

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');`

The screenshot shows a SQL IDE with a query window and a results grid. The query is as follows:

```

1 • SELECT * FROM course WHERE course_id IN (SELECT course_id FROM teaches WHERE semester = 'fall' and year = '2009' or semester = 'spring' and year = '2010');
2
3 • SELECT instructor.* FROM instructor WHERE salary = ALL (SELECT MAX(salary) FROM instructor);
4
5 • SELECT dept_name, AVG(salary) AS avg_salary FROM instructor GROUP BY dept_name HAVING AVG(salary) > 42000;
6
7 • SELECT name, dept_name, MAX(salary) AS dept_max_salary FROM instructor GROUP BY dept_name;
8
9 • 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. ');
10
11 • (SELECT sec_id, COUNT(sec_id) AS enrollment FROM takes WHERE semester = 'spring' AND year = '2009' AND sec_id = '1') UNION

```

The results grid displays the following data:

course_id	title	dept_name	credits
CS-101	Intro. to Computer Science	Comp. Sci.	4
CS-315	Robotics	Comp. Sci.	3
CS-319	Image Processing	Comp. Sci.	3
CS-347	Database System Concepts	Comp. Sci.	3
FIN-201	Investment Banking	Finance	3
HIS-351	World History	History	3
MU-199	Music Video Production	Music	3
PHY-101	Physical Principles	Physics	4

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

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7 • SELECT name, dept_name, MAX(salary) AS dept_max_salary FROM instructor GROUP BY dept_name;
8
9 • 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. ');
10
11 • (SELECT sec_id, COUNT(sec_id) AS enrollment FROM takes WHERE semester = 'spring' AND year = '2009' AND sec_id = '1') UNION

```

The results grid displays the following data:

ID	name	dept_name	salary
22222	Einstein	Physics	95000.00

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

Query 1 create\_university insert\_university SQL File 3\*

```

1 • 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');
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3 • SELECT instructor.* FROM instructor WHERE salary = ALL (SELECT MAX(salary) FROM instructor);
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5 • SELECT dept_name, AVG(salary) AS avg_salary FROM instructor GROUP BY dept_name HAVING AVG(salary) > 42000;
6
7 • SELECT name, dept_name, MAX(salary) AS dept_max_salary FROM instructor GROUP BY dept_name;
8
9 • 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.');
```

Result Grid

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;

Query 1 create\_university insert\_university SQL File 3\* Administration - Client Connecti...

```

1 • SELECT * FROM course WHERE course_id IN (SELECT course_id FROM teaches WHERE semester = 'fall' and year = '2009' or semester = 'spring' and year = '2010');
2
3 • SELECT instructor.* FROM instructor WHERE salary = ALL (SELECT MAX(salary) FROM instructor);
4
5 • SELECT dept_name, AVG(salary) AS avg_salary FROM instructor GROUP BY dept_name HAVING AVG(salary) > 42000;
6
7 • SELECT name, dept_name, MAX(salary) AS dept_max_salary FROM instructor GROUP BY dept_name;
```

Result Grid

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.');

Query 1 create\_university insert\_university SQL File 3\*

```

1 • 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');
2
3 • SELECT instructor.* FROM instructor WHERE salary = ALL (SELECT MAX(salary) FROM instructor);
4
5 • SELECT dept_name, AVG(salary) AS avg_salary FROM instructor GROUP BY dept_name HAVING AVG(salary) > 42000;
6
7 • SELECT name, dept_name, MAX(salary) AS dept_max_salary FROM instructor GROUP BY dept_name;
8
9 • 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.');
```

Result Grid

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');

The screenshot shows a SQL IDE with a query editor and a results grid. The query editor contains the following SQL code:

```

4
5 • SELECT dept_name, AVG(salary) AS avg_salary FROM instructor GROUP BY dept_name HAVING AVG(salary) > 42000;
6
7 • SELECT name, dept_name, MAX(salary) AS dept_max_salary FROM instructor GROUP BY dept_name;
8
9 • 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.');
```

The results grid shows the following data:

sec_id	enrollment
1	1
2	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);

The screenshot shows a SQL IDE with a query editor and a results grid. The query editor contains the following SQL code:

```

10
11 • (SELECT sec_id, COUNT(sec_id) AS enrollment FROM takes WHERE semester = 'spring' AND year = '2009' AND sec_id = '1') UNION
12 (SELECT sec_id, COUNT(sec_id) AS enrollment FROM takes WHERE semester = 'spring' AND year = '2009' AND sec_id = '2');
```

The results grid shows the following data:

max_enrollment
2

H) Before

Query 1 create\_university insert\_university SQL File 3\*

```

10
11 • (SELECT sec_id, COUNT(sec_id) AS enrollment FROM takes WHERE semester = 'spring' AND year = '2009' AND sec_id = '1') UNION
12 (SELECT sec_id, COUNT(sec_id) AS enrollment FROM takes WHERE semester = 'spring' AND year = '2009' AND sec_id = '2');
13
14 • 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
15 (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);
16
17 • SELECT * FROM course

```

Result Grid

course_id	title	dept_name	credits
BIO-101	Intro. to Biology	Biology	4
BIO-301	Genetics	Biology	4
BIO-399	Computational Biology	Biology	3
CS-101	Intro. to Computer Science	Comp. Sci.	4
CS-190	Game Design	Comp. Sci.	4
CS-315	Robotics	Comp. Sci.	3
CS-319	Image Processing	Comp. Sci.	3
CS-347	Database System Concepts	Comp. Sci.	3
EE-181	Intro. to Digital Systems	Elec. Eng.	3
FIN-201	Investment Banking	Finance	3
HIS-351	World History	History	3
MU-199	Music Video Production	Music	3
PHY-101	Physical Principles	Physics	4
NULL	NULL	NULL	NULL

After

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

Query 1 create\_university insert\_university SQL File 3\* Administration - Client Connecti...

```

13
14 • SELECT MAX(enrollment) AS max_enrollment FROM ((SELECT sec_id, COUNT(sec_id) AS enroll
15 (SELECT sec_id, COUNT(sec_id) AS enrollment FROM takes WHERE semester = 'spring' AND y
16
17 • SELECT * FROM course;
18
19 • DELETE FROM course WHERE course_id NOT IN (SELECT section.course_id From section)

```

Result Grid

course_id	title	dept_name	credits
BIO-101	Intro. to Biology	Biology	4
BIO-301	Genetics	Biology	4
CS-101	Intro. to Computer Science	Comp. Sci.	4
CS-190	Game Design	Comp. Sci.	4
CS-315	Robotics	Comp. Sci.	3
CS-319	Image Processing	Comp. Sci.	3
CS-347	Database System Concepts	Comp. Sci.	3
EE-181	Intro. to Digital Systems	Elec. Eng.	3
FIN-201	Investment Banking	Finance	3
HIS-351	World History	History	3
MU-199	Music Video Production	Music	3
PHY-101	Physical Principles	Physics	4
NULL	NULL	NULL	NULL