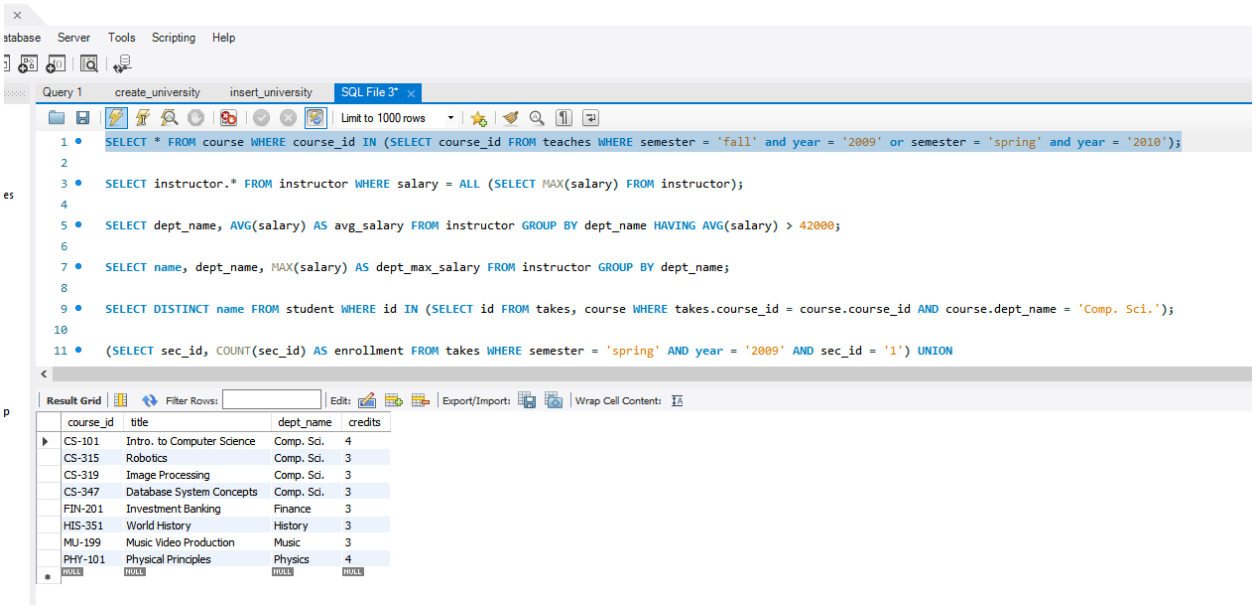
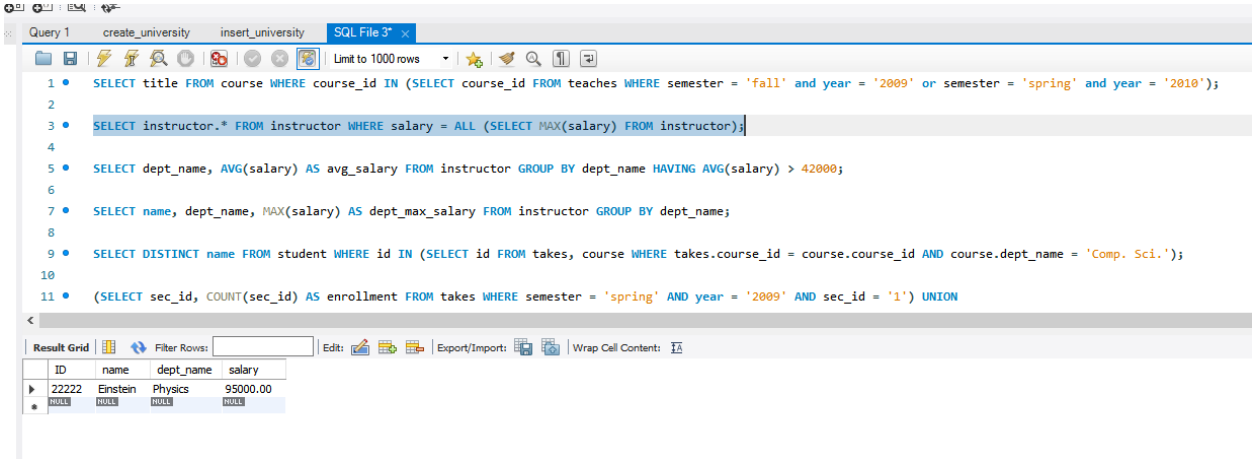
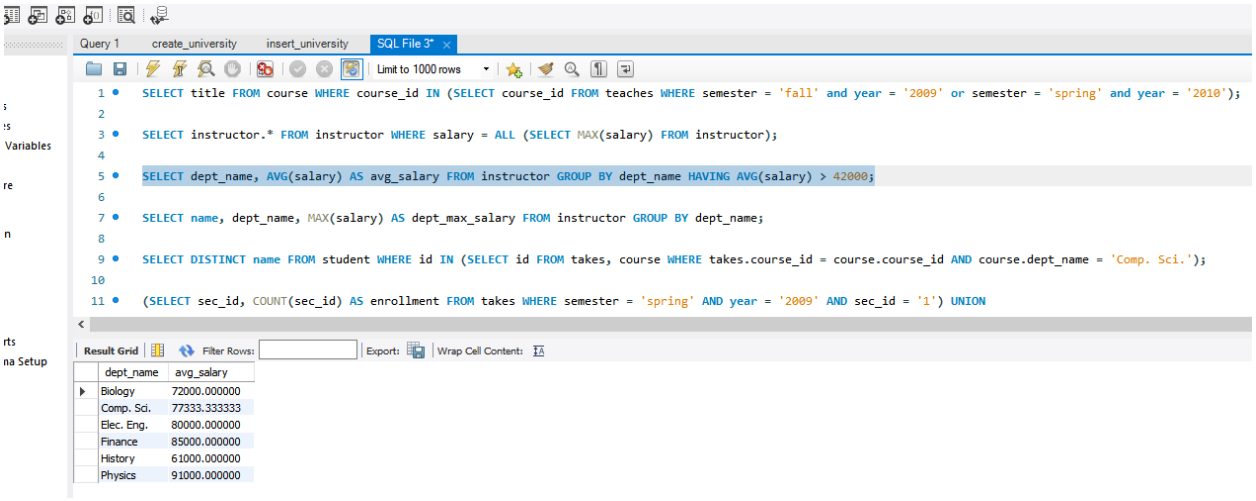
A) SELECT * FROM course WHERE course_id IN (SELECT course_id FROM teaches WHERE semester = 'fall' and year = '2009' or semester = 'spring' and year = '2010');



B) SELECT instructor.* FROM instructor WHERE salary = ALL (SELECT MAX(salary) FROM instructor);



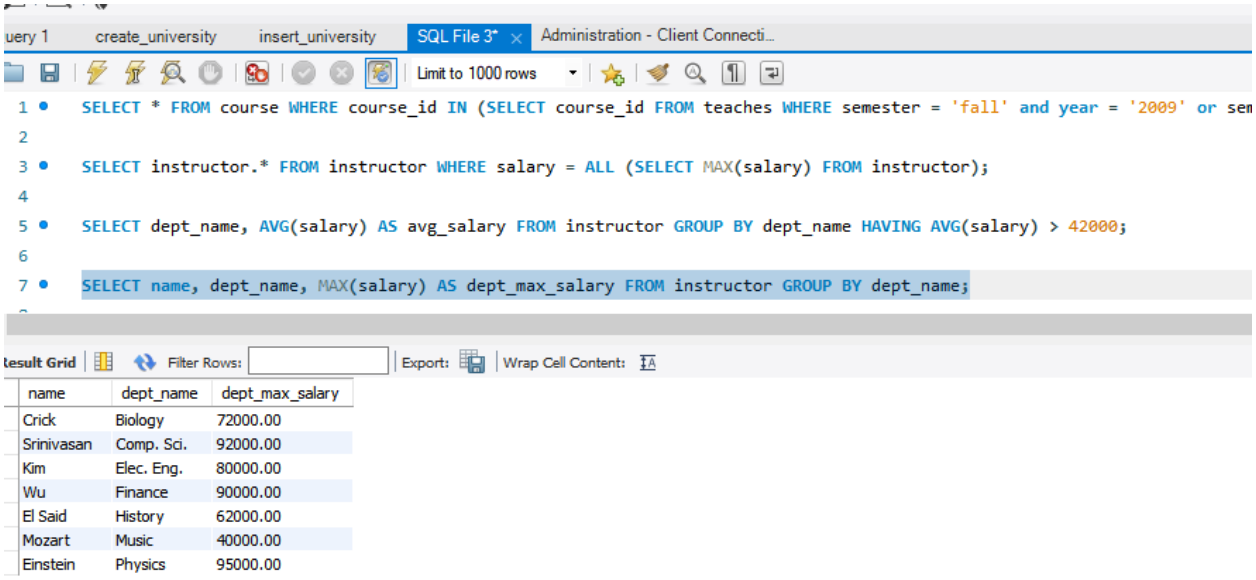
C) SELECT dept_name, AVG(salary) AS avg_salary FROM instructor GROUP BY dept_name HAVING AVG(salary) > 42000;



```
SELECT title FROM course WHERE course_id IN (SELECT course_id FROM teaches WHERE semester = 'fall' and year = '2009' or semester = 'spring' and year = '2010');

SELECT instructor.* FROM instructor WHERE salary = ALL (SELECT MAX(salary) FROM instructor);

SELECT dept_name, AVG(salary) AS avg_salary FROM instructor GROUP BY dept_name HAVING AVG(salary) > 42000;

SELECT name, dept_name, MAX(salary) AS dept_max_salary FROM instructor GROUP BY dept_name;

SELECT DISTINCT name FROM student WHERE id IN (SELECT id FROM takes, course WHERE takes.course_id = course.course_id AND course.dept_name = 'Comp. Sci.');

(SELECT sec_id, COUNT(sec_id) AS enrollment FROM takes WHERE semester = 'spring' AND year = '2009' AND sec_id = '1') UNION
```

dept_name	avg_salary
Biology	72000.000000
Comp. Sci.	77333.333333
Elec. Eng.	80000.000000
Finance	85000.000000
History	61000.000000
Physics	91000.000000

D) SELECT name, dept_name, MAX(salary) AS dept_max_salary FROM instructor GROUP BY dept_name;



```
SELECT * FROM course WHERE course_id IN (SELECT course_id FROM teaches WHERE semester = 'fall' and year = '2009' or sem

SELECT instructor.* FROM instructor WHERE salary = ALL (SELECT MAX(salary) FROM instructor);

SELECT dept_name, AVG(salary) AS avg_salary FROM instructor GROUP BY dept_name HAVING AVG(salary) > 42000;

SELECT name, dept_name, MAX(salary) AS dept_max_salary FROM instructor GROUP BY dept_name;
```

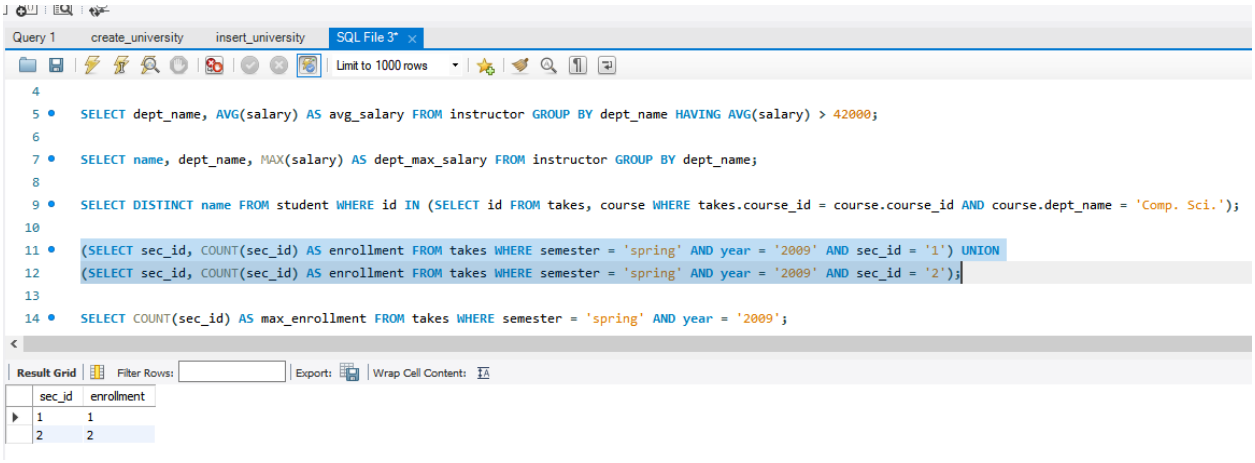
name	dept_name	dept_max_salary
Crick	Biology	72000.00
Srinivasan	Comp. Sci.	92000.00
Kim	Elec. Eng.	80000.00
Wu	Finance	90000.00
El Said	History	62000.00
Mozart	Music	40000.00
Einstein	Physics	95000.00

E) SELECT DISTINCT name FROM student WHERE id IN (SELECT id FROM takes, course WHERE takes.course_id = course.course_id AND course.dept_name = 'Comp. Sci.');

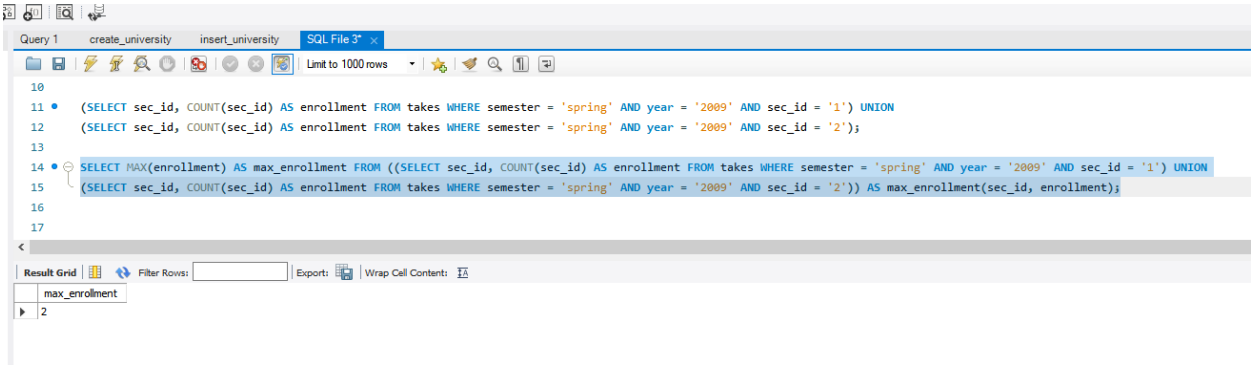
```
SELECT title FROM course WHERE course_id IN (SELECT course_id FROM teaches WHERE semester = 'fall' and year = '2009' or semester = 'spring' and year = '2010');

SELECT instructor.* FROM instructor WHERE salary = ALL (SELECT MAX(salary) FROM instructor);

SELECT dept_name, AVG(salary) AS avg_salary FROM instructor GROUP BY dept_name HAVING AVG(salary) > 42000;

SELECT name, dept_name, MAX(salary) AS dept_max_salary FROM instructor GROUP BY dept_name;

SELECT DISTINCT name FROM student WHERE id IN (SELECT id FROM takes, course WHERE takes.course_id = course.course_id AND course.dept_name = 'Comp. Sci.');

(SELECT sec_id, COUNT(sec_id) AS enrollment FROM takes WHERE semester = 'spring' AND year = '2009' AND sec_id = '1') UNION
```

name
Zhang
Shankar
Levy
Williams
Brown
Bourikas

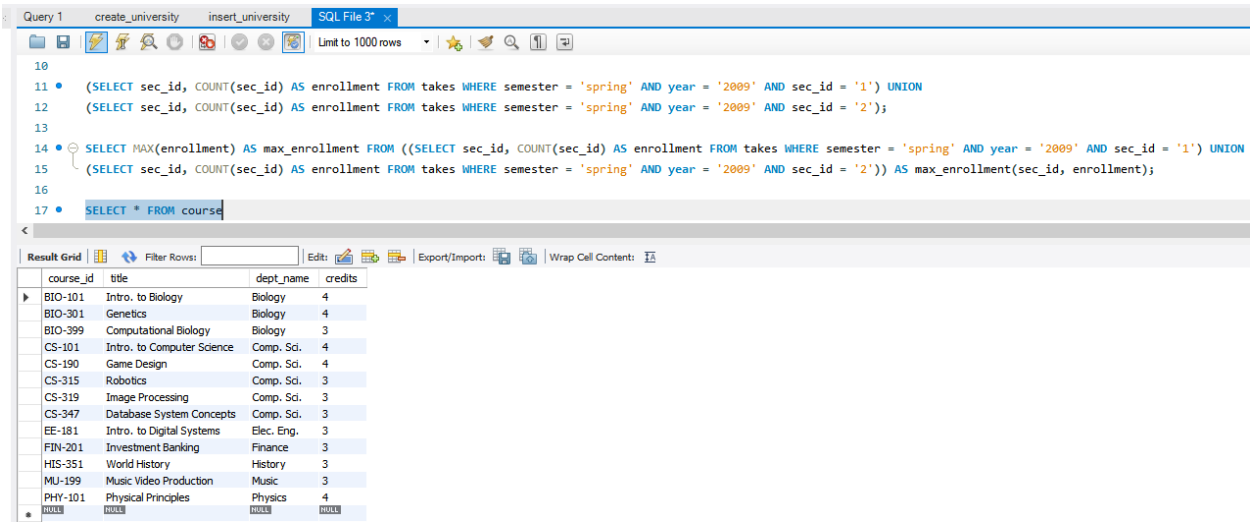
F) (SELECT sec_id, COUNT(sec_id) AS enrollment FROM takes WHERE semester = 'spring' AND year = '2009' AND sec_id = '1') UNION
(SELECT sec_id, COUNT(sec_id) AS enrollment FROM takes WHERE semester = 'spring' AND year = '2009' AND sec_id = '2');



G) SELECT MAX(enrollment) AS max_enrollment FROM ((SELECT sec_id, COUNT(sec_id) AS enrollment FROM takes WHERE semester = 'spring' AND year = '2009' AND sec_id = '1') UNION
(SELECT sec_id, COUNT(sec_id) AS enrollment FROM takes WHERE semester = 'spring' AND year = '2009' AND sec_id = '2')) AS max_enrollment(sec_id, enrollment);



H) Before



After

DELETE FROM course WHERE course_id NOT IN (SELECT section.course_id From section)