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Queries:

The number of students who have gone to professor for advising.

select stu_num as student

 from student

 where prof_num is not null;

Display the professor's number with each class.

 select class_code as class, prof_num as professor

 from class

 group by class_code;

Produce a report that shows the number of enrollments in each class.

 select class_code as class , count(class_code) as students

 from enroll

 group by class_code;

Display how many professors are in each department and show how many specialties are then in each department.

select department.dept_code as department,count(department.prof_num) as professors, count(professor.prof_specialty) as specialities

 from department, professor

 where professor.prof_num=department.prof_num

 group by dept_code;

Display the number of classes offer in each semester.

 select semester_code as semester, count(class_code) as classes

 from class

group by semester_code;

Count the number of classes that are going to teach by a specific professor

select prof_num as professor, class_code as class

from class

group by class_code;

Establish what departments are in the school.

select school_code as school , dept_name as department

from department

group by dept_name;

Limit the number of classes that an enrolled student may take.

select stu_num as students, count(class_code) as classes

from enroll

group by stu_num;

Limit the number of classes offered in a semester.

select semester_code as semester, count(class_code)*4 as credits

from class

group by semester_code;

Enrollment will be available in a set time window.

select enroll.stu_num as student, class.class_code as class, semester.semester_code as semester
from enroll, class, semester

where enroll.class_code=class.class_code

and class.semester_code=semester.semester_code;

Count the number of credits earned by each student

select stu_num as student, count(class_code)*4 as credits

from enroll

group by stu_num;

Keep a class record for each student.

select stu_num as student, class_code as class

from enroll;

*Display a student information whose stu_num =10010 from any department and show that what classes he/she takes in fall 2016.

select distinct student.stu_num, stu_lname, stu_fname, department.dept_code, class.semester_code, enroll.class_code

from department, student, class, enroll, semester

where student.stu_num=10010 and semester.semester_code = 'fall_16'

and class.class_code=enroll.class_code

and class.semester_code= semester.semester_code

and student.stu_num= enroll.stu_num

and student.dept_code=department.dept_code

order by student.stu_num, class.semester_code;

Appendix

In this appendix are shown all the results obtained from the queries once applied on Mysql.

1

```
MariaDB [gtj]>
MariaDB [gtj]> SELECT      stu_num AS student FROM      student WHERE      prof_num IS NOT NULL;
+---------+
| student |
+---------+
|   10011 |
|   10044 |
|   10014 |
|   10024 |
|   10037 |
|   10017 |
|   10027 |
|   10021 |
|   10031 |
|   10034 |
|   10041 |
|   10012 |
|   10032 |
|   10035 |
|   10015 |
|   10025 |
|   10038 |
|   10018 |
|   10028 |
|   10045 |
|   10022 |
|   10042 |
|   10010 |
```

2

```
MariaDB [gtj]> SELECT    class_code AS class, prof_num AS professor FROM    class GROUP BY class_code;
+------------+-----------+
| class      | professor |
+------------+-----------+
| AC-101     |      3001 |
| AC-201     |      3001 |
| AC-301     |      3001 |
| AC-401     |      3001 |
| ALGEBRA-10 |      1002 |
| ALGEBRA-20 |      1002 |
| ALGEBRA-30 |      1002 |
| ALGEBRA-40 |      1002 |
| BA-101     |      3003 |
| BA-201     |      3003 |
| BA-301     |      3003 |
| BA-401     |      3003 |
| CALC-101   |      1001 |
| CALC-201   |      1001 |
| CALC-301   |      1001 |
| CALC-401   |      1001 |
| CS-101     |      2001 |
| CS-201     |      2001 |
| CS-301     |      2001 |
| CS-401     |      2001 |
| DFQ-101    |      1004 |
| DFQ-201    |      1004 |
| DFQ-301    |      1004 |
| DFQ-401    |      1004 |
| EC-101     |      3002 |
| EC-201     |      3002 |
| EC-301     |      3002 |
| EC-401     |      3002 |
| IB-101     |      3004 |
| IB-201     |      3004 |
| IB-301     |      3004 |
| IB-401     |      3004 |
| IS-101     |      2002 |
| IS-201     |      2002 |
| IS-301     |      2002 |
| IS-401     |      2002 |
| STAT-101   |      1003 |
| STAT-201   |      1003 |
| STAT-301   |      1003 |
| STAT-401   |      1003 |
+------------+-----------+
40 rows in set (0.00 sec)
```

3

```
MariaDB [gtj]>
MariaDB [gtj]> SELECT    class_code AS class, COUNT(class_code) AS students FROM    enroll GROUP BY class_code;
+------------+----------+
| class      | students |
+------------+----------+
| AC-101     |        9 |
| AC-201     |        3 |
| AC-301     |        3 |
| AC-401     |        3 |
| ALGEBRA-10 |        7 |
| ALGEBRA-20 |        3 |
| ALGEBRA-30 |        3 |
| ALGEBRA-40 |        3 |
| BA-101     |        3 |
| BA-201     |        3 |
| BA-301     |        3 |
| BA-401     |        3 |
| CALC-101   |        9 |
| CALC-201   |        3 |
| CALC-301   |        3 |
| CALC-401   |        2 |
| CS-101     |       10 |
| CS-201     |        4 |
| CS-301     |        3 |
| CS-401     |        2 |
| DFQ-101    |        8 |
| DFQ-201    |        2 |
| DFQ-301    |        2 |
| DFQ-401    |        2 |
| EC-101     |        4 |
| EC-201     |        3 |
| EC-301     |        2 |
| EC-401     |        3 |
| IB-101     |        3 |
| IB-201     |        3 |
| IB-301     |        1 |
| IB-401     |        1 |
| IS-101     |        5 |
| IS-201     |        3 |
| IS-301     |        3 |
| IS-401     |        2 |
| STAT-101   |       10 |
| STAT-201   |        2 |
| STAT-301   |        2 |
| STAT-401   |        1 |
+------------+----------+
40 rows in set (0.00 sec)
```

4

```
MariaDB [gtj]> SELECT    department.dept_code AS department,    COUNT(department.prof_num) AS professors,    COUNT(professor.prof_specialty) AS specialities FROM    department,    professor WHERE    professor.prof_num =
department.prof_num GROUP BY dept_code;
+------------+------------+--------------+
| department | professors | specialities |
+------------+------------+--------------+
| BA         |          4 |            4 |
| MA         |          4 |            4 |
| SC         |          4 |            4 |
+------------+------------+--------------+
3 rows in set (0.00 sec)
```

5

```
MariaDB [gtj]> SELECT    semester_code AS semester, COUNT(class_code) AS classes FROM    class GROUP BY semester_code;
+-----------+---------+
| semester  | classes |
+-----------+---------+
| fall_14   |      40 |
| fall_15   |      40 |
| fall_16   |      40 |
| spring_15 |      38 |
| spring_16 |      40 |
| spring_17 |      40 |
+-----------+---------+
```

6

```
MariaDB [gtj]>
MariaDB [gtj]> SELECT    prof_num AS professor, class_code AS class FROM    class GROUP BY class_code;
+-----------+------------+
| professor | class      |
+-----------+------------+
|      3001 | AC-101     |
|      3001 | AC-201     |
|      3001 | AC-301     |
|      3001 | AC-401     |
|      1002 | ALGEBRA-10 |
|      1002 | ALGEBRA-20 |
|      1002 | ALGEBRA-30 |
|      1002 | ALGEBRA-40 |
|      3003 | BA-101     |
|      3003 | BA-201     |
|      3003 | BA-301     |
|      3003 | BA-401     |
|      1001 | CALC-101   |
|      1001 | CALC-201   |
|      1001 | CALC-301   |
|      1001 | CALC-401   |
|      2001 | CS-101     |
|      2001 | CS-201     |
|      2001 | CS-301     |
|      2001 | CS-401     |
|      1004 | DFQ-101    |
|      1004 | DFQ-201    |
|      1004 | DFQ-301    |
|      1004 | DFQ-401    |
|      3002 | EC-101     |
|      3002 | EC-201     |
|      3002 | EC-301     |
|      3002 | EC-401     |
|      3004 | IB-101     |
|      3004 | IB-201     |
|      3004 | IB-301     |
|      3004 | IB-401     |
|      2002 | IS-101     |
|      2002 | IS-201     |
|      2002 | IS-301     |
|      2002 | IS-401     |
|      1003 | STAT-101   |
|      1003 | STAT-201   |
|      1003 | STAT-301   |
|      1003 | STAT-401   |
+-----------+------------+
40 rows in set (0.00 sec)
```

7

```
MariaDB [gtj]>
MariaDB [gtj]> SELECT     school_code AS school, dept_name AS department FROM     department GROUP BY dept_name;
+--------+-------------+
| school | department  |
+--------+-------------+
| S-BA   | Business    |
| N-MS   | Mathematics |
| N-MS   | Sciences    |
+--------+-------------+
3 rows in set (0.00 sec)
```

8

```
MariaDB [gtj]>
MariaDB [gtj]> SELECT     stu_num AS students, COUNT(class_code) AS classes FROM     enroll GROUP BY stu_num;
+----------+---------+
| students | classes |
+----------+---------+
|    10010 |       4 |
|    10011 |       4 |
|    10012 |       4 |
|    10013 |       4 |
|    10014 |       4 |
|    10015 |       4 |
|    10016 |       4 |
|    10017 |       4 |
|    10018 |       4 |
|    10019 |       4 |
|    10020 |       4 |
|    10021 |       4 |
|    10022 |       4 |
|    10023 |       4 |
|    10024 |       4 |
|    10025 |       4 |
|    10026 |       4 |
|    10027 |       4 |
|    10028 |       4 |
|    10029 |       4 |
|    10030 |       4 |
|    10031 |       4 |
|    10032 |       4 |
|    10033 |       4 |
|    10034 |       4 |
|    10035 |       4 |
|    10036 |       4 |
|    10037 |       4 |
|    10038 |       4 |
|    10039 |       4 |
|    10040 |       4 |
|    10041 |       4 |
|    10042 |       4 |
|    10043 |       4 |
|    10044 |       4 |
|    10045 |       4 |
+----------+---------+
36 rows in set (0.00 sec)
```

9

```
MariaDB [gtj]> SELECT     semester_code AS semester, COUNT(class_code) * 4 AS credits FROM     class GROUP BY semester_code;
+-----------+---------+
| semester  | credits |
+-----------+---------+
| fall_14   |     160 |
| fall_15   |     160 |
| fall_16   |     160 |
| spring_15 |     152 |
| spring_16 |     160 |
| spring_17 |     160 |
+-----------+---------+
6 rows in set (0.00 sec)
```

```
|  10017 | DFQ-201   | spring_17 |
|  10031 | DFQ-201   | spring_17 |
|  10021 | DFQ-301   | spring_17 |
|  10037 | DFQ-301   | spring_17 |
|  10041 | DFQ-401   | spring_17 |
|  10044 | DFQ-401   | spring_17 |
|  10010 | EC-101    | spring_17 |
|  10026 | EC-101    | spring_17 |
|  10030 | EC-101    | spring_17 |
|  10045 | EC-101    | spring_17 |
|  10013 | EC-201    | spring_17 |
|  10014 | EC-201    | spring_17 |
|  10033 | EC-201    | spring_17 |
|  10019 | EC-301    | spring_17 |
|  10020 | EC-301    | spring_17 |
|  10036 | EC-401    | spring_17 |
|  10040 | EC-401    | spring_17 |
|  10043 | EC-401    | spring_17 |
|  10010 | IB-101    | spring_17 |
|  10030 | IB-101    | spring_17 |
|  10038 | IB-101    | spring_17 |
|  10013 | IB-201    | spring_17 |
|  10016 | IB-201    | spring_17 |
|  10023 | IB-201    | spring_17 |
|  10019 | IB-301    | spring_17 |
|  10036 | IB-401    | spring_17 |
|  10012 | IS-101    | spring_17 |
|  10025 | IS-101    | spring_17 |
|  10028 | IS-101    | spring_17 |
|  10031 | IS-101    | spring_17 |
|  10032 | IS-101    | spring_17 |
|  10015 | IS-201    | spring_17 |
|  10035 | IS-201    | spring_17 |
|  10038 | IS-201    | spring_17 |
|  10018 | IS-301    | spring_17 |
|  10022 | IS-301    | spring_17 |
|  10039 | IS-301    | spring_17 |
|  10042 | IS-401    | spring_17 |
|  10045 | IS-401    | spring_17 |
|  10011 | STAT-101  | spring_17 |
|  10012 | STAT-101  | spring_17 |
|  10020 | STAT-101  | spring_17 |
|  10023 | STAT-101  | spring_17 |
|  10024 | STAT-101  | spring_17 |
|  10026 | STAT-101  | spring_17 |
|  10027 | STAT-101  | spring_17 |
|  10029 | STAT-101  | spring_17 |
|  10035 | STAT-101  | spring_17 |
|  10039 | STAT-101  | spring_17 |
|  10014 | STAT-201  | spring_17 |
|  10017 | STAT-201  | spring_17 |
|  10034 | STAT-301  | spring_17 |
|  10037 | STAT-301  | spring_17 |
|  10044 | STAT-401  | spring_17 |
+--------+-----------+-----------+
349 rows in set (0.00 sec)
```

```
MariaDB [gtj]>
MariaDB [gtj]> SELECT      stu_num AS student, COUNT(class_code) * 4 AS credits FROM     enroll GROUP BY stu_num;
+---------+---------+
| student | credits |
+---------+---------+
|   10010 |      16 |
|   10011 |      16 |
|   10012 |      16 |
|   10013 |      16 |
|   10014 |      16 |
|   10015 |      16 |
|   10016 |      16 |
|   10017 |      16 |
|   10018 |      16 |
|   10019 |      16 |
|   10020 |      16 |
|   10021 |      16 |
|   10022 |      16 |
|   10023 |      16 |
|   10024 |      16 |
|   10025 |      16 |
|   10026 |      16 |
|   10027 |      16 |
|   10028 |      16 |
|   10029 |      16 |
|   10030 |      16 |
|   10031 |      16 |
|   10032 |      16 |
|   10033 |      16 |
|   10034 |      16 |
|   10035 |      16 |
|   10036 |      16 |
|   10037 |      16 |
|   10038 |      16 |
|   10039 |      16 |
|   10040 |      16 |
|   10041 |      16 |
|   10042 |      16 |
|   10043 |      16 |
|   10044 |      16 |
|   10045 |      16 |
+---------+---------+
36 rows in set (0.00 sec)
```

```
MariaDB [gtj]>
MariaDB [gtj]> SELECT     stu_num AS student, class_code AS class FROM    enroll;
+---------+------------+
| student | class      |
+---------+------------+
|   10010 | AC-101     |
|   10010 | BA-101     |
|   10010 | EC-101     |
|   10010 | IB-101     |
|   10011 | ALGEBRA-10 |
|   10011 | CALC-101   |
|   10011 | DFQ-101    |
|   10011 | STAT-101   |
|   10012 | CS-101     |
|   10012 | DFQ-101    |
|   10012 | IS-101     |
|   10012 | STAT-101   |
|   10013 | AC-201     |
|   10013 | BA-201     |
|   10013 | EC-201     |
|   10013 | IB-201     |
|   10014 | ALGEBRA-20 |
|   10014 | CALC-201   |
|   10014 | EC-201     |
|   10014 | STAT-201   |
|   10015 | AC-101     |
|   10015 | CALC-101   |
|   10015 | CS-201     |
|   10015 | IS-201     |
|   10016 | AC-201     |
|   10016 | ALGEBRA-10 |
|   10016 | BA-201     |
|   10016 | IB-201     |
|   10017 | ALGEBRA-20 |
|   10017 | CALC-101   |
|   10017 | DFQ-201    |
|   10017 | STAT-201   |
|   10018 | AC-101     |
|   10018 | CS-301     |
|   10018 | DFQ-101    |
|   10018 | IS-301     |
|   10019 | AC-301     |
|   10019 | BA-301     |
|   10019 | EC-301     |
|   10019 | IB-301     |
|   10020 | AC-301     |
|   10020 | BA-301     |
|   10020 | EC-301     |
|   10020 | STAT-101   |
|   10021 | ALGEBRA-30 |
|   10021 | CALC-301   |
|   10021 | CS-201     |
|   10021 | DFQ-301    |
```