

Self Inner Join

This lesson discusses how to join a table with itself.

Self Inner Join

The simplest join one can use is the inner join. Rows from two tables are joined together using a common column between them.

Syntax

```
SELECT *  
  
FROM table1  
  
INNER JOIN table1  
  
ON <join condition>;
```

Connect to the terminal below by clicking in the widget. Once connected, the command line prompt will show up. Enter or copy and paste the command `./DataJek/Lessons/25lesson.sh` and wait for the MySQL prompt to start-up.

-- The lesson queries are reproduced below for convenient copy/paste into the terminal.



-- Query 1

```
SELECT * FROM Actors a INNER JOIN Actors b;
```

-- Query 2

```
SELECT * FROM Actors a INNER JOIN Actors b USING(FirstName);
```

-- Query 3

```
SELECT * FROM Actors a INNER JOIN Actors b USING(NetWorthInMillions);
```

1. It may come as a surprise, but we can also join a table with itself. However, we need to use aliases as the **INNER JOIN** clause requires the two tables to be unique.

```
SELECT * FROM Actors a INNER JOIN Actors b;
```

If you run the above query, the result will be a cartesian product, i.e., each row will join with every other row of the second table. The total number of rows in the resulting table will be 121 because the table has 11 rows. The count for the inner join is shown below:

```
mysql> SELECT COUNT(*) FROM Actors a INNER JOIN Actors b;
+-----+
| COUNT(*) |
+-----+
|      121 |
+-----+
1 row in set (0.00 sec)
```



2. We can use the **USING** clause to specify the column to join the two tables on. For example:

```
SELECT * FROM Actors a INNER JOIN Actors b USING(FirstName);
```

FirstName	Id	SecondName	DoB	Gender	MaritalStatus	NetWorthInMillions	Id	SecondName	DoB	Gender	MaritalStatus	NetWorthInMillions
Brad	1	Pitt	1963-12-18	Male	Single	240	1	Brad	1963-12-18	Male	Single	240
Jennifer	2	Arreston	1969-11-02	Female	Single	240	2	Jennifer	1969-11-02	Female	Single	240
Angelina	3	Jolie	1975-06-04	Female	Single	240	3	Angelina	1975-06-04	Female	Single	240
Johney	4	Depp	1963-06-09	Male	Single	240	4	Johney	1963-06-09	Male	Single	240
Natalie	5	Portman	1981-06-09	Female	Married	50	5	Natalie	1981-06-09	Female	Married	50
Tom	6	Cruise	1962-07-03	Male	Divorced	570	6	Tom	1962-07-03	Male	Divorced	570
Kylie	7	Jenner	1987-08-10	Female	Married	1000	7	Kylie	1987-08-10	Female	Married	1000
Rim	8	Kardashian	1980-10-21	Female	Married	570	8	Rim	1980-10-21	Female	Married	570
Anitabh	9	Bachchan	1942-10-11	Male	Married	400	9	Anitabh	1942-10-11	Male	Married	400
Shahrukh	10	Khan	1955-11-02	Male	Married	600	10	Shahrukh	1955-11-02	Male	Married	600
priyanka	11	Chopra	1982-07-18	Female	Married	25	11	priyanka	1982-07-18	Female	Married	25

Note we have exactly 11 rows now because each row in the first table matches exactly one row in the second table. However, if we change the query and specify the NetWorthInMillions column in the **USING** clause, we'll get 13 rows in the result because the two rows with value 240 for the NetWorthInMillions column match twice for a total of four rows.

```
SELECT * FROM Actors a INNER JOIN Actors b USING(NetWorthInMillions);
```

NetWorthInMillions	Id	FirstName	SecondName	DoB	Gender	MaritalStatus	Id	FirstName	SecondName	DoB	Gender	MaritalStatus
240	1	Brad	Pitt	1963-12-18	Male	Single	1	Brad	Pitt	1963-12-18	Male	Single
240	2	Jennifer	Arreston	1969-11-02	Female	Single	2	Jennifer	Arreston	1969-11-02	Female	Single
240	3	Brad	Pitt	1963-12-18	Male	Single	3	Brad	Pitt	1963-12-18	Male	Single
240	4	Jennifer	Arreston	1969-11-02	Female	Single	4	Jennifer	Arreston	1969-11-02	Female	Single
240	5	Angelina	Jolie	1975-06-04	Female	Single	5	Angelina	Jolie	1975-06-04	Female	Single
240	6	Johney	Depp	1963-06-09	Male	Single	6	Johney	Depp	1963-06-09	Male	Single
50	7	Natalie	Portman	1981-06-09	Female	Married	7	Natalie	Portman	1981-06-09	Female	Married
570	8	Tom	Cruise	1962-07-03	Male	Divorced	8	Tom	Cruise	1962-07-03	Male	Divorced
1000	9	Kylie	Jenner	1987-08-10	Female	Married	9	Kylie	Jenner	1987-08-10	Female	Married
570	10	Rim	Kardashian	1980-10-21	Female	Married	10	Rim	Kardashian	1980-10-21	Female	Married
400	11	Anitabh	Bachchan	1942-10-11	Male	Married	11	Anitabh	Bachchan	1942-10-11	Male	Married
600	12	Shahrukh	Khan	1955-11-02	Male	Married	12	Shahrukh	Khan	1955-11-02	Male	Married
25	13	priyanka	Chopra	1982-07-18	Female	Married	13	priyanka	Chopra	1982-07-18	Female	Married

3. Remember, the **USING** clause defines one or more columns that are in both tables or results and used to join or match rows. Furthermore, if any rows from the two tables don't match, they aren't included in the output. This obviously, will not happen in the case of a self-join.