

The Sequel to SQL: Level 4 – Section 1

Inner Joins

Fetching Data From Multiple Tables

How do we get a list of reviews and all the associated movie titles?

Movies

id	title	genre	duration
1	Don Juan	Romance	110
2	Peter Pan	Adventure	105
3	The Lost World	Fantasy	106
4	Robin Hood	Adventure	143

Reviews

id	review	movie_id
1	Loved it!	1
2	A must-see!	1
3	Hated it	1
4	It was okay	3
5	Do not see!	4

```
SELECT review, movie_id  
FROM Reviews;
```

Fetches all the reviews

```
SELECT title  
FROM Movies  
WHERE id in (1,3,4);
```

Fetches all the associated movie titles

But we can return this data using 1 query instead of 2.

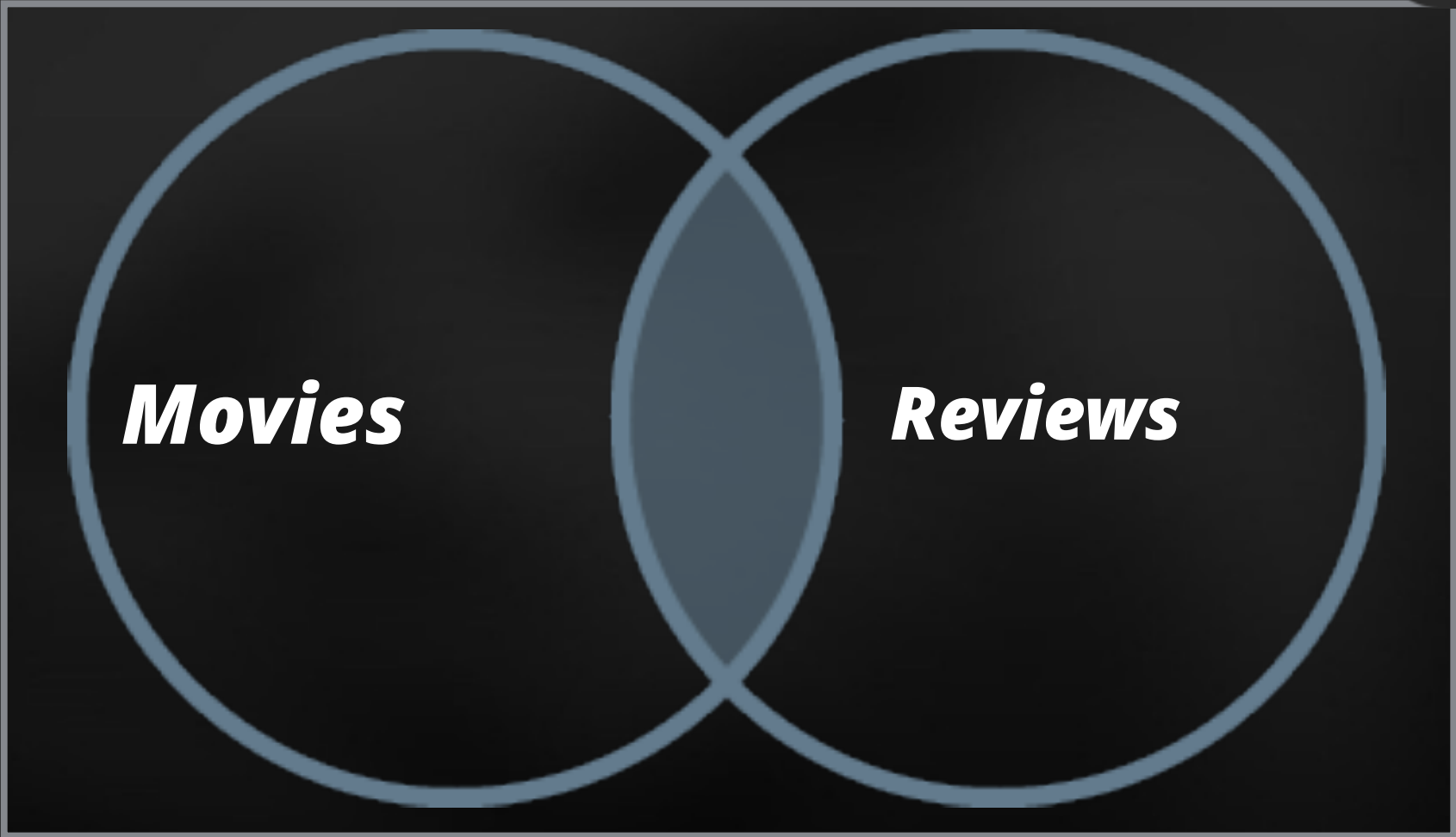
Looking at How to Join 2 Tables

We want to list only the **Reviews** that have **Movies** associated with them.

Movies			
id	title	genre	duration
1	Don Juan	Romance	110
2	Peter Pan	Adventure	105
3	The Lost World	Fantasy	106
4	Robin Hood	Adventure	143

Reviews		
id	review	movie_id
1	Loved it!	1
2	A must-see!	1
3	Hated it	1
4	It was okay	3
5	Do not see!	4

We are looking for all records that only match for both tables.




This inner part is all movies and their matched reviews.

Using the Primary and Foreign Key to Join

Two tables can be joined by the primary key and a foreign key.

Movies			
id	title	genre	duration
1	Don Juan	Romance	110
2	Peter Pan	Adventure	105
3	The Lost World	Fantasy	106
4	Robin Hood	Adventure	143

Reviews		
id	review	movie_id
1	Loved it!	1
2	A must-see!	1
3	Hated it	1
4	It was okay	3
5	Do not see!	4



The **movie_id** column in our **Reviews** table is the foreign key, which relates back to the **id** column in the **Movies** table.

Using the INNER JOIN Clause

By using INNER JOIN to create this query, we can show where both tables have matching values.

Movies			
id	title	genre	duration
1	Don Juan	Romance	110
2	Peter Pan	Adventure	105
3	The Lost World	Fantasy	106
4	Robin Hood	Adventure	143

Reviews		
id	review	movie_id
1	Loved it!	1
2	A must-see!	1
3	Hated it	1
4	It was okay	3
5	Do not see!	4

```
SELECT *
FROM Movies
INNER JOIN Reviews
ON Movies.id=Reviews.movie_id
```

The **INNER JOIN** clause, followed by the table that will be matched

The Result of an Inner Join

```
SELECT *
FROM Movies
INNER JOIN Reviews
ON Movies.id=Reviews.movie_id
```

Where both of our tables have matching values

title	genre	duration	id	movie_id	review	id
Don Juan	Romance	110	1	1	Loved it!	1
Don Juan	Romance	110	1	1	A must-see!	2
Don Juan	Romance	110	1	1	Hated it	3
The Lost World	Fantasy	106	3	3	It was okay	4
Robin Hood	Adventure	143	4	4	Do not see!	5

(5 rows)

Notice that movie #2 is not here, since it does not have a matching review.

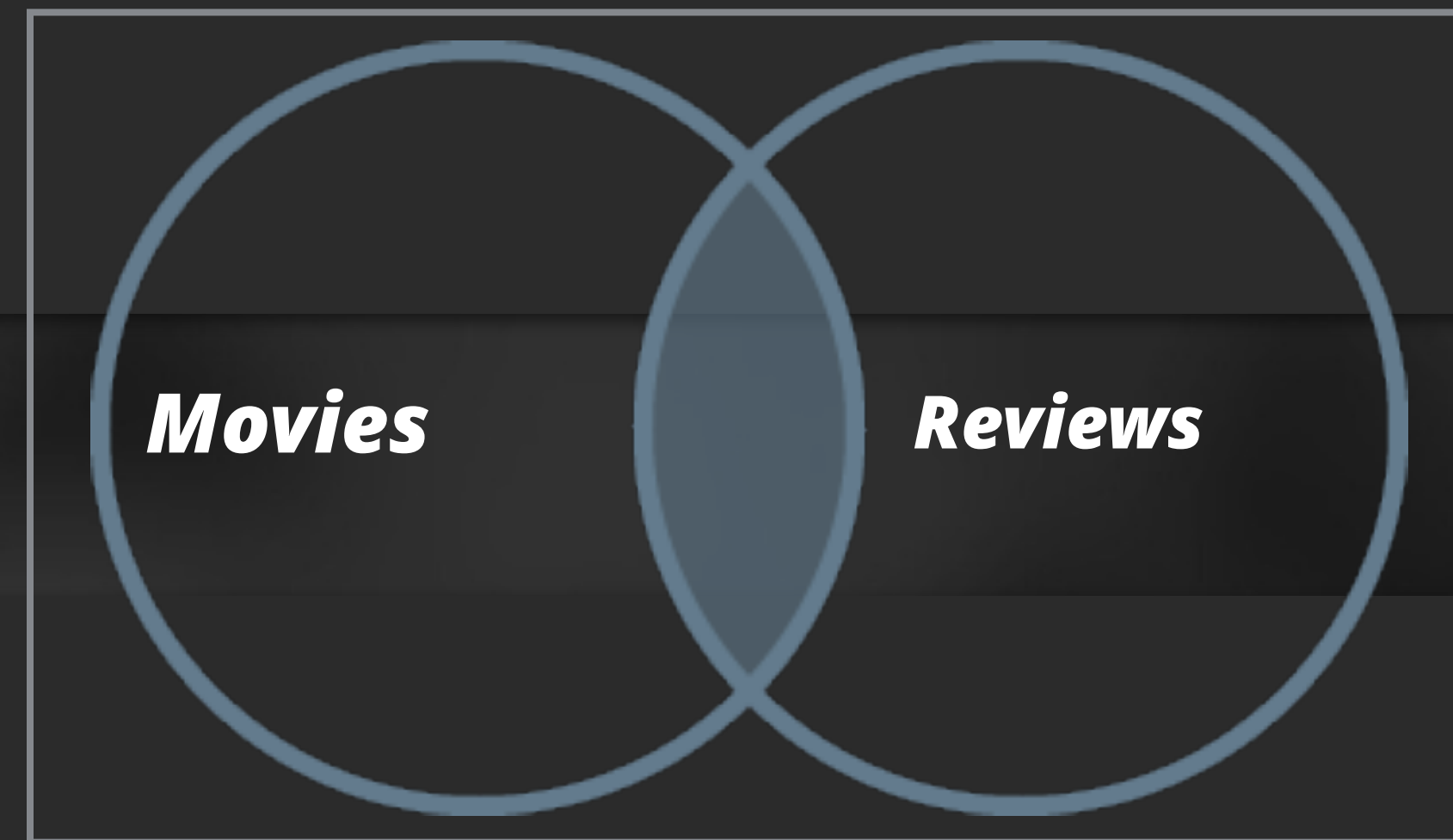
Reversing the INNER JOIN

Since we're always finding the records that match, this query can be written two ways.

```
SELECT *  
FROM Movies  
INNER JOIN Reviews  
ON Movies.id=Reviews.movie_id
```

Same result

```
SELECT *  
FROM Reviews  
INNER JOIN Movies  
ON Reviews.movie_id=Movies.id
```



Using an INNER JOIN to Create Specific Matches

What if we only wanted the movie title and review text to be returned?

Movies			
id	title	genre	duration
1	Don Juan	Romance	110
2	Peter Pan	Adventure	105
3	The Lost World	Fantasy	106
4	Robin Hood	Adventure	143

Reviews		
id	review	movie_id
1	Loved it!	1
2	A must-see!	1
3	Hated it	1
4	It was okay	3
5	Do not see!	4

Since we have 2 tables, we need to specify which table each column is coming from.

```
SELECT Movies.title, Reviews.review
FROM Movies
INNER JOIN Reviews
ON Movies.id=Reviews.movie_id
```

title	review
Don Juan	Loved it!
Don Juan	A must-see!
Don Juan	Hated it
Robin Hood	It was okay
The Lost World	Do not see!
(5 rows)	

Remember This Slide?

How do we find the genres of *Peter Pan*?

```
SELECT id
FROM Movies
WHERE title = "Peter Pan";
```

Fetches the **id**

```
SELECT genre_id
FROM Movies_Genres
WHERE movie_id = 2;
```

Fetches the **genre_ids** for our movie

```
SELECT name
FROM Genres
WHERE id = 2 or id = 3;
```

Fetches the genre **names** for our movie

```
WHERE id IN (2,3);
```

Movies

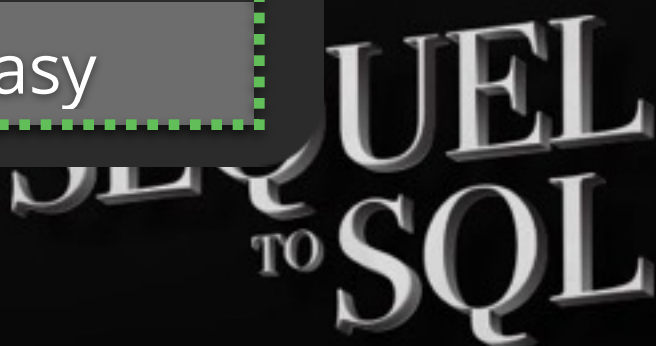
id	title	duration
1	Don Juan	110
2	Peter Pan	134
3	The Lost World	105
4	Robin Hood	143

Movies_Genres

movie_id	genre_id
1	1
2	2
2	3
3	3
4	2
4	3

Genres

id	name
1	Romance
2	Adventure
3	Fantasy



INNER JOIN on Multiple Tables

How do we find the genres of *Peter Pan*?

First join →

```
SELECT Movies.title, Genres.name
FROM Movies
INNER JOIN Movies_Genres
ON Movies.id = Movies_Genres.movie_id
```

Second join →

```
INNER JOIN Genres
ON Movies_Genres.genre_id = Genres.id
WHERE Movies.title = "Peter Pan";
```



title	name
Peter Pan	Adventure
Peter Pan	Fantasy

(2 rows)

Movies

id	title	duration
1	Don Juan	110
2	Peter Pan	134
3	The Lost World	105
4	Robin Hood	143

Movies_Genres

movie_id	genre_id
1	1
2	2
2	3
3	3
4	2

Genres

id	name
1	Romance
2	Adventure
3	Fantasy