a. Find the names of all departments with the instructor, and remove duplicates.

Ans

SELECT DISTINCT dept\_name

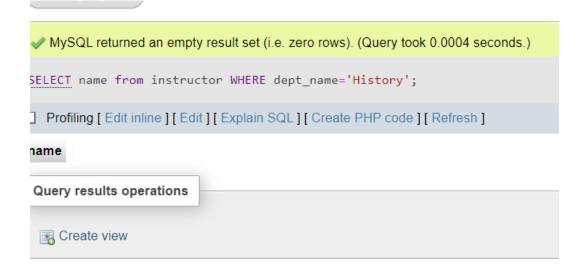
FROM instructor;



b. Find the names of all instructors in the History department.

Ans : SELECT name from instructor

WHERE dept\_name='History';



c. Find the instructor\_ID and department\_name of all instructors associated with a department with a budget of greater than \$95,000 Ans
SELECT ID,dept\_name
from instructor

from instructor

WHERE dept\_name IN(
select dept\_name
FROM department
WHERE budget>95000);



d. Find all instructors in the Computer Science department with salaries more than \$80,000.

Ans

**SELECT** 

\*FROM instructor

WHERE dept\_name='Comp. Sci.'

AND salary>80000;



E List the names of instructors along with the titles of courses that they teach.

Ans

SELECT i.name, c.title

FROM instructor i

JOIN teaches t ON i.ID = t.ID

JOIN course c ON t.course\_id = c.course\_id;

name	title		
Lembr	The Music of the Ramones		
Lembr	Environmental Law		
Bawa	Systems Software		
Wieland	International Practicum		
Wieland	Calculus		
Wieland	Shakespeare		
DAgostino	Graph Theory		
DAgostino	Graph Theory		
DAgostino	Compiler Design		
DAgostino	Visual BASIC		
DAgostino	Visual BASIC		
DAgostino	FOCAL Programming		
DAgostino	Mechanics		
DAgostino	Video Gaming		
DAgostino	Geology		

f. Find the names of all instructors who have a higher salary than some instructors in 'Computer Science'.

```
Ans
```

select DISTINCT i.name

from instructor i

where i.salary>(

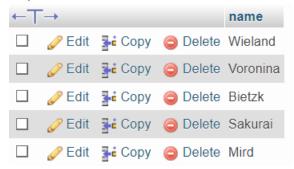
SELECT MAX(i1.salary)

from instructor i1

WHERE i1.dept\_name='Comp. Sci.'

);

## + Options



g. Find the names of all instructors whose salary is greater than at least one instructor in theBiology department

Ans

select DISTINCT i1.name

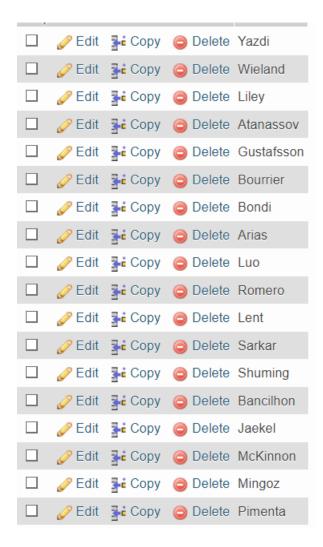
from instructor i1

where i1.salary>(

select max(i2.salary)

FROM instructor i2

where i2.dept\_name='Biology');



H Find the names of all departments whose building name includes the substring Watson'.

Ans

SELECT dept\_name

FROM department

WHERE building LIKE '%Watson%';

```
✓ MySQL returned an empty result set (i.e. zero rows). (Query took 0.0004 seconds.)
SELECT dept_name FROM department WHERE building LIKE '%Watson%';
□ Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]
```

I List in alphabetic order the names of all instructors

Δ	n	c
$\overline{}$		э

## SELECT name

from instructor

order by name ASC;

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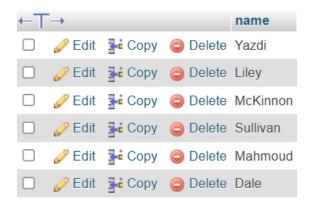
J Find the names of instructors with salary amounts between \$90,000 and \$100,000.

Ans

SELECT name

from instructor

where salary between 90000 and 100000;



K Find the instructor names and the courses they taught for all instructors in the Biology department who have taught some course.

Ans

SELECT i.name, c.title

FROM instructor i

JOIN teaches t ON i.ID = t.ID

JOIN course c ON t.course\_id = c.course\_id

WHERE i.dept\_name = 'Biology';



L Find the set of all courses taught either in Fall 2009 or in Spring 2010 Semester, or both.

Ans

SELECT DISTINCT course id

FROM section

WHERE (semester = 'Fall' AND year = 2009) OR (semester = 'Spring' AND year = 2010);



M. Find the set of all courses taught in the Fall 2009 as well as in Spring 2010 Semester

Ans

SELECT DISTINCT s1.course\_id

FROM section s1

JOIN section s2 ON s1.course\_id = s2.course\_id

WHERE s1.semester = 'Fall' AND s1.year = 2009

AND s2.semester = 'Spring' AND s2.year = 2010;

```
MySQL returned an empty result set (i.e. zero rows). (Query took 0.0012 seconds.)
SELECT DISTINCT s1.course_id FROM section s1 JOIN section s2 ON s1.course_id = s2.course_id
WHERE s1.semester = 'Fall' AND s1.year = 2009 AND s2.semester = 'Spring' AND s2.year = 2010;
Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]
```

N. Find all courses taught in the Fall 2009 semester but not in the Spring 2010 Semester.

```
Ans
```

```
SELECT course_id

FROM section

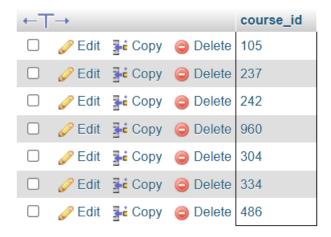
WHERE semester = 'Fall' AND year = 2009

AND course_id NOT IN (

SELECT course_id

FROM section

WHERE semester = 'Spring' AND year = 2010
);
```



O Find all instructors whose salary is null.

Ans

SELECT name

FROM instructor

WHERE salary IS NULL;

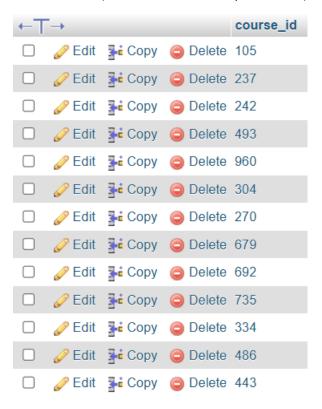
```
MySQL returned an empty result set (i.e. zero rows). (Query took 0.0002 seconds.)
SELECT name FROM instructor WHERE salary IS NULL;
Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]
```

P Find courses offered in Fall 2009 and in Spring 2010 Semester.

Ans SELECT DISTINCT course\_id

## FROM section

WHERE (semester = 'Fall' AND year = 2009) OR (semester = 'Spring' AND year = 2010);



q. Find courses offered in Fall 2009 but not in Spring 2010 Semester.

```
__._
```

Ans

```
SELECT course_id
```

FROM section

```
WHERE semester = 'Fall' AND year = 2009
```

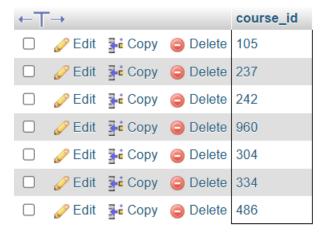
```
AND course_id NOT IN (
```

```
SELECT course_id
```

FROM section

```
WHERE semester = 'Spring' AND year = 2010
```

);



R. Find the total number of (distinct) students who have taken course sections taught by the instructor with ID 10101.

Ans SELECT COUNT(DISTINCT s.ID)

FROM student s

JOIN takes t ON s.ID = t.ID

JOIN teaches te ON t.course\_id = te.course\_id AND t.sec\_id = te.sec\_id AND t.semester = te.semester AND t.year = te.year

WHERE te.ID = 10101;

```
Your SQL query has been executed successfully.

SELECT COUNT(DISTINCT s.ID) FROM student s JOIN takes t ON s.ID = t.ID JOIN teaches te ON t.course_id = te.course_id AND t.sec_id = te.sec_id AND t.semester = te.semester AND t.year = te.year WHERE te.ID = 10101;

Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]
```

S. Find the names of instructors with salaries greater than that of some (at least one) instructor in the Biology department.

Ans SELECT DISTINCT i1.name

FROM instructor i1

```
WHERE i1.salary > ANY (
 SELECT i2.salary
 FROM instructor i2
 WHERE i2.dept_name = 'Biology'
);
                             name

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```

T. Find the names of all instructors whose salary is greater than the salary of all instructors in the Biology department.

Ans

SELECT DISTINCT i1.name

FROM instructor i1

```
WHERE i1.salary > ALL (
  SELECT i2.salary
  FROM instructor i2
  WHERE i2.dept_name = 'Biology'
);
                                name

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```

U Find all courses taught in both the Fall 2009 semester and in the Spring 2010 semester.

Ans

SELECT DISTINCT s1.course\_id

FROM section s1

WHERE s1.semester = 'Fall' AND s1.year = 2009

```
AND EXISTS (
  SELECT 1
  FROM section s2
  WHERE s2.course_id = s1.course_id
  AND s2.semester = 'Spring'
  AND s2.year = 2010
);

✓ MySQL returned an empty result set (i.e. zero rows). (Query took 0.0011 seconds.)

  SELECT DISTINCT s1.course_id FROM section s1 WHERE s1.semester = 'Fall' AND s1.year = 2009 AND
  EXISTS ( SELECT 1 FROM section s2 WHERE s2.course_id = s1.course_id AND s2.semester = 'Spring'
  AND s2.year = 2010);
                                   Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]
V. Find all students who have taken all courses offered in the Biology department.
Ans SELECT s.ID, s.name
FROM student s
WHERE NOT EXISTS (
  SELECT c.course_id
  FROM course c
  WHERE c.dept_name = 'Biology'
  AND NOT EXISTS (
```

SELECT t.ID

FROM takes t

AND t.ID = s.ID

)

);

WHERE t.course\_id = c.course\_id

```
✓ MySQL returned an empty result set (i.e. zero rows). (Query took 0.0187 seconds.)

SELECT s.ID, s.name FROM student s WHERE NOT EXISTS ( SELECT c.course_id FROM course c WHERE c.dept_name = 'Biology' AND NOT EXISTS ( SELECT t.ID FROM takes t WHERE t.course_id = c.course_id AND t.ID = s.ID ) );

□ Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]
```

## W. Find all courses that were offered at most once in 2009

Ans

SELECT course\_id

FROM section

WHERE year = 2009

GROUP BY course\_id

HAVING COUNT(DISTINCT semester) <= 1;

