



JOINING DATA IN POSTGRESQL

Welcome to the course!

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Curriculum Lead, DataCamp



left_table

| id | val |
|----|-----|
| 1 | L1 |
| 2 | L2 |
| 3 | L3 |
| 4 | L4 |

right_table

| id | val |
|----|-----|
| 1 | R1 |
| 4 | R2 |
| 5 | R3 |
| 6 | R4 |



left_table

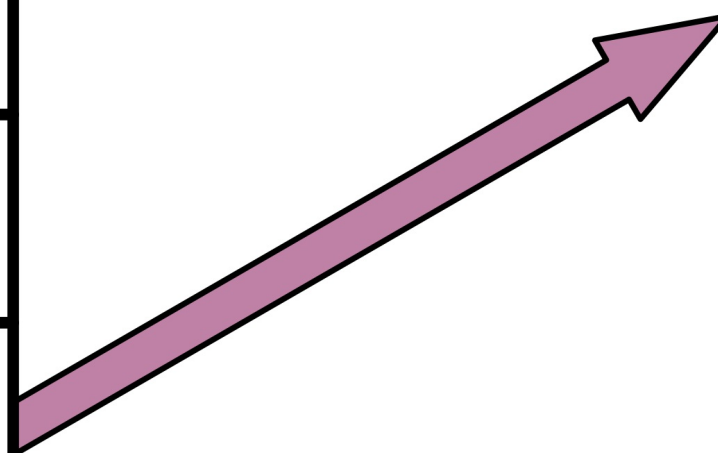
id val

| | |
|---|----|
| 1 | L1 |
| 2 | L2 |
| 3 | L3 |
| 4 | L4 |

right_table

id val

| | |
|---|----|
| 1 | R1 |
| 4 | R2 |
| 5 | R3 |
| 6 | R4 |





left_table

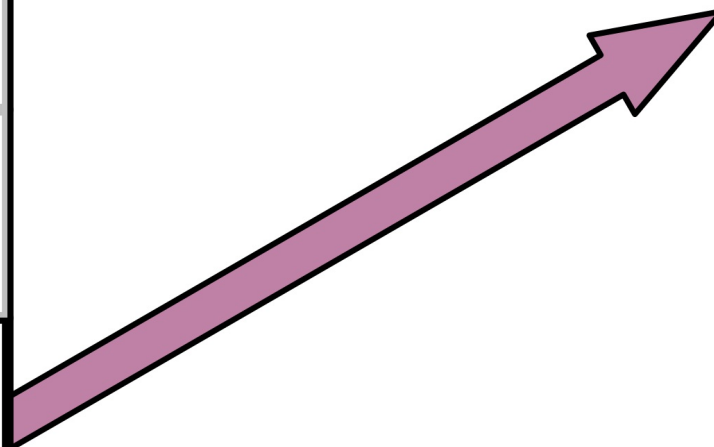
id val

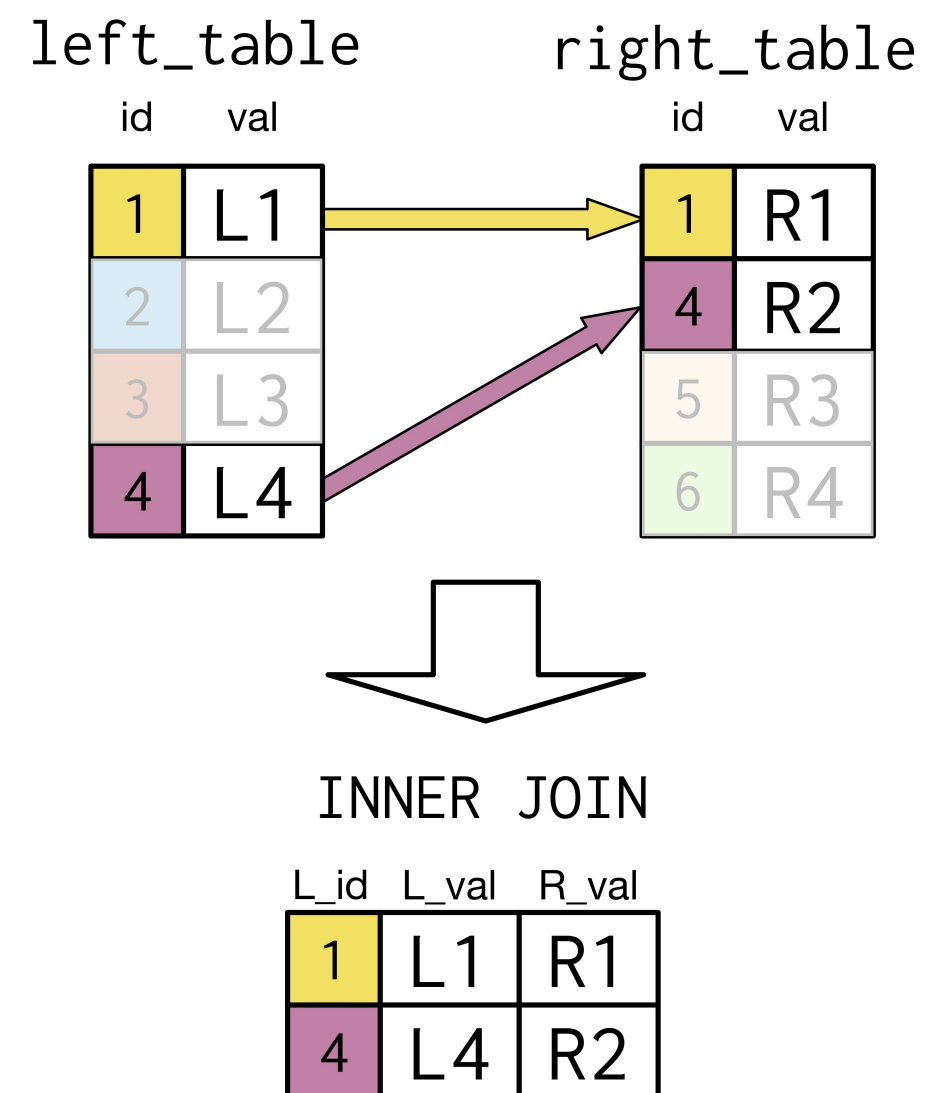
| | |
|---|----|
| 1 | L1 |
| 2 | L2 |
| 3 | L3 |
| 4 | L4 |

right_table

id val

| | |
|---|----|
| 1 | R1 |
| 4 | R2 |
| 5 | R3 |
| 6 | R4 |







prime_ministers table

| country | continent | prime_minister |
|-----------|---------------|-------------------------|
| Egypt | Africa | Sherif Ismail |
| Portugal | Europe | Antonio Costa |
| Vietnam | Asia | Nguyen Xuan Phuc |
| Haiti | North America | Jack Guy Lafontant |
| India | Asia | Narendra Modi |
| Australia | Oceania | Malcolm Turnbull |
| Norway | Europe | Erna Solberg |
| Brunei | Asia | Hassanal Bolkiah |
| Oman | Asia | Qaboos bin Said al Said |
| Spain | Europe | Mariano Rajoy |

presidents table

```
SELECT *  
FROM presidents;
```

| country | continent | president |
|----------|---------------|-------------------------|
| Egypt | Africa | Abdel Fattah el-Sisi |
| Portugal | Europe | Marcelo Rebelo de Sousa |
| Haiti | North America | Jovenel Moise |
| Uruguay | South America | Jose Mujica |
| Liberia | Africa | Ellen Johnson Sirleaf |
| Chile | South America | Michelle Bachelet |
| Vietnam | Asia | Tran Dai Quang |



INNER JOIN in SQL

```
SELECT p1.country, p1.continent,  
       prime_minister, president  
FROM prime_ministers AS p1  
INNER JOIN presidents AS p2  
ON p1.country = p2.country;
```

| country | continent | prime_minister | president |
|----------|---------------|--------------------|-------------------------|
| Egypt | Africa | Sherif Ismail | Abdel Fattah el-Sisi |
| Portugal | Europe | Antonio Costa | Marcelo Rebelo de Sousa |
| Vietnam | Asia | Nguyen Xuan Phuc | Tran Dai Quang |
| Haiti | North America | Jack Guy Lafontant | Jovenel Moise |



JOINING DATA IN POSTGRESQL

Let's practice!



JOINING DATA IN POSTGRESQL

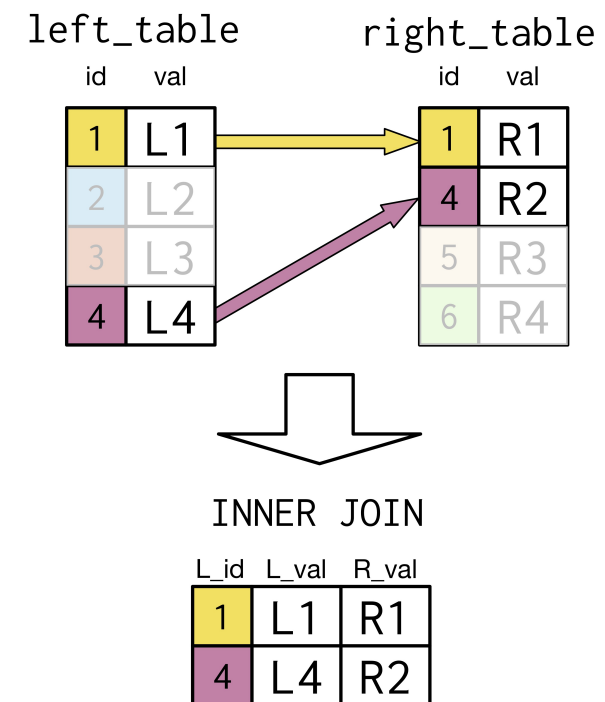
INNER JOIN via USING

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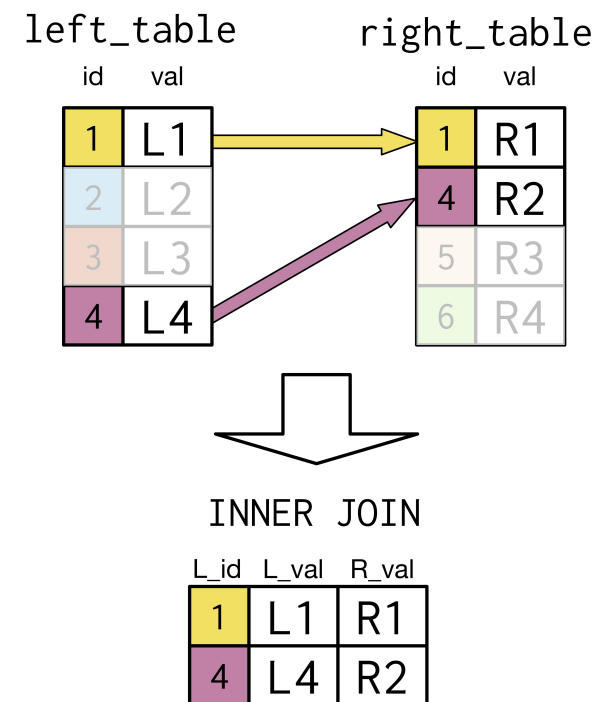


The INNER JOIN diagram again



```
SELECT left_table.id AS L_id,  
       left_table.val AS L_val,  
       right_table.val AS R_val  
FROM left_table  
INNER JOIN right_table  
ON left_table.id = right_table.id;
```

The INNER JOIN diagram with USING



```
SELECT left_table.id AS L_id,  
       left_table.val AS L_val,  
       right_table.val AS R_val  
FROM left_table  
INNER JOIN right_table  
USING (id);
```

Countries with prime ministers and presidents - again

```
SELECT p1.country, p1.continent, prime_minister, president
FROM _____ AS p1
INNER JOIN _____ AS p2
  _____ (_____);
```

One answer:

```
SELECT p1.country, p1.continent, prime_minister, president
FROM presidents AS p1
INNER JOIN prime_ministers AS p2
  USING (country);
```

| country | continent | prime_minister | president |
|----------|---------------|--------------------|-------------------------|
| Egypt | Africa | Sherif Ismail | Abdel Fattah el-Sisi |
| Portugal | Europe | Antonio Costa | Marcelo Rebelo de Sousa |
| Vietnam | Asia | Nguyen Xuan Phuc | Tran Dai Quang |
| Haiti | North America | Jack Guy Lafontant | Jovenel Moise |



JOINING DATA IN POSTGRES SQL

Let's practice!



JOINING DATA IN POSTGRESQL

Self-ish joins, just in CASE

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Join a table to itself?

| country | continent | prime_minister |
|-----------|---------------|-------------------------|
| Egypt | Africa | Sherif Ismail |
| Portugal | Europe | Antonio Costa |
| Vietnam | Asia | Nguyen Xuan Phuc |
| Haiti | North America | Jack Guy Lafontant |
| India | Asia | Narendra Modi |
| Australia | Oceania | Malcolm Turnbull |
| Norway | Europe | Erna Solberg |
| Brunei | Asia | Hassanal Bolkiah |
| Oman | Asia | Qaboos bin Said al Said |
| Spain | Europe | Mariano Rajoy |

Join prime_ministers to itself?

```
SELECT p1.country AS country1, p2.country AS country2, p1.continent
FROM prime_ministers AS p1
INNER JOIN prime_ministers AS p2
ON p1.continent = p2.continent
LIMIT 14;
```

| country1 | country2 | continent |
|-----------|-----------|---------------|
| Egypt | Egypt | Africa |
| Portugal | Spain | Europe |
| Portugal | Norway | Europe |
| Portugal | Portugal | Europe |
| Vietnam | Oman | Asia |
| Vietnam | Brunei | Asia |
| Vietnam | India | Asia |
| Vietnam | Vietnam | Asia |
| Haiti | Haiti | North America |
| India | Oman | Asia |
| India | Brunei | Asia |
| India | India | Asia |
| India | Vietnam | Asia |
| Australia | Australia | Oceania |

Finishing off the self-join on prime_ministers

```
SELECT p1.country AS country1, p2.country AS country2, p1.continent
FROM prime_ministers AS p1
INNER JOIN prime_ministers AS p2
ON p1.continent = p2.continent AND p1.country <> p2.country
LIMIT 13;
```

| country1 | country2 | continent |
|----------|----------|-----------|
| Portugal | Spain | Europe |
| Portugal | Norway | Europe |
| Vietnam | Oman | Asia |
| Vietnam | Brunei | Asia |
| Vietnam | India | Asia |
| India | Oman | Asia |
| India | Brunei | Asia |
| India | Vietnam | Asia |
| Norway | Spain | Europe |
| Norway | Portugal | Europe |
| Brunei | Oman | Asia |
| Brunei | India | Asia |
| Brunei | Vietnam | Asia |



CASE WHEN and THEN

| name | continent | indep_year |
|-----------|---------------|------------|
| Australia | Oceania | 1901 |
| Brunei | Asia | 1984 |
| Chile | South America | 1810 |
| Egypt | Africa | 1922 |
| Haiti | North America | 1804 |
| India | Asia | 1947 |
| Liberia | Africa | 1847 |
| Norway | Europe | 1905 |
| Oman | Asia | 1951 |
| Portugal | Europe | 1143 |
| Spain | Europe | 1492 |
| Uruguay | South America | 1828 |
| Vietnam | Asia | 1945 |



Preparing indep_year_group in states

```
SELECT name, continent, indep_year,  
       CASE WHEN ____ < ____ THEN 'before 1900'  
            WHEN indep_year <= 1930 THEN '____'  
            ELSE '____' END  
       AS indep_year_group  
FROM states  
ORDER BY indep_year_group;
```

Creating indep_year_group in states

```
SELECT name, continent, indep_year,  
       CASE WHEN indep_year < 1900 THEN 'before 1900'  
            WHEN indep_year <= 1930 THEN 'between 1900 and 1930'  
            ELSE 'after 1930' END  
       AS indep_year_group  
FROM states  
ORDER BY indep_year_group;
```

| name | continent | indep_year | indep_year_group |
|-----------|---------------|------------|-----------------------|
| Brunei | Asia | 1984 | after 1930 |
| India | Asia | 1947 | after 1930 |
| Oman | Asia | 1951 | after 1930 |
| Vietnam | Asia | 1945 | after 1930 |
| Liberia | Africa | 1847 | before 1900 |
| Chile | South America | 1810 | before 1900 |
| Haiti | North America | 1804 | before 1900 |
| Portugal | Europe | 1143 | before 1900 |
| Spain | Europe | 1492 | before 1900 |
| Uruguay | South America | 1828 | before 1900 |
| Norway | Europe | 1905 | between 1900 and 1930 |
| Australia | Oceania | 1901 | between 1900 and 1930 |
| Egypt | Africa | 1922 | between 1900 and 1930 |



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