JOINING DATA IN SQL

LEFT and RIGHT JOINs

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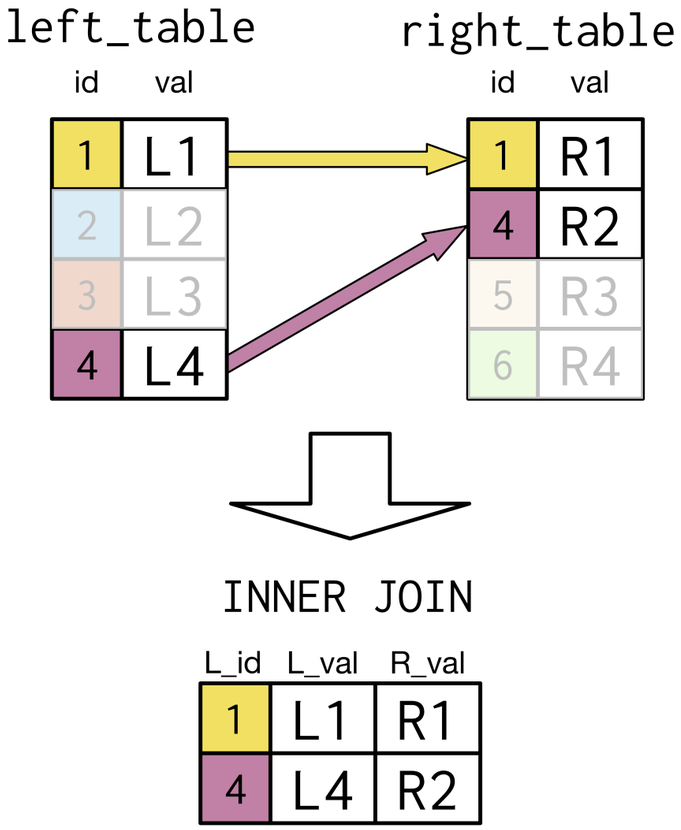
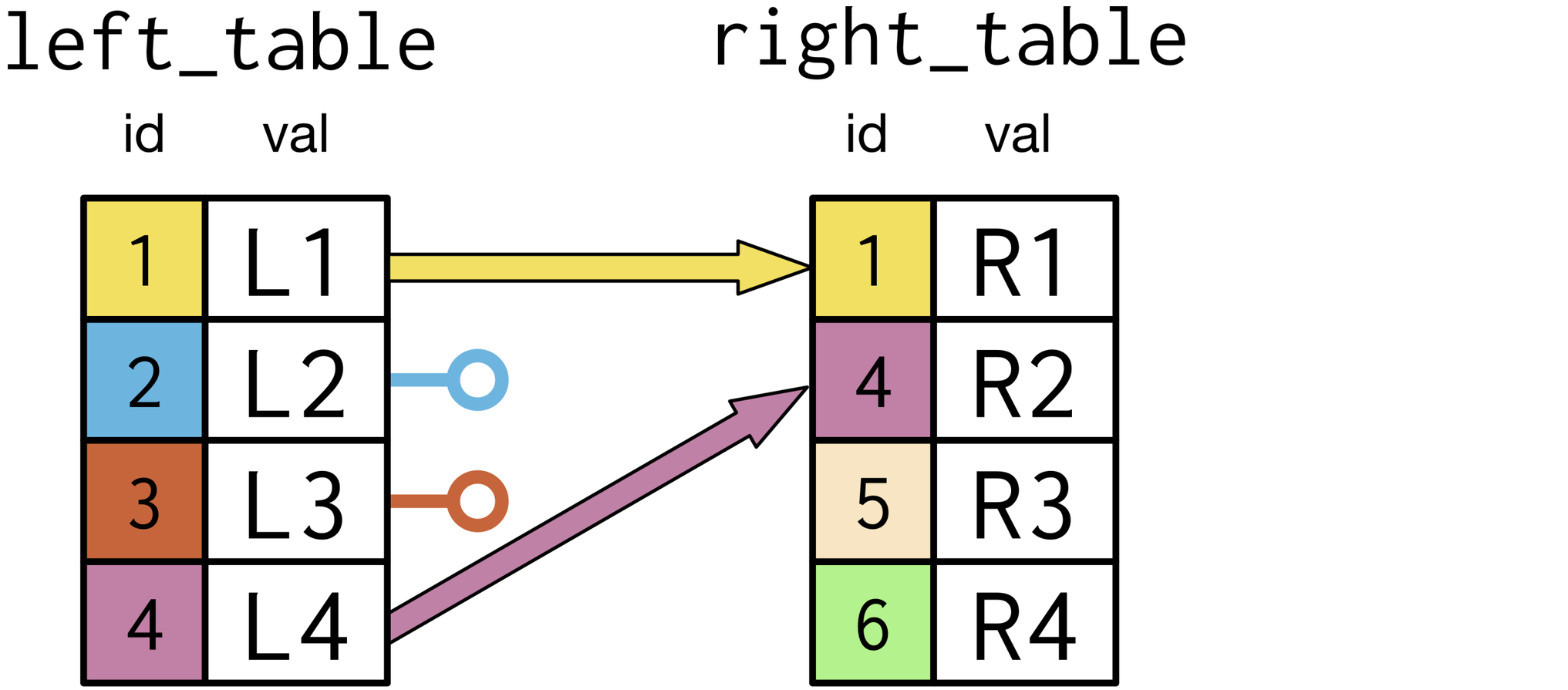
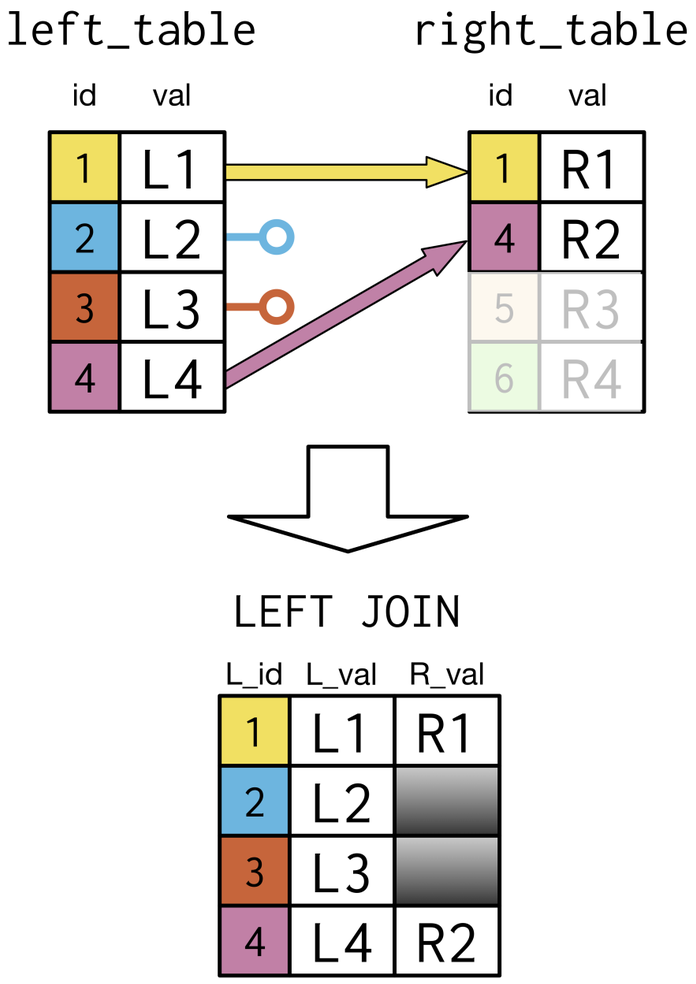
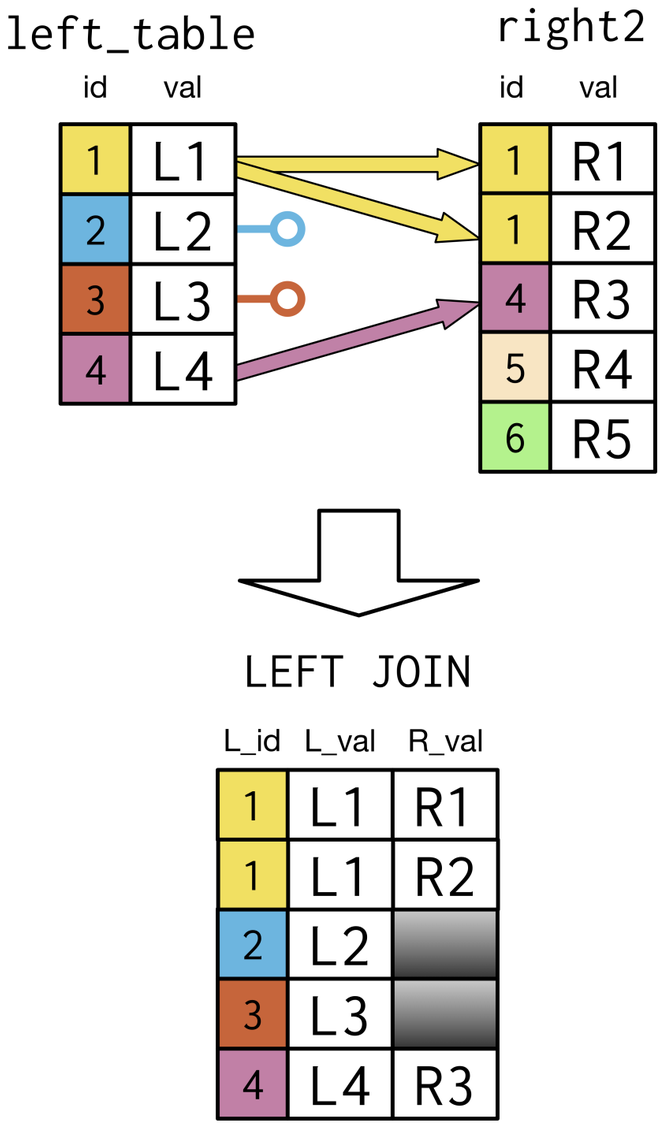

left_table
id val
1 L1
2 L2
3 L3
4 L4
right_table
id val
1 R1
4 R2
5 R3
6 R4
INNER JOIN
L_id L_val R_val
1 L1 R1
4 L4 R2


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 JOIN
L_id
L_val
R_val
1
L1
R1
2
L2
3
L3
4
L4
R2

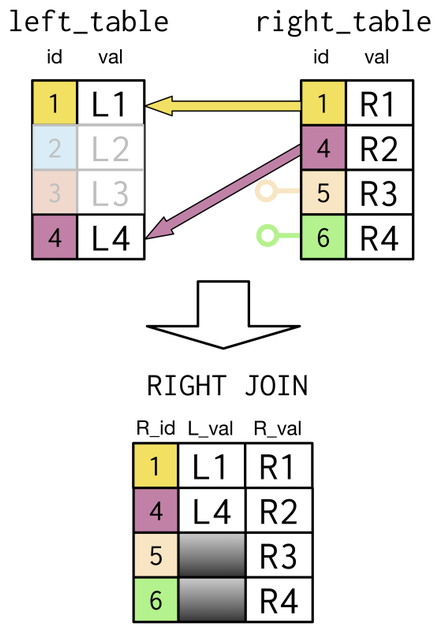

left_table
id val
1 L1
2 L2
3 L3
4 L4
right2
id val
1 R1
1 R2
4 R3
5 R4
6 R5
LEFT JOIN
L_id L_val R_val
1 L1 R1
1 L1 R2
2 L2
3 L3
4 L4 R3

The syntax of a LEFT JOIN

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

```
+-----------+--------------------------+--------------------------+
| country   | prime_minister           | president                |
|-----------+--------------------------+--------------------------|
| Egypt     | Sherif Ismail            | Abdel Fattah el-Sisi     |
| Portugal  | Antonio Costa            | Marcelo Rebelo de Sousa  |
| Vietnam   | Nguyen Xuan Phuc         | Tran Dai Quang           |
| Haiti     | Jack Guy Lafontant       | Jovenel Moise            |
| India     | Narendra Modi            |                          |
| Australia | Malcolm Turnbull         |                          |
| Norway    | Erna Solberg             |                          |
| Brunei    | Hassanal Bolkiah         |                          |
| Oman      | Qaboos bin Said al Said  |                          |
| Spain     | Mariano Rajoy            |                          |
+-----------+--------------------------+--------------------------+
```

RIGHT JOIN




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

JOINING DATA IN SQL

Let's practice!

JOINING DATA IN SQL

FULL JOINs

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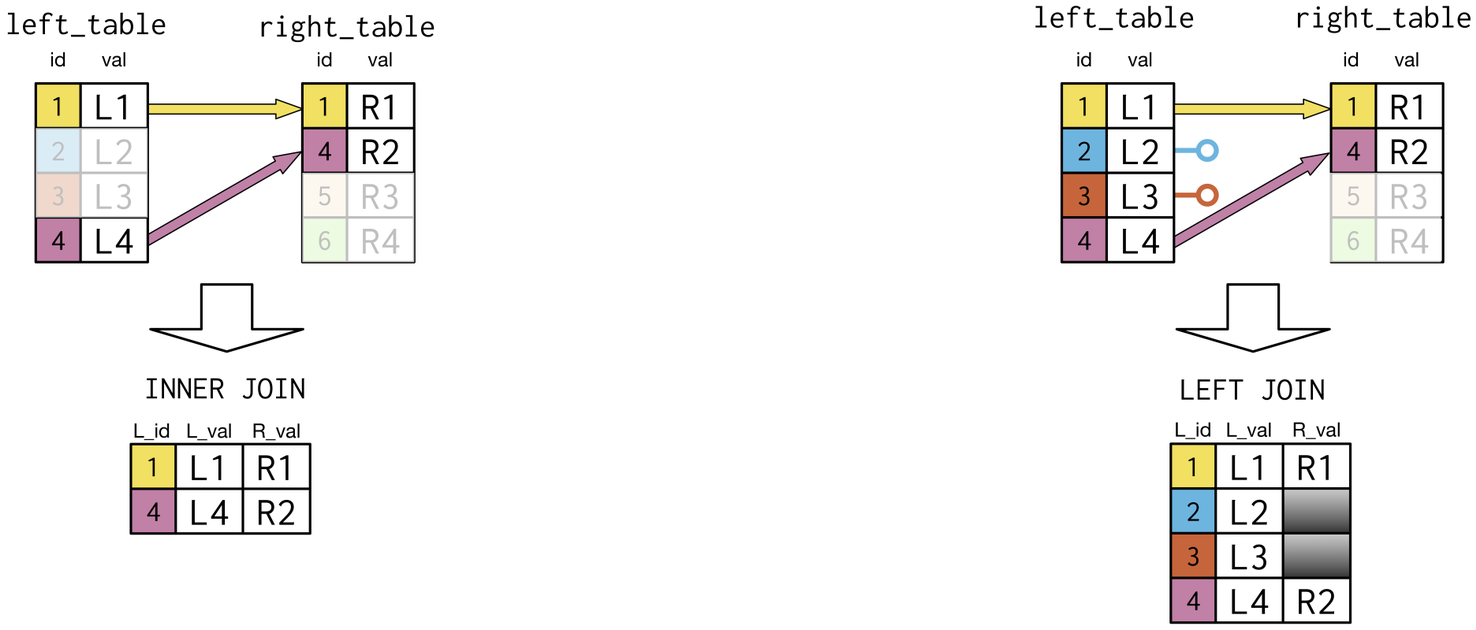
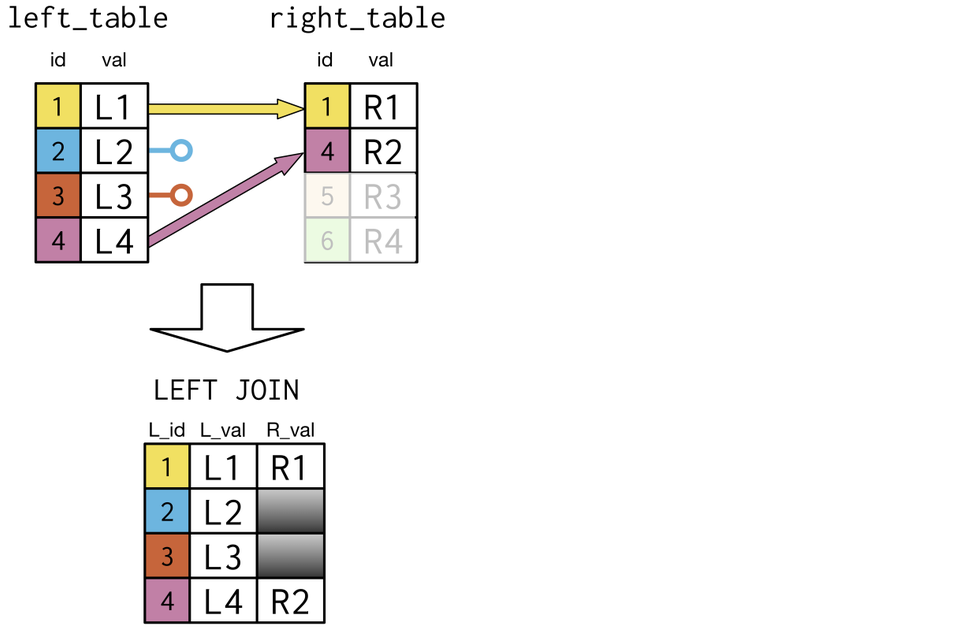
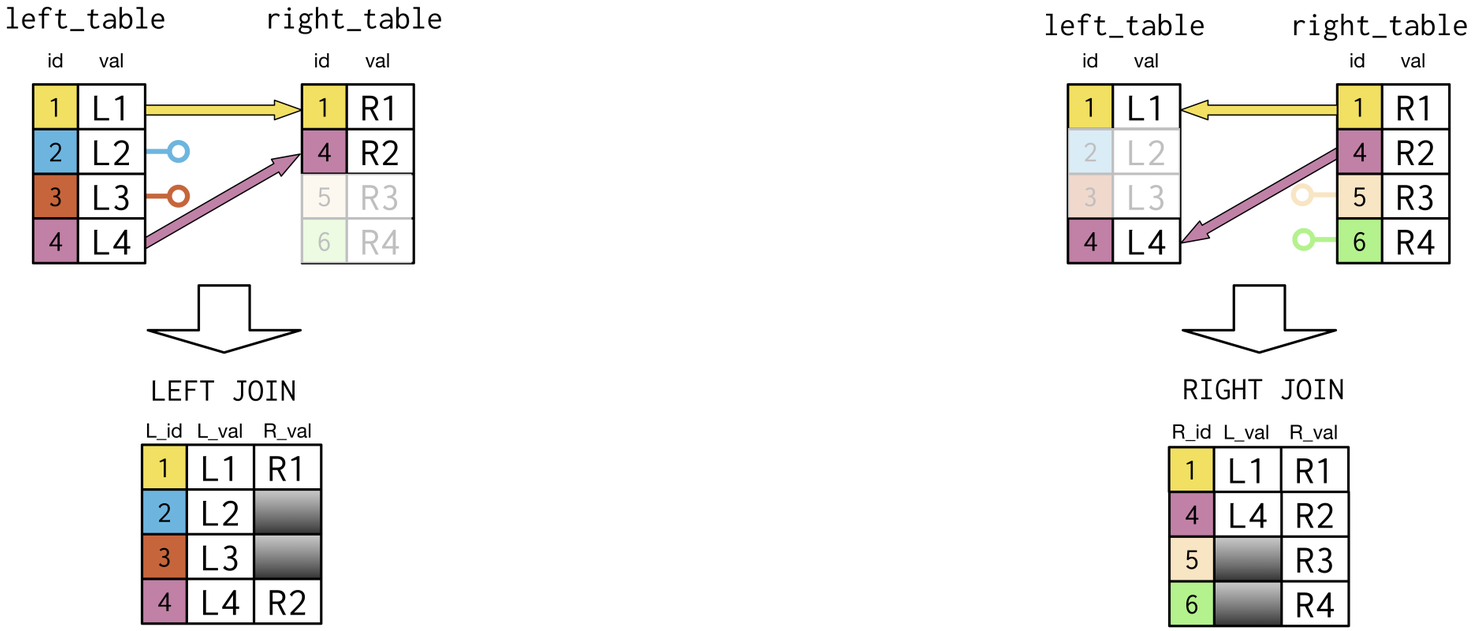
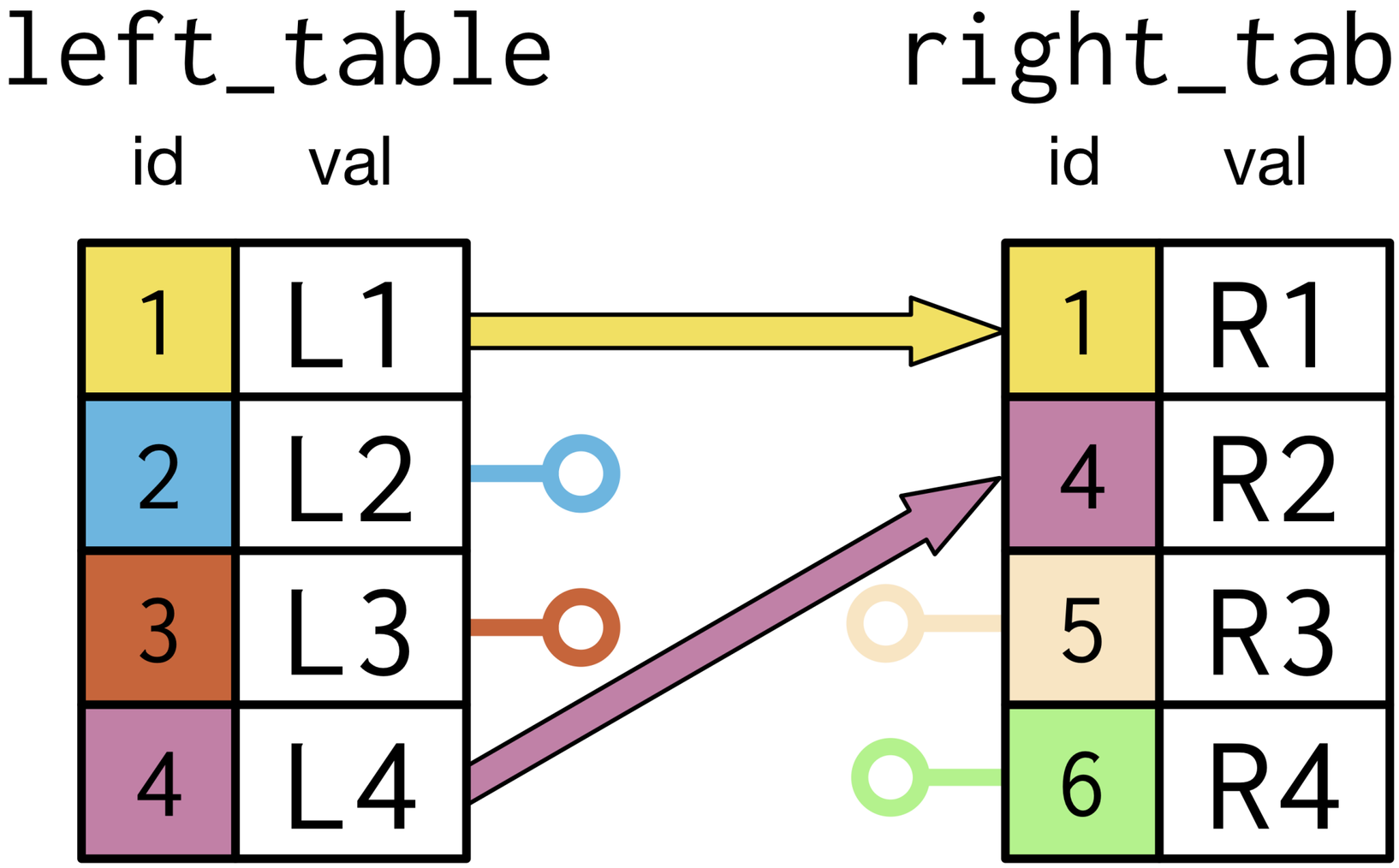
INNER JOIN vs LEFT JOIN



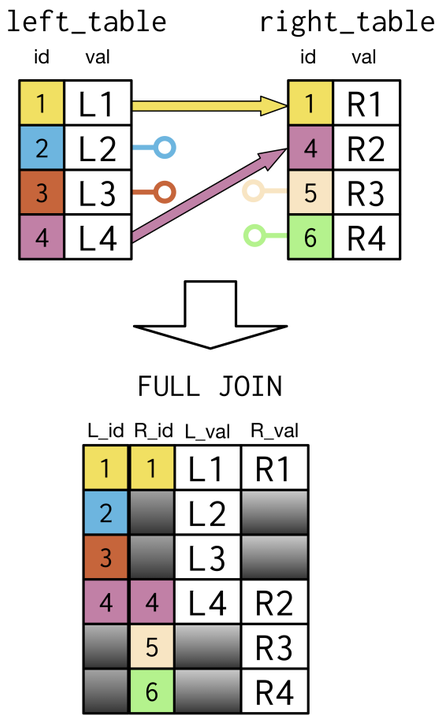


LEFT JOIN vs RIGHT JOIN




left_table
id
val
1
L1
2
L2
3
L3
4
L4
right_table
id
val
1
R1
4
R2
5
R3
6
R4

FULL JOIN diagram




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

FULL JOIN example using leaders database

```
SELECT p1.country AS pm_co, p2.country AS pres_co,
    prime_minister, president
```

FULL JOIN example using leaders database

```
SELECT p1.country AS pm_co, p2.country AS pres_co,
    prime_minister, president
FROM prime_ministers AS p1
```

FULL JOIN example using leaders database

```
SELECT p1.country AS pm_co, p2.country AS pres_co,
    prime_minister, president
FROM prime_ministers AS p1
FULL JOIN presidents AS p2
```

FULL JOIN example using leaders database

```
SELECT p1.country AS pm_co, p2.country AS pres_co,
    prime_minister, president
FROM prime_ministers AS p1
FULL JOIN presidents AS p2
ON p1.country = p2.country;
```

FULL JOIN example results using leaders

pm_co	pres_co	prime_minister	president
Egypt	Egypt	Sherif Ismail	Abdel Fattah el-Sisi
Portugal	Portugal	Antonio Costa	Marcelo Rebelo de Sousa
Vietnam	Vietnam	Nguyen Xuan Phuc	Tran Dai Quang
Haiti	Haiti	Jack Guy Lafontant	Jovenel Moise
India		Narendra Modi	
Australia		Malcolm Turnbull	
Norway		Erna Solberg	
Brunei		Hassanal Bolkiah	
Oman		Qaboos bin Said al Said	
Spain		Mariano Rajoy	
	Uruguay		Jose Mujica
	Chile		Michelle Bachelet
	Liberia		Ellen Johnson Sirleaf

JOINING DATA IN SQL

CROSSing the Rubicon

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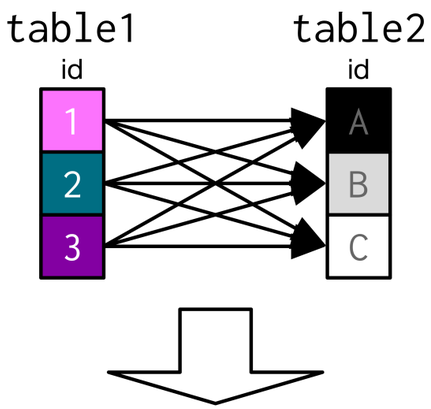

CROSS JOIN

id1	id2
1	A
1	B
1	C
2	A
2	B
2	C
3	A
3	B
3	C

Pairing prime ministers with presidents

```
SELECT prime_minister, president
FROM prime_ministers AS p1
CROSS JOIN presidents AS p2
WHERE p1.continent IN ('North America', 'Oceania');
```

```
+--------------------+--------------------------+
| prime_minister     | president                |
|--------------------+--------------------------|
| Jack Guy Lafontant | Abdel Fattah el-Sisi     |
| Malcolm Turnbull   | Abdel Fattah el-Sisi     |
| Jack Guy Lafontant | Marcelo Rebelo de Sousa  |
| Malcolm Turnbull   | Marcelo Rebelo de Sousa  |
| Jack Guy Lafontant | Jovenel Moise            |
| Malcolm Turnbull   | Jovenel Moise            |
| Jack Guy Lafontant | Jose Mujica              |
| Malcolm Turnbull   | Jose Mujica              |
| Jack Guy Lafontant | Ellen Johnson Sirleaf    |
| Malcolm Turnbull   | Ellen Johnson Sirleaf    |
| Jack Guy Lafontant | Michelle Bachelet        |
| Malcolm Turnbull   | Michelle Bachelet        |
| Jack Guy Lafontant | Tran Dai Quang           |
| Malcolm Turnbull   | Tran Dai Quang           |
+--------------------+--------------------------+
```

JOINING DATA IN SQL

Let's practice!