS320 |
+-----+
23 rows in set (0.01 sec)
```

```
mysql> select * from Faculty;
+-----+-----+-----+
| fid   | fname      | deptid |
+-----+-----+-----+
| 201   | S. Jackson | 301    |
| 202   | M. Shanks  | 302    |
| 203   | I. Teach   | 302    |
| 204   | A. Zobrah  | 303    |
| 205   | M. Jensen  | 303    |
+-----+-----+-----+
5 rows in set (0.00 sec)
```

Queries :-

```
mysql> select distinct a.sname from Student a natural join Class b natural join
Enrolled c natural join Faculty d where a.level = 'JR' and d.fname = 'I. Teach';
+-----+
| sname |
+-----+
| Smith |
| Tom   |
| Hellen|
| Andy  |
+-----+
4 rows in set (0.06 sec)
```

```
mysql> select a.sname, a.age from Student a natural join Class b natural join
Enrolled c natural join Faculty d where d.fname = 'I. Teach' and a.major =
'History' and a.age = (select max(age) from Student a natural join Class b
natural join Enrolled c natural join Faculty d where d.fname = 'I. Teach' and
a.major = 'History');
+-----+-----+
| sname | age |
+-----+-----+
| Charles | 23 |
+-----+-----+
1 row in set (0.01 sec)
```

```
mysql> select b.cname, count(*) from Student a natural join Class b natural join
Enrolled c natural join Faculty d where b.room = 'R128' or b.cname in (select
cname from Enrolled group by cname having count(*)>= 5) group by b.cname;
+-----+-----+
| cname | count(*) |
+-----+-----+
| CSC343 | 2 |
| CSC342 | 2 |
+-----+-----+
```

```
| HIS320 |          3 |
+-----+-----+
3 rows in set (0.00 sec)
```

```
mysql> select a.sname from Student a natural join Class b natural join Enrolled c
group by a.sname, b.meets_at having count(*) >= 2;
```

```
+-----+
| sname |
+-----+
| John  |
| Smith |
| Bob   |
+-----+
3 rows in set (0.01 sec)
```

```
mysql> select * from Faculty where fid in (select fid from Class group by fid
having count(*) = (select count(distinct room) from Class));
```

```
+-----+-----+-----+
| fid | fname   | deptid |
+-----+-----+-----+
| 203 | I. Teach | 302    |
+-----+-----+-----+
1 row in set (0.01 sec)
```

```
mysql> select * from Faculty where fid in (select fid from Class where cname in
(select cname from Enrolled group by cname having count(*)<5));
```

```
+-----+-----+-----+
| fid | fname       | deptid |
+-----+-----+-----+
| 201 | S. Jackson  | 301    |
| 202 | M. Shanks   | 302    |
| 203 | I. Teach    | 302    |
| 204 | A. Zobrah   | 303    |
| 205 | M. Jensen   | 303    |
+-----+-----+-----+
5 rows in set (0.00 sec)
```

```
mysql> select level,avg(age) from Student group by level;
```

```
+-----+-----+
| level | avg(age) |
+-----+-----+
| SR    | 21.0000  |
| JR    | 20.4000  |
+-----+-----+
2 rows in set (0.00 sec)
```

```
mysql> select level,avg(age) from Student where level != 'JR' group by level;
```

```
+-----+-----+
| level | avg(age) |
+-----+-----+
| SR    | 21.0000  |
+-----+-----+
```

```
+-----+-----+
1 row in set (0.00 sec)
```

```
mysql> select f.fname,count(*) from Faculty f natural join Class c natural join
Enrolled e where c.room = 'R128' group by fname;
```

```
+-----+-----+
| fname      | count(*) |
+-----+-----+
| S. Jackson |         2 |
| I. Teach   |         2 |
| M. Jensen  |         3 |
+-----+-----+
3 rows in set (0.00 sec)
```

```
mysql> select * from Enrolled e natural join Student s group by e.snum order by
count(*) desc limit 1;
```

```
+-----+-----+-----+-----+-----+-----+
| snum | cname  | sname | major | level | age  |
+-----+-----+-----+-----+-----+-----+
| 101  | CSC342 | John  | CS    | SR    | 19   |
+-----+-----+-----+-----+-----+-----+
1 row in set (0.01 sec)
```