SQL

Inner Join

what is it?

Use an INNER join, or just a JOIN, when you want to find the match between two tables.

You need to have a column on both tables that you join ON, and that's where the match happens. Any results where there is not a match are discarded.

Orders Table		Inventory Table		Result	
order_item		inventory_item		order_item	inventory_item
Nails		Nails		Nails	Nails
Hammer		Hammer		Hammer	Hammer
Screws	+	Screws	=	Screws	Screws
Pliers		Tool cabinet			
Blow torch		Nail gun			

```sql
select
  o.order_item,
  i.inventory_item
from
  orders o
join
  inventory i
on
  o.order_item = i.inventory_item
```

SQL

Left Join

what is it?

Use a LEFT JOIN when you want to find a match between two tables, but also show a NULL where there is no match from the right table.

A RIGHT JOIN does the same but in reverse.Like the INNER JOIN, you need a column to join ON. Unlike the INNER JOIN, a NULL is used to show there is no match between the two tables.

Orders Table	Inventory Table		Result	
order_item	inventory_item		order_item	inventory_item
Nails	Nails		Nails	Nails
Hammer	Hammer		Hammer	Hammer
Screws	+ Screws	=	Screws	Screws
Pliers	Tool cabinet		Pliers	NULL
Blow torch	Nail gun		Blow torch	NULL

```
select
  o.order_item,
  i.inventory_item
from
  orders o
left join
  inventory i
on
  o.order_item = i.inventory_item
```

SQL

Cross Join

what is it?

A CROSS JOIN joins everything with everything. There is no need to provide a column to join on, and it can result in a very big data set, (and a really big image so you'll have to use your imagination when reviewing the image below).

Proceed with caution.

Orders Table	Inventory Table		Result	
order_item	inventory_item		order_item	inventory_item
Nails	Nails		Nails	Nails
Hammer	Hammer		Nails	Hammer
Screws	+ Screws	=	Nails	Screws
Pliers	Tool cabinet		Nails	Tool cabinet
Blow torch	Nail gun		Nails	Nail gun
			Hammer	Nails
			Hammer	Hammer
			Hammer	Screws
			Hammer	Tool cabinet
			Hammer	Nail gun

•••

```
select
  o.order_item,
  i.inventory_item
from
  orders o
cross join
  inventory i
```

SQL

Union

what is it?

Using a UNION combines the result of two queries into one column and removes duplicates.

If your query has multiple columns, they need to be in the same order to complete the UNION.

Orders Table		Inventory Table		Result
order_item		**inventory_item**		
Nails		Nails		Nails
Hammer		Hammer		Hammer
Screws	+	Screws	=	Screws
Pliers		Tool cabinet		Pliers
Blow torch		Nail gun		Blow torch
				Tool cabinet
				Nail gun

```
select *
from
  orders
union
select *
from
  inventory
```

SQL

Union all

what is it?

The UNION ALL combines the results of two queries the same as a UNION but keeps the duplicates in the result.

Orders Table	Inventory Table	Result
order_item	inventory_item	
Nails	Nails	Nails
Hammer	Hammer	Hammer
Screws +	Screws =	Screws
Pliers	Tool cabinet	Pliers
Blow torch	Nail gun	Blow torch
		Nails
		Hammer
		Screws
		Tool cabinet
		Nail gun

```
select *
from
  orders
union all
select *
from
  inventory
```