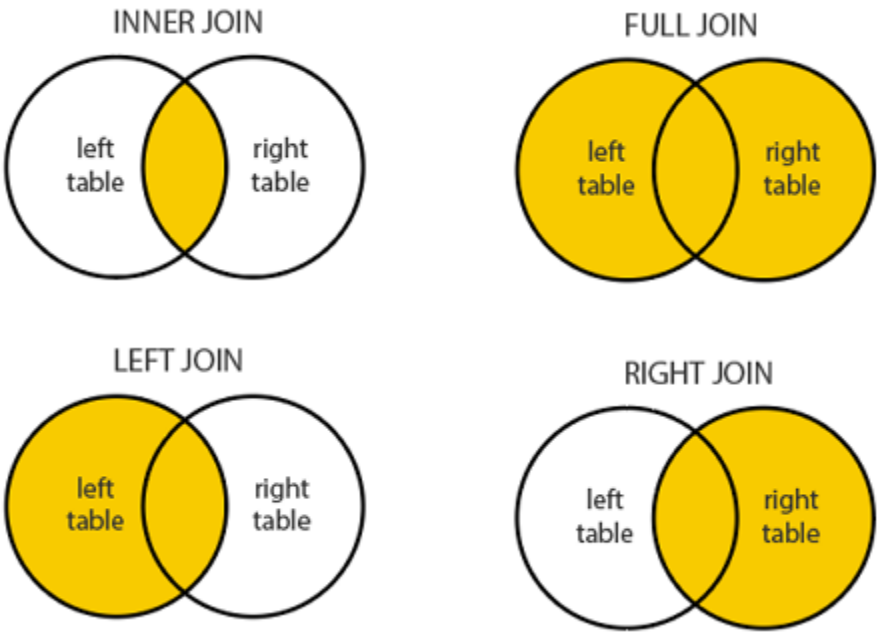
JOINs

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

Different Types of SQL JOINs

- `(INNER) JOIN`: Returns records that have matching values in both tables
- `LEFT (OUTER) JOIN`: Returns all records from the left table, and the matched records from the right table
- `RIGHT (OUTER) JOIN`: Returns all records from the right table, and the matched records from the left table
- `FULL (OUTER) JOIN`: Returns all records when there is a match in either left or right table
- `CROSS JOIN`: Matches every row of the first table with every row of the second table.
    - Note: A cross join can also be accomplished with the following syntax: `SELECT * FROM table_a, table_b;`



Example:

The following joins examples will use the table that we built in the Sublanguages Examples

1. Count users with the greatest number of posts:

```
SELECT users.id, first_name, last_name, count(*) AS count_num FROM users
                LEFT JOIN posts ON posts.author_id = users.id
                GROUP BY users.id
```

```
        ORDER BY count_num DESC;
```

2. Select the most liked posts I want the top 10 most liked posts ordered from most liked to least liked:

```
--In our case, a right join is effectively an inner join
SELECT COUNT(*) FROM users
               RIGHT JOIN posts ON users.id = posts.author_id;
```

3. Create a view from a query:

```
CREATE VIEW most_posts AS SELECT users.id, first_name, last_name, COUNT(*)
AS count_num FROM users
               LEFT JOIN posts ON posts.author_id = users.id
               GROUP BY users.id
        ORDER BY count_num DESC;

    SELECT * FROM most_posts WHERE id > 500;
```

Task:

- Create the model for your banking application.
- Create a ERD to represent your model. ERD -> Entity Reliational Diagram
- Define all PKs, FKs, define multiplicity between tables/entities.
- Define all constraints necessary to weed out invalid data and mantain referential integrity.
- Define common ways data might be joined and define views to access those.

References:

- PSQL JOINs