Types of SQL joins:

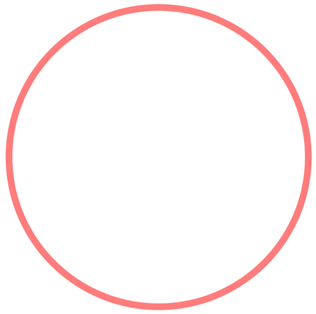


Table A

id	fruit_name
1	apple
2	banana
4	kiwi
3	orange

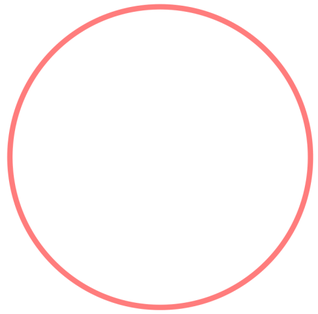


Table B

id	fruit_name
A	apple
S	strawberry
O	orange
G	grapes
W	watermelon

Inner Join

Returns all records from multiple tables after comparing values present in the **common** column.

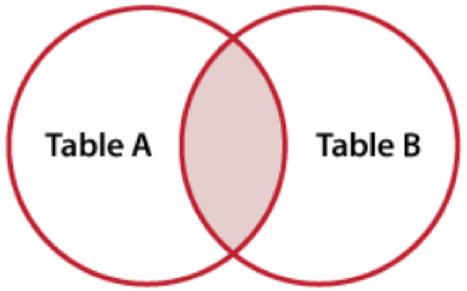


Table A

id	fruit_name
1	apple
2	banana
4	kiwi
3	orange

Table B

id	fruit_name
A	apple
S	strawberry
O	orange
G	grapes
W	watermelon

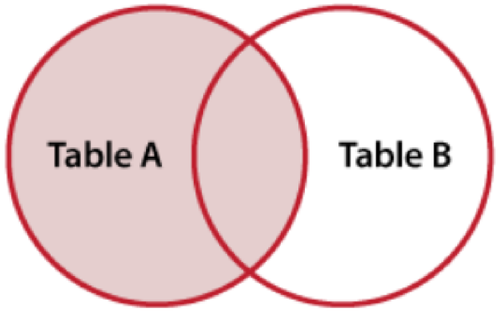
id	fruit_name	id	fruit_name
1	apple	A	apple
3	orange	O	orange

Syntax:

```
select * from table_a a
inner join table_b b
on a.fruit_name=b.fruit_name;
```

Left Outer Join

Returns all rows from left table and matching rows from right table. Displays **null** for the columns related table where it does not find the matching records.



Syntax:

```
select * from table_a a
left outer join table_b b
on a.fruit_name=b.fruit_name;
```

Table A

id	fruit_name
1	apple
2	banana
4	kiwi
3	orange

Table B

id	fruit_name
A	apple
S	strawberry
O	orange
G	grapes
W	watermelon

id	fruit_name	id	fruit_name
1	apple	A	apple
2	banana	NULL	NULL
4	kiwi	NULL	NULL
3	orange	O	orange

Right Outer Join

Returns all rows from right table and matching rows from left table. Displays **null** for the columns related table where it does not find the matching records.

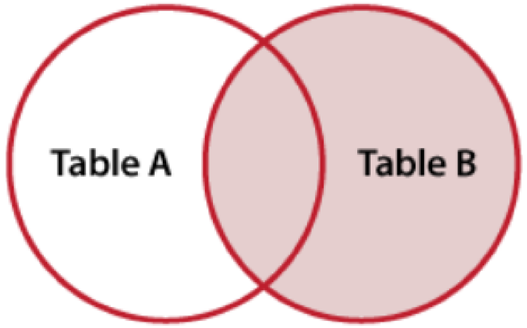


Table A

id	fruit_name
1	apple
2	banana
4	kiwi
3	orange

Table B

id	fruit_name
A	apple
S	strawberry
O	orange
G	grapes
W	watermelon

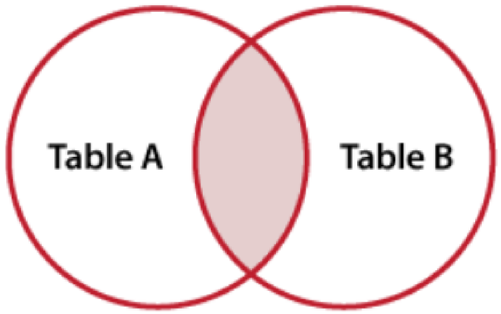
id	fruit_name	id	fruit_name
1	apple	A	apple
NULL	NULL	S	strawberry
3	orange	O	orange
NULL	NULL	G	grapes
NULL	NULL	W	watermelon

Syntax:

```
select * from table_a a
right outer join table_b b
on a.fruit_name=b.fruit_name;
```

Natural Join

Natural join returns automatically joins columns of one table with another table based on common column
(having same name and datatype).



Syntax:

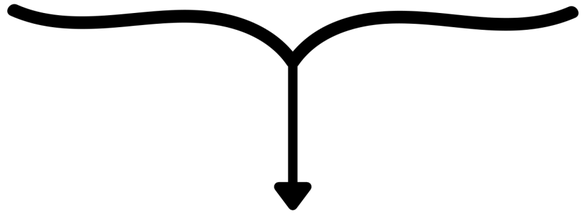
select * from table_a natural join table_b;

Table A

id	fruit_name	category
1	apple	fruit
2	banana	fruit
3	tomato	vegetable
4	kiwi	fruit

Table B

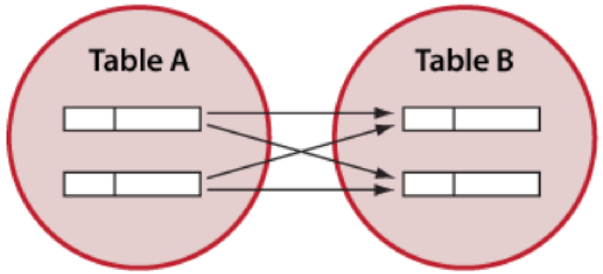
fruit_name	category
apple	fruit
strawberry	fruit
tomato	vegetable
banana	fruit
watermelon	fruit



fruit_name	category	id
apple	fruit	1
tomato	vegetable	3
banana	fruit	2

Cross Join

A coss join is a Cartesian product, which join each row of one table with each row of of the other table.



Syntax:

select * from table_a cross join table_b;

Table A

id	fruit_name
1	apple
2	banana
4	kiwi
3	orange

Table B

id	fruit_name
A	apple
S	strawberry
O	orange
G	grapes
W	watermelon

id	fruit_name	id	fruit_name
3	orange	A	apple
4	kiwi	A	apple
2	banana	A	apple
1	apple	A	apple
3	orange	S	strawberry
4	kiwi	S	strawberry
2	banana	S	strawberry
1	apple	S	strawberry
3	orange	O	orange
4	kiwi	O	orange
2	banana	O	orange
1	apple	O	orange
3	orange	G	grapes
4	kiwi	G	grapes
2	banana	G	grapes
1	apple	G	grapes
3	orange	W	watermelon
4	kiwi	W	watermelon
2	banana	W	watermelon
1	apple	W	watermelon