JOINS

A JOIN clause is used to combine rows from two or more tables, based on a related column between them (foreign key).

There are four kind of joins:

1. INNER JOIN
2. OUTER JOIN
3. RIGHT JOIN
4. LEFT JOIN

They are used with the same goal, to get data from different tables, but then…

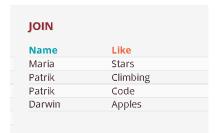### -What's the difference between inner and outer join?

Inner Join specifically returns ONLY the records that are related with each other.
For instance:
Picturing two tables, PEOPLE and LIKES.

ID	Name		User ID	Like
1	Patrik		3	Stars
2	Albert		1	Climbing
3	Maria		1	Code
4	Darwin		6	Rugby
5	Elizabeth		4	Apples

The result of an inner join would be only the records that are connected.

JOIN

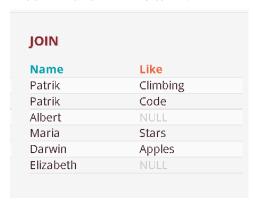| Name	Like
Maria	Stars
Patrik	Climbing
Patrik	Code
Darwin	Apples

On the other hand, OUTER JOIN is going to return ALL OF THEM, without taking into account if they are related or not. Just like the following picture:
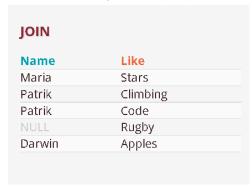
JOIN

Name	Like
Patrik	Climbing
Patrik	Code
Albert	NULL
Maria	Stars
Darwin	Apples
Elizabeth	NULL
NULL	Rugby

-What's the difference between left and right join?

It's kinda the same matter but in this case the query is going to return either all records from one table or the other. Just like the next picture using the same tables:

The LEFT JOIN is taking all records from the PEOPLE table, even though not all records are related with the LIKES table.

JOIN

Name	Like
Patrik	Climbing
Patrik	Code
Albert	NULL
Maria	Stars
Darwin	Apples
Elizabeth	NULL

And with RIGHT JOIN it's happening the opposite way, it's returning all records from the LIKES table even though not all people like all the things, like RUGBY, nobody likes it.

JOIN

Name	Like
Maria	Stars
Patrik	Climbing
Patrik	Code
NULL	Rugby
Darwin	Apples

References:
https://www.w3schools.com/sql/sql_join.asp
https://www.youtube.com/watch?v=zGSv0VaOtR0

- **JOINS EXAMPLES WITH ACTIVE RECORD:**

```
irb(main):022:0> Match.joins(:predictions)
  Match Load (0.6ms)  SELECT "matches".* FROM "matches" INNER JOIN "predictions" ON "predictions"."matches_id" = "matches"."id"
=>
[#<Match:0x00000158b49defa0
  id: 3,
  name: "Brazil vs France",
  team_one_id: 10,
  team_two_id: 3,
  goals_first_team: 4,
  goals_second_team: 0,
  status: "Not played",
  created_at: Thu, 06 Oct 2022 14:57:54.119045000 UTC +00:00,
  updated_at: Thu, 06 Oct 2022 18:49:16.507030000 UTC +00:00,
  play_on: Thu, 06 Oct 2022>,
 #<Match:0x00000158b49dede8
  id: 3,
  name: "Brazil vs France",
  team_one_id: 10,
  team_two_id: 3,
  goals_first_team: 4,
  goals_second_team: 0,
  status: "Not played",
  created_at: Thu, 06 Oct 2022 14:57:54.119045000 UTC +00:00,
  updated_at: Thu, 06 Oct 2022 18:49:16.507030000 UTC +00:00,
  play_on: Thu, 06 Oct 2022>,
 #<Match:0x00000158b49debe0
  id: 3,
```

```
irb(main):041:0> User.joins(:cards)
  User Load (0.5ms)  SELECT "users".* FROM "users" INNER JOIN "cards" ON "cards"."user_id" = "users"."id"
```

```
irb(main):032:0> User.joins(:predictions)
  User Load (0.7ms)  SELECT "users".* FROM "users" INNER JOIN "predictions" ON "predictions"."user_id" = "users"."id"
```

```
irb(main):001:0> Prize.joins(:cards)
  Prize Load (1.4ms)  SELECT "prizes".* FROM "prizes" INNER JOIN "cards" ON "cards"."prize_id" = "prizes"."id"
```

```
Exiting
3pg.itgroup@3pgitgroups-MacBook-Pro BettingPool % User.joins("INNER JOIN cards ON cards.users_id = users.id")
zsh: unknown file attribute:
3pg.itgroup@3pgitgroups-MacBook-Pro BettingPool % rails c
Loading development environment (Rails 7.0.4)
3.0.4 :001 > User.joins("INNER JOIN cards ON cards.users_id = users.id")
  User Load (1.3ms)  SELECT "users".* FROM "users" INNER JOIN cards ON cards.users_id = users.id
 =>
[#<User id: 2, name: "ADMIN", profile_picture: nil, email: "imadmin@gmail.com", status: "winner", created_at: "2022-10-05 17:48:40.284206000 +0000", updated_at: "2022-10-12 16:28:41.899627000 +0000", total_points: 0>,
 #<User id: 3, name: "John", profile_picture: nil, email: "john@gmail.com", status: "winner", created_at: "2022-10-05 17:48:40.509727000 +0000", updated_at: "2022-10-12 16:28:41.875016000 +0000", total_points: 0>,
 #<User id: 6, name: "", profile_picture: nil, email: "user1@gmail.com", status: "winner", created_at: "2022-10-05 19:42:17.958866000 +0000", updated_at: "2022-10-12 16:28:41.884306000 +0000", total_points: 0>,
 #<User id: 7, name: "", profile_picture: nil, email: "user2@gmail.com", status: "winner", created_at: "2022-10-05 19:43:28.570228000 +0000", updated_at: "2022-10-12 16:28:41.915675000 +0000", total_points: 0>,
 #<User id: 8, name: "", profile_picture: nil, email: "a1@gmail.com", status: "winner", created_at: "2022-10-12 16:48:33.423597000 +0000", updated_at: "2022-10-12 16:53:19.886302000 +0000", total_points: 0>]
3.0.4 :002 > []
```

```
User.joins("INNER JOIN cards ON cards.users_id = users.id")
User.joins("INNER JOIN cards ON cards.users_id = users.id").select("cards.*, users.id as users_id, users.email,users.name, cards.id")
User.joins("LEFT JOIN cards ON cards.users_id = users.id").select("cards.*, users.id as users_id,users.name, users.email")
User.joins("RIGHT JOIN cards ON cards.users_id = users.id").select("cards.*, users.id as users_id,users.name, users.email")
User.joins("FULL JOIN cards ON cards.users_id = users.id").select("cards.*, users.id as users_id,users.name, users.email")
Prize.joins("INNER JOIN cards ON cards.prizes_id = prizes.id").select("prizes.type_of_prize,prizes.id as prize_id, cards.id as card_id")
Team.joins("LEFT JOIN matches ON matches.team_one_id = teams.id ").select("matches.*, teams.name as team_name,matches.id as match_id, matches.name as match_name, teams.id as team_id")
Team.joins("INNER JOIN matches ON matches.team_two_id = teams.id ").select("matches.*, teams.name as team_name,matches.id as match_id, matches.name as match_name, teams.id as team_id")
```