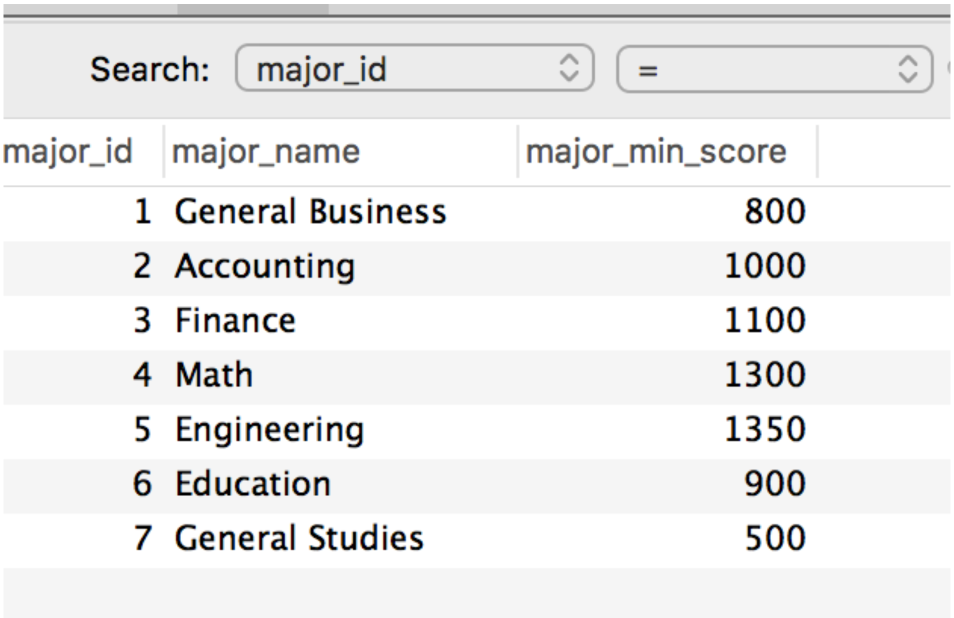
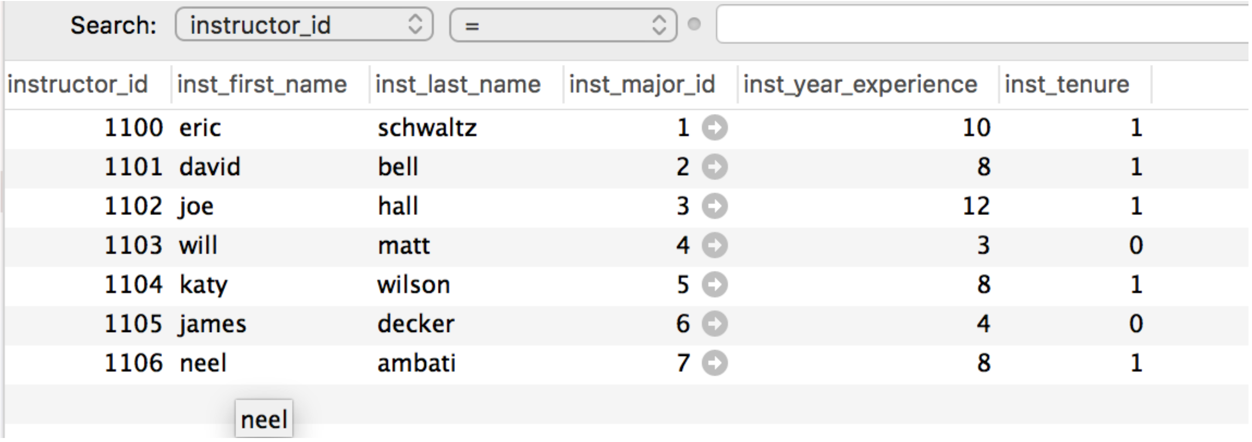
1. Create the new 'major' table



Search: major_id =

major_id	major_name	major_min_score
1	General Business	800
2	Accounting	1000
3	Finance	1100
4	Math	1300
5	Engineering	1350
6	Education	900
7	General Studies	500

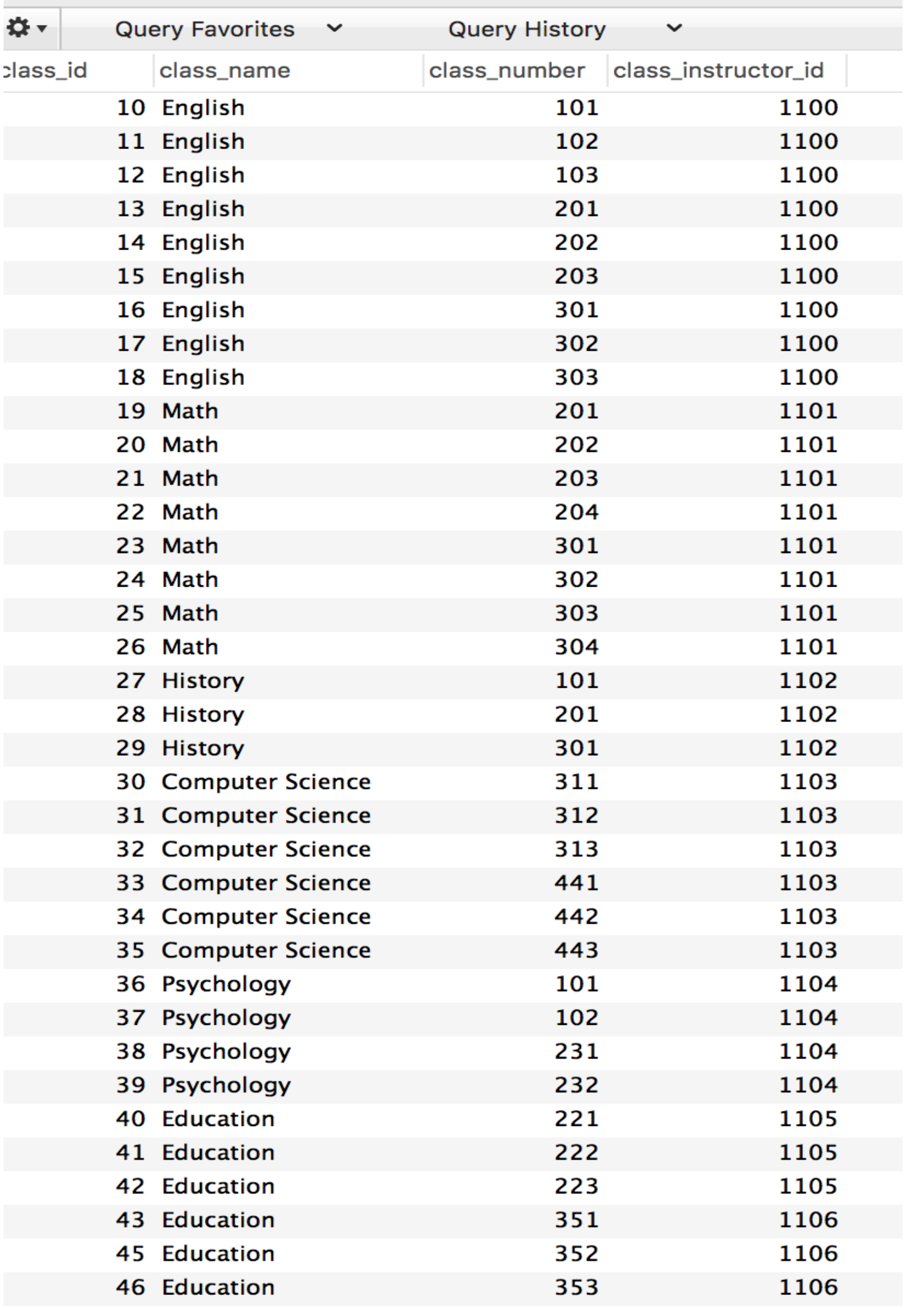
2.Create the new 'instructor' table



Search: instructor_id =

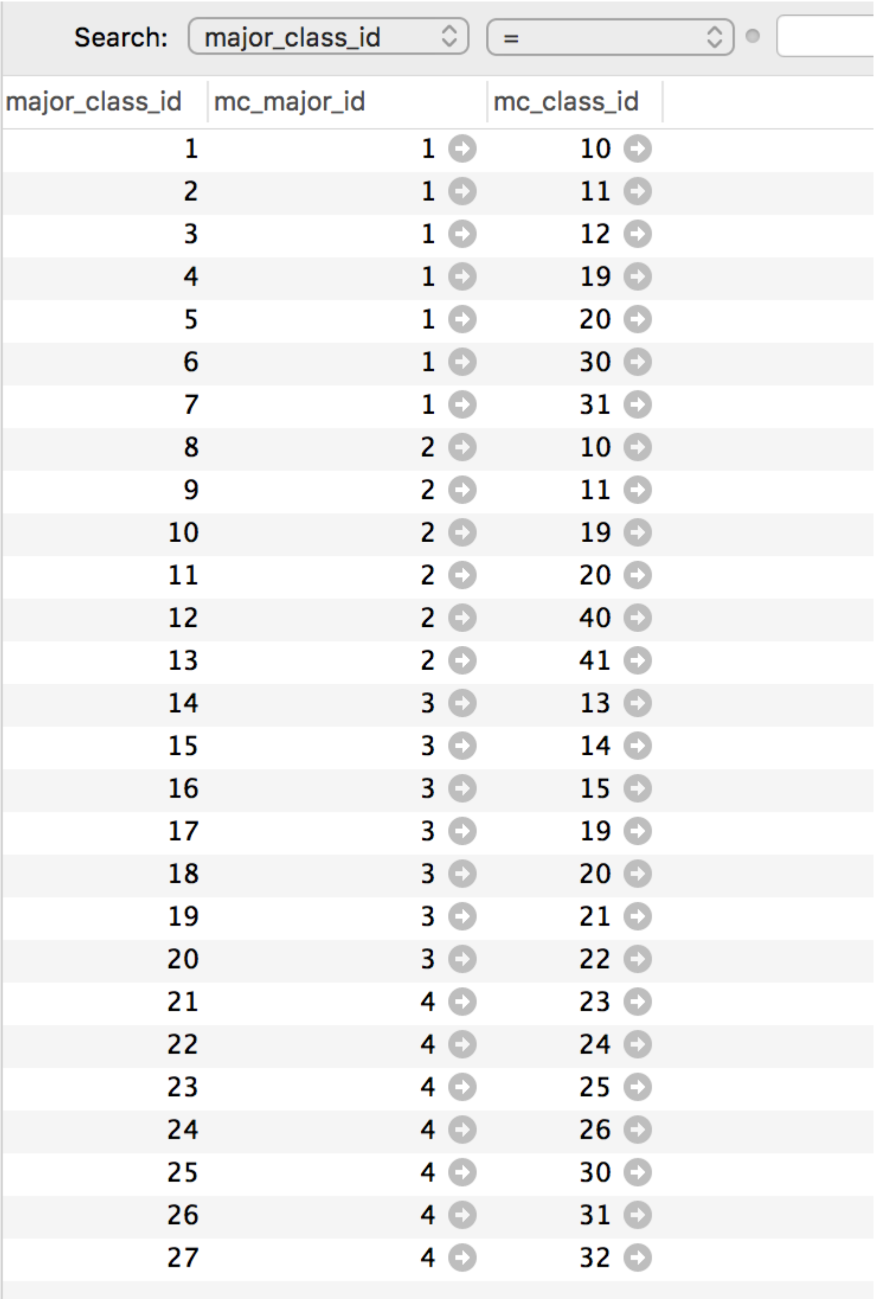
instructor_id	inst_first_name	inst_last_name	inst_major_id	inst_year_experience	inst_tenure
1100	eric	schwaltz	1	10	1
1101	david	bell	2	8	1
1102	joe	hall	3	12	1
1103	will	matt	4	3	0
1104	katy	wilson	5	8	1
1105	james	decker	6	4	0
1106	neel	ambati	7	8	1

3.Create the new 'class' table



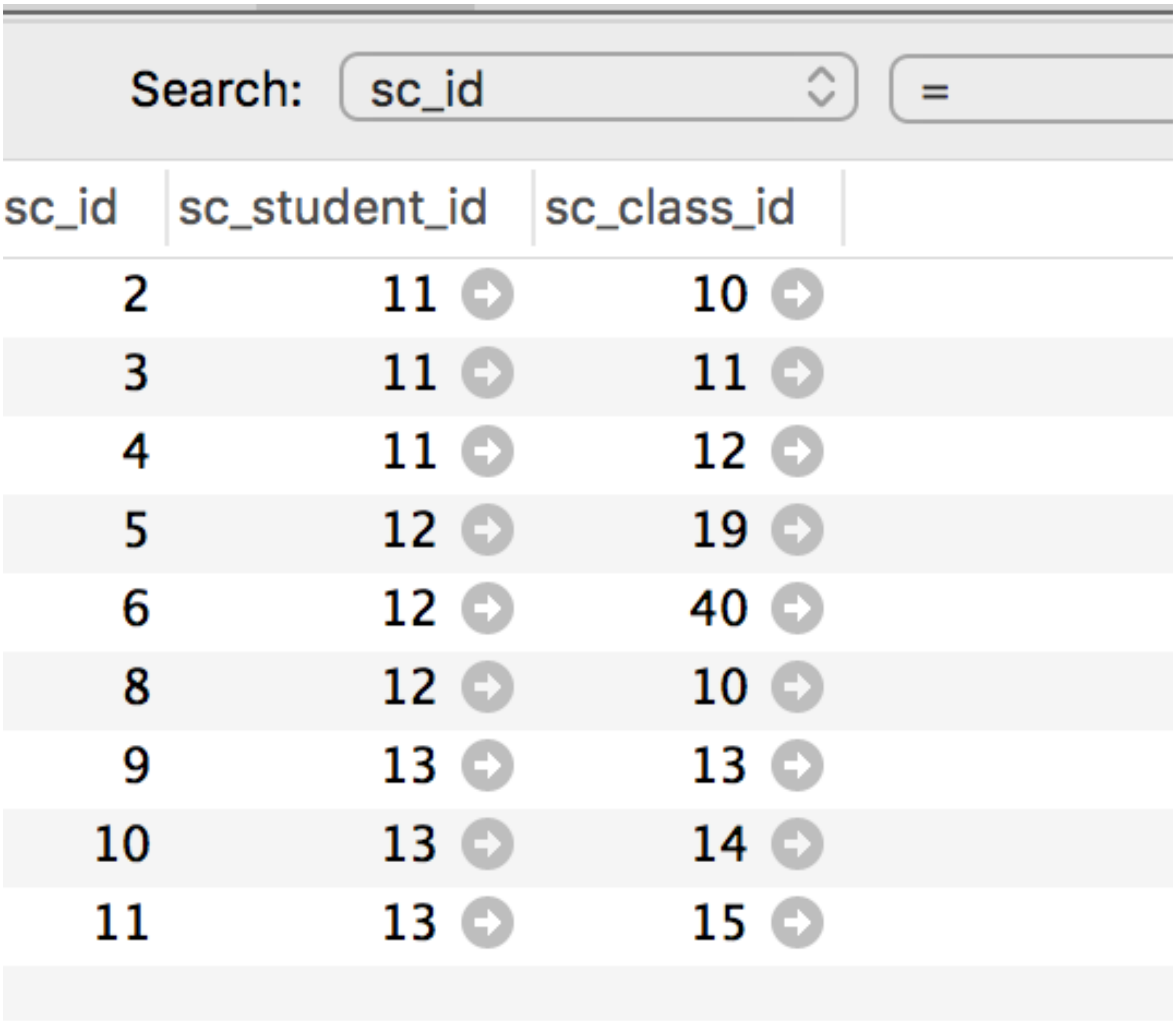
class_id	class_name	class_number	class_instructor_id
10	English	101	1100
11	English	102	1100
12	English	103	1100
13	English	201	1100
14	English	202	1100
15	English	203	1100
16	English	301	1100
17	English	302	1100
18	English	303	1100
19	Math	201	1101
20	Math	202	1101
21	Math	203	1101
22	Math	204	1101
23	Math	301	1101
24	Math	302	1101
25	Math	303	1101
26	Math	304	1101
27	History	101	1102
28	History	201	1102
29	History	301	1102
30	Computer Science	311	1103
31	Computer Science	312	1103
32	Computer Science	313	1103
33	Computer Science	441	1103
34	Computer Science	442	1103
35	Computer Science	443	1103
36	Psychology	101	1104
37	Psychology	102	1104
38	Psychology	231	1104
39	Psychology	232	1104
40	Education	221	1105
41	Education	222	1105
42	Education	223	1105
43	Education	351	1106
45	Education	352	1106
46	Education	353	1106

4. Create the new major_class table



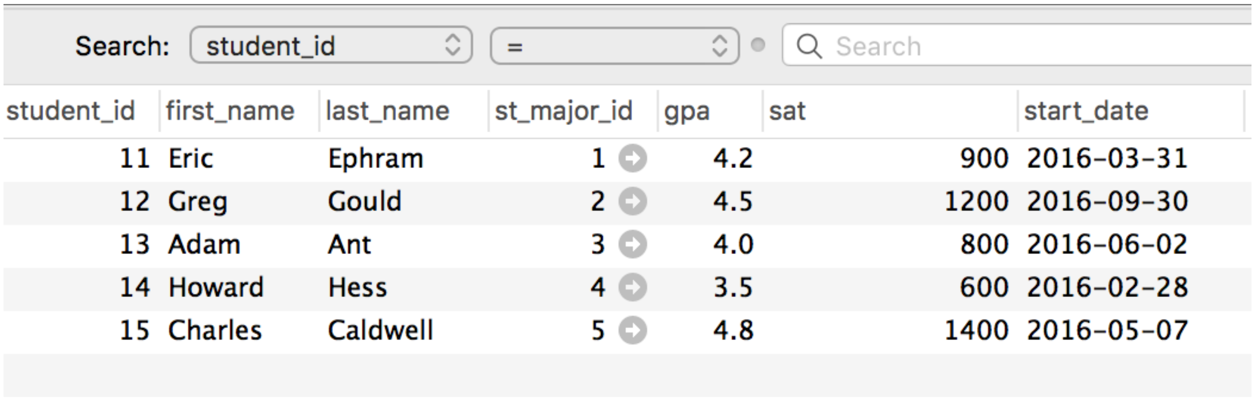
major_class_id	mc_major_id	mc_class_id
1	1	10
2	1	11
3	1	12
4	1	19
5	1	20
6	1	30
7	1	31
8	2	10
9	2	11
10	2	19
11	2	20
12	2	40
13	2	41
14	3	13
15	3	14
16	3	15
17	3	19
18	3	20
19	3	21
20	3	22
21	4	23
22	4	24
23	4	25
24	4	26
25	4	30
26	4	31
27	4	32

5. Create the new student_class table



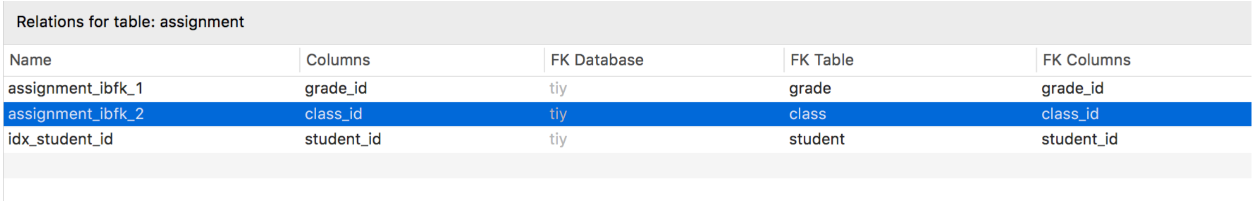
sc_id	sc_student_id	sc_class_id
2	11	10
3	11	11
4	11	12
5	12	19
6	12	40
8	12	10
9	13	13
10	13	14
11	13	15

6. Changes to the 'student' table



student_id	first_name	last_name	st_major_id	gpa	sat	start_date
11	Eric	Ephram	1	4.2	900	2016-03-31
12	Greg	Gould	2	4.5	1200	2016-09-30
13	Adam	Ant	3	4.0	800	2016-06-02
14	Howard	Hess	4	3.5	600	2016-02-28
15	Charles	Caldwell	5	4.8	1400	2016-05-07

7. Changes to the 'assignment' table



Relations for table: assignment

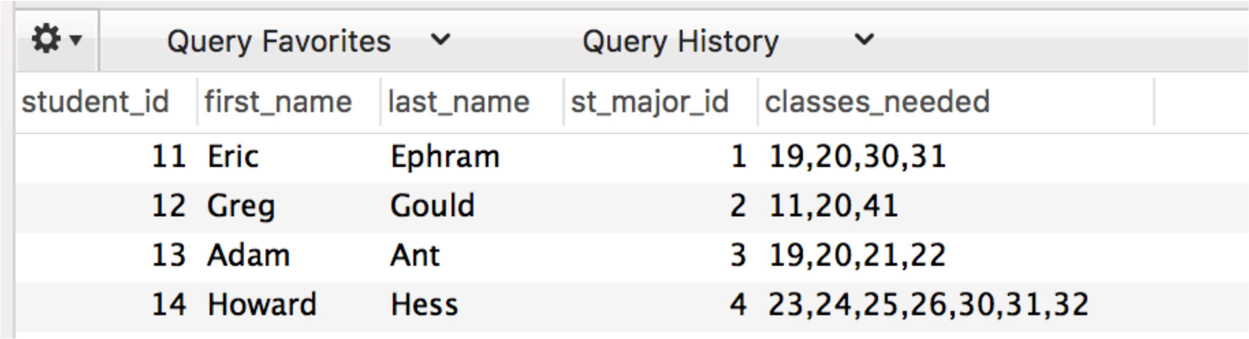
Name	Columns	FK Database	FK Table	FK Columns
assignment_ibfk_1	grade_id	tiy	grade	grade_id
assignment_ibfk_2	class_id	tiy	class	class_id
idx_student_id	student_id	tiy	student	student_id

Hard Challenge

Create a report for a student that shows what classes (s)he has left to take based on the major enrolled. So for example, if the major requires classes U, V, W, X, Y, and Z, and the student has enrolled in U, X, and Y, the remaining classes to be taken are V, W, and Z. You can assume if a student enrolled in a class that they student completed the class with a passing grade.

SQL Query :

```
select s.`student_id`, s.`first_name`, s.`last_name`, s.`st_major_id`,
group_concat(mc.`mc_class_id`) as classes_needed
from major_class mc, student s where
s.`st_major_id` = mc.`mc_major_id` and
not exists
(select * from student_class sc where
sc.`sc_student_id` = s.`student_id` and
sc.`sc_class_id` = mc.`mc_class_id`)
group by s.student_id
```

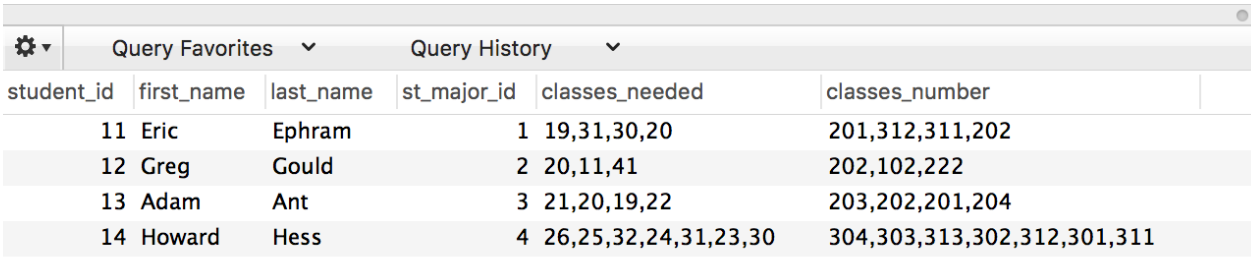


student_id	first_name	last_name	st_major_id	classes_needed
11	Eric	Ephram	1	19,20,30,31
12	Greg	Gould	2	11,20,41
13	Adam	Ant	3	19,20,21,22
14	Howard	Hess	4	23,24,25,26,30,31,32

displaying class numbers as well corresponding to class id’s

SQL Query:

```
select s.`student_id`, s.`first_name`, s.`last_name`, s.`st_major_id`,
group_concat(mc.`mc_class_id`) as classes_needed,
group_concat(c.`class_number`) as classes_number
from major_class mc, student s, class c where
s.`st_major_id` = mc.`mc_major_id` and
mc.`mc_class_id` = c.`class_id` and
not exists
(select * from student_class sc where
sc.`sc_student_id` = s.`student_id` and
sc.`sc_class_id` = mc.`mc_class_id`)
group by s.student_id
```



student_id	first_name	last_name	st_major_id	classes_needed	classes_number
11	Eric	Ephram	1	19,31,30,20	201,312,311,202
12	Greg	Gould	2	20,11,41	202,102,222
13	Adam	Ant	3	21,20,19,22	203,202,201,204
14	Howard	Hess	4	26,25,32,24,31,23,30	304,303,313,302,312,301,311