

1. Find the names of all the instructors from Biology department

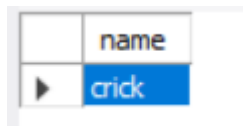
Code:-

```
select name  
from instructor  
where dept_name='biology';
```

Code Snippets

```
select name  
from instructor  
where dept_name='biology';
```

Output



	name
▶	crick

- 
2. Find the names of courses in Computer science department which have 3 credits

Code:-

```
select title as course_name  
from course  
where dept_name='comp. sci.' and credits=3;
```

Code snippets

```
select title as course_name  
from course  
where dept_name='comp. sci.' and credits=3;
```

Output

	course_name
▶	robotics
	image processing
	database system concepts

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3. For the student with ID 12345 (or any other value), show all course\_id and title of all courses registered for by the student

Code:-

```
select c.course_id,c.title  
from takes as t,course as c  
where c.course_id=t.course_id and t.id='12345';
```

Code Snippets

```
select c.course_id,c.title  
from takes as t,course as c  
where c.course_id=t.course_id and t.id='12345';
```

### Output

	course_id	title
▶	cs-101	intro. to computer science
	cs-190	game design
	cs-315	robotics
	cs-347	database system concepts

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4. As above, but show the total number of credits for such courses (taken by that student). Don't display the tot\_creds value from the student table, you should use SQL aggregation on courses taken by the student.

Code:-

```
select t.id,sum(credits)
from takes as t,course as c
where c.course_id=t.course_id and t.id='12345';
```

### Code Snippets

```
select t.id,sum(credits)
from takes as t,course as c
where c.course_id=t.course_id and t.id='12345';
```

### Output

	id	sum(credits)
▶	12345	14

5. As above, but display the total credits for each of the students, along with the ID of the student; don't bother about the name of the student. (Don't bother about students who have not registered for any course, they can be omitted)

Code:-

```
select t.id,sum(c.credits)
from takes as t,course as c
where c.course_id=t.course_id
group by t.id;
```

#### Code-snippets

- ```
select t.id,sum(c.credits)
from takes as t,course as c
where c.course_id=t.course_id
group by t.id;
```

#### Output

|   | id    | sum(c.credits) |
|---|-------|----------------|
| ▶ | 98988 | 8              |
|   | 00128 | 7              |
|   | 12345 | 14             |
|   | 45678 | 11             |
|   | 54321 | 8              |
|   | 76543 | 7              |
|   | 98765 | 7              |
|   | 76653 | 3              |
|   | 23121 | 3              |
|   | 19991 | 3              |
|   | 55739 | 3              |
|   | 44553 | 4              |

6. Find the names of all students who have taken any Comp. Sci. course ever (there should be no duplicate names)

Code:-

```
select distinct s.name  
from student as s,takes as t  
where s.id=t.id and t.course_id like 'cs%';
```

#### Code Snippets

```
select distinct s.name  
from student as s,takes as t  
where s.id=t.id and t.course_id like 'cs%';
```

#### Output

|   | name     |
|---|----------|
| ▶ | zhang    |
|   | shankar  |
|   | levy     |
|   | williams |
|   | brown    |
|   | bourikas |

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7. Display the IDs of all instructors who have never taught a course (Notesad1) Oracle uses the keyword minus in place of except; (2) interpret "taught" as "taught or is scheduled to teach")

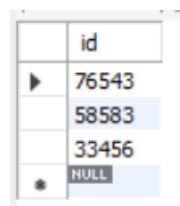
Code:-

```
select i.id  
from instructor as i  
where i.id not in (select t.id  
                  from teaches as t);
```

### Code-Snippets

```
select i.id  
from instructor as i  
where i.id not in (select t.id  
                  from teaches as t);
```

### Output



A screenshot of a database query result window. It shows a table with one column labeled 'id'. The table contains four rows of data: 76543, 58583, 33456, and NULL. The NULL value is highlighted with a blue background. There is a small icon to the left of each row, and a star icon at the bottom left of the table.

|   | id    |
|---|-------|
| ▶ | 76543 |
|   | 58583 |
|   | 33456 |
| ★ | NULL  |

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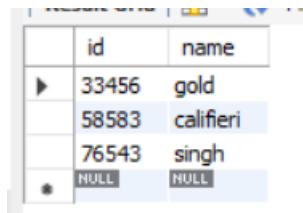
8. As above, but display the names of the instructors also, not just the IDs.

Code:-

```
select i.id,i.name  
from instructor as i  
where i.id not in (select t.id  
                  from teaches as t);
```

Code-Snippets

```
select i.id,i.name  
from instructor as i  
where i.id not in (select t.id  
                  from teaches as t);
```

Output

|   | id    | name      |
|---|-------|-----------|
| ▶ | 33456 | gold      |
|   | 58583 | califieri |
|   | 76543 | singh     |
| * | NULL  | NULL      |

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9. You need to create a movie database. Create three tables, one for actors(AID, name), one for movies(MID, title) and one for actor\_role(MID, AID, rolename). Use appropriate data types for each of the attributes, and add appropriate primary/foreign key constraints.

Code:-

```
create database theatre;
```

```
use theatre;
```

```
create table actors(  
aid varchar(5) primary key,  
name varchar(20)  
);
```

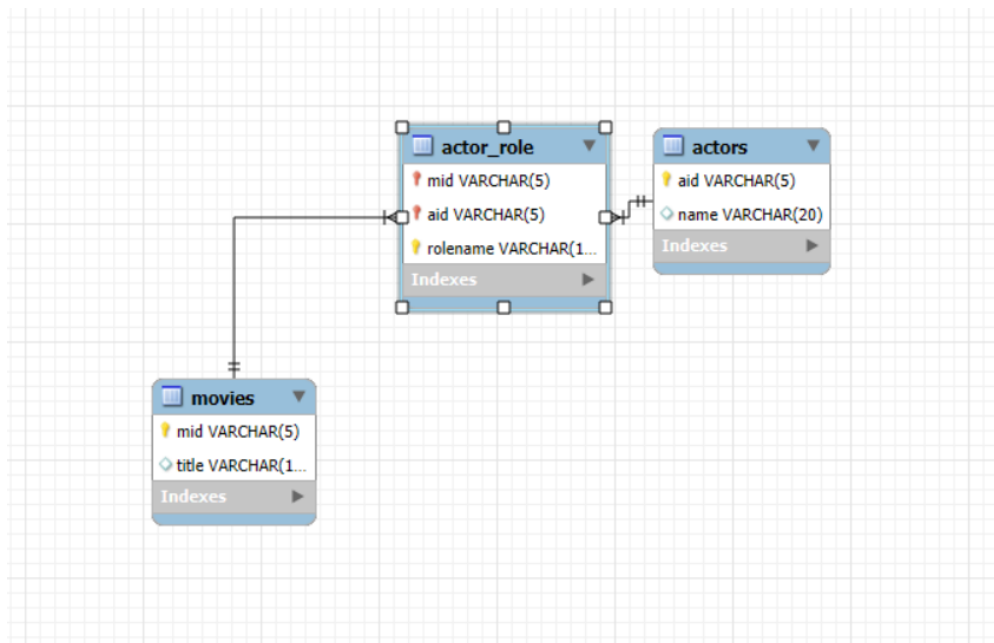
```
create table movies(  
mid varchar(5) primary key,
```

```
title varchar(15)
);
create table actor_role(
mid varchar(5),
aid varchar(5),
rolename varchar(10),
primary key(mid,aid,rolename),
foreign key(mid) references movies(mid) on delete cascade,
foreign key(aid) references actors(aid) on delete cascade
);
```

#### Code-Snippets

```
1 • create database theatre;
2 • use theatre;
3
4 • create table actors(
5     aid varchar(5) primary key,
6     name varchar(20)
7 );
8 • create table movies(
9     mid varchar(5) primary key,
10    title varchar(15)
11 );
12 • create table actor_role(
13     mid varchar(5),
14     aid varchar(5),
15     rolename varchar(10),
16     primary key(mid,aid,rolename),
17     foreign key(mid) references movies(mid) on delete cascade,
18     foreign key(aid) references actors(aid) on delete cascade
19 );
```



ER -Diagram

10. Insert data to the above tables (approx 3 to 6 rows in each table), including data for actor "Charlie Chaplin", and for yourself (using your roll number as ID).

Code:-

```
insert into actors
values
('100','charlie chaplin'),
('200','ursa major'),
('118','sachin mishra'),
('350','ursa minor'),
('256','capybara');
```

insert into movies values

('5156','badass ravikumar'),

('4759','constellation'),

('6532','honeycomb'),

('2138','a sky full of stars');

insert into actor\_role values

('6532','118','gojamaji'),

('6532','256','perry'),

('5156','100','ravi'),

('2138','200','queenbee'),

('5156','100','kumar');

### Code Snippets

```
insert into actors
values
('100','charlie chaplin'),
('200','ursa major'),
('118','sachin mishra'),
('350','ursa minor'),
('256','capybara');
insert into movies
values
('5156','badass ravikumar'),
('4759','constellation'),
('6532','honeycomb'),
('2138','a sky full of stars');
insert into actor_role
values
('6532','118','gojamaji'),
('6532','256','perry'),
('5156','100','ravi'),
('2138','200','queenbee'),
('5156','100','kumar');
```

---

Output

| mid  | title               |
|------|---------------------|
| 2138 | a sky full of stars |
| 4759 | constellation       |
| 5156 | badass ravikumar    |
| 6532 | honeycomb           |
| NULL | NULL                |

| aid  | name            |
|------|-----------------|
| 100  | charlie chaplin |
| 118  | sachin mishra   |
| 200  | ursa major      |
| 256  | capybara        |
| 350  | ursa minor      |
| NULL | NULL            |

| mid  | aid  | rolename |
|------|------|----------|
| 5156 | 100  | kumar    |
| 5156 | 100  | ravi     |
| 6532 | 118  | gojamaji |
| 2138 | 200  | queenbee |
| 6532 | 256  | perry    |
| NULL | NULL | NULL     |

11. Write a query to list all movies in which actor "Charlie Chaplin" has acted, along with the number of roles he had in that movie.

Code:-

```
select movies.mid,title,count(movies.mid)
from actor_role,actors,movies
where actors.name='charlie chaplin'
and actor_role.aid=actors.aid
and movies.mid=actor_role.mid
group by movies.mid;
```

Code-snippets

```
select movies.mid,title,count(movies.mid)
from actor_role,actors,movies
where actors.name='charlie chaplin'
and actor_role.aid=actors.aid
and movies.mid=actor_role.mid
group by movies.mid;
```

Output

|   | mid  | title            | count(movies.mid) |
|---|------|------------------|-------------------|
| ▶ | 5156 | badass ravikumar | 2                 |

---

12. Write a query to list all actors who have not acted in any movie

Code:-

```
select distinct actors.name
from actors,actor_role
where actors.aid not in(select actor_role.aid from actor_role);
```

Code-Snippets

```
select distinct actors.name
from actors,actor_role
where actors.aid not in(select actor_role.aid
                        from actor_role);
```

Output

|   | name       |
|---|------------|
| ▶ | ursa minor |

---

13. List names of actors, along with titles of movies they have acted in. If they have not acted in any movie, show the movie title as null. (Do not use SQL outerjoin syntax here, write it from scratch.)

Code:-

```
select actors.name,movies.title
from actors,movies,actor_role
where movies.mid=actor_role.mid and actor_role.aid=actors.aid
union
select actors.name,null
from actors
where aid not in (select aid from actor_role);
```

#### Code-Snippets

```
select actors.name,movies.title
from actors,movies,actor_role
where movies.mid=actor_role.mid and actor_role.aid=actors.aid
union
select actors.name,null
from actors
where aid not in (select aid from actor_role);
```

#### Output

|   | name            | title               |
|---|-----------------|---------------------|
| ▶ | charlie chaplin | badass ravikumar    |
|   | sachin mishra   | honeycomb           |
|   | ursa major      | a sky full of stars |
|   | capybara        | honeycomb           |
|   | ursa minor      | NULL                |