

Databases

Introduction to SQL

Join

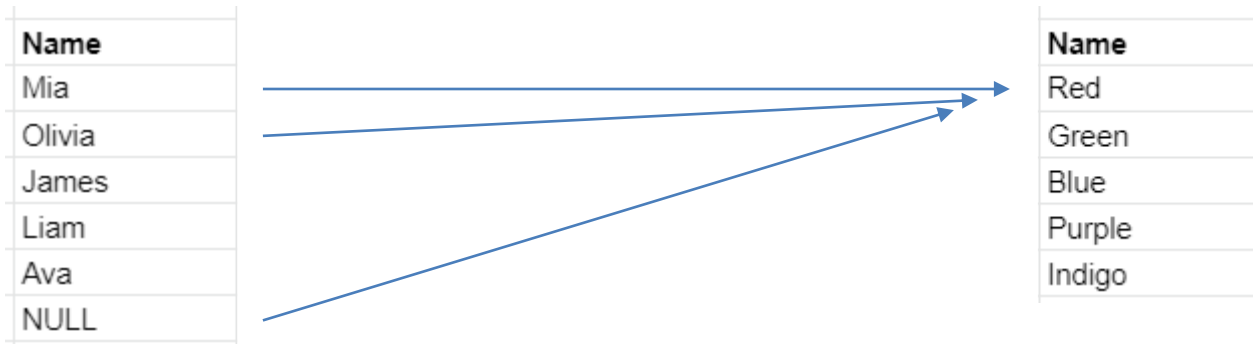
Name	FavoriteColor
Mia	Red
Olivia	Red
James	Green
Liam	Blue
Ava	<i>NULL</i>
<i>NULL</i>	Red

Join

Name
Mia
Olivia
James
Liam
Ava
NULL

Name
Red
Green
Blue
Purple
Indigo

Join

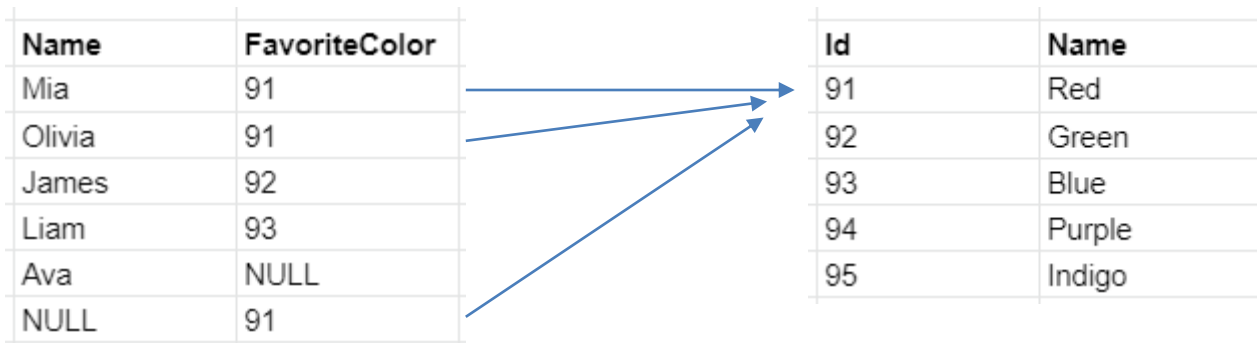


Join

Name	FavoriteColor
Mia	91
Olivia	91
James	92
Liam	93
Ava	NULL
NULL	91

Id	Name
91	Red
92	Green
93	Blue
94	Purple
95	Indigo

Join



```
create table Person(  
    Name varchar(50),  
    FavoriteColor int  
)
```

Join

```
create table Color(  
    Id int,  
    Name varchar(50)  
)
```


Join

```
insert into Color  
values
```

```
(91, 'Red'),  
(92, 'Green'),  
(93, 'Blue'),  
(94, 'Purple'),  
(95, 'Indigo')
```

Join

Name	FavoriteColor
Mia	91
Olivia	91
James	92
Liam	93
Ava	NULL
NULL	91

Id	Name
91	Red
92	Green
93	Blue
94	Purple
95	Indigo

Join

```
select *  
from Person  
join Color  
on Person.FavoriteColorId = Color.Id
```

Name	FavoriteColorId	Id	Name
Mia	91	91	Red
Olivia	91	91	Red
James	92	92	Green
Liam	93	93	Blue
NULL	91	91	Red

Group By

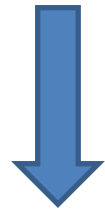
Name	Country	Income
Mia	Sweden	20000
James	Sweden	25000
Liam	Sweden	28000
Ava	Iceland	60000
Olivia	Iceland	50000
Lisa	Spain	10000

Group By

	Name	Country	Income	
	Mia	Sweden	20000	
	James	Sweden	25000	
	Liam	Sweden	28000	
	Ava	Iceland	60000	
	Olivia	Iceland	50000	
	Lisa	Spain	10000	

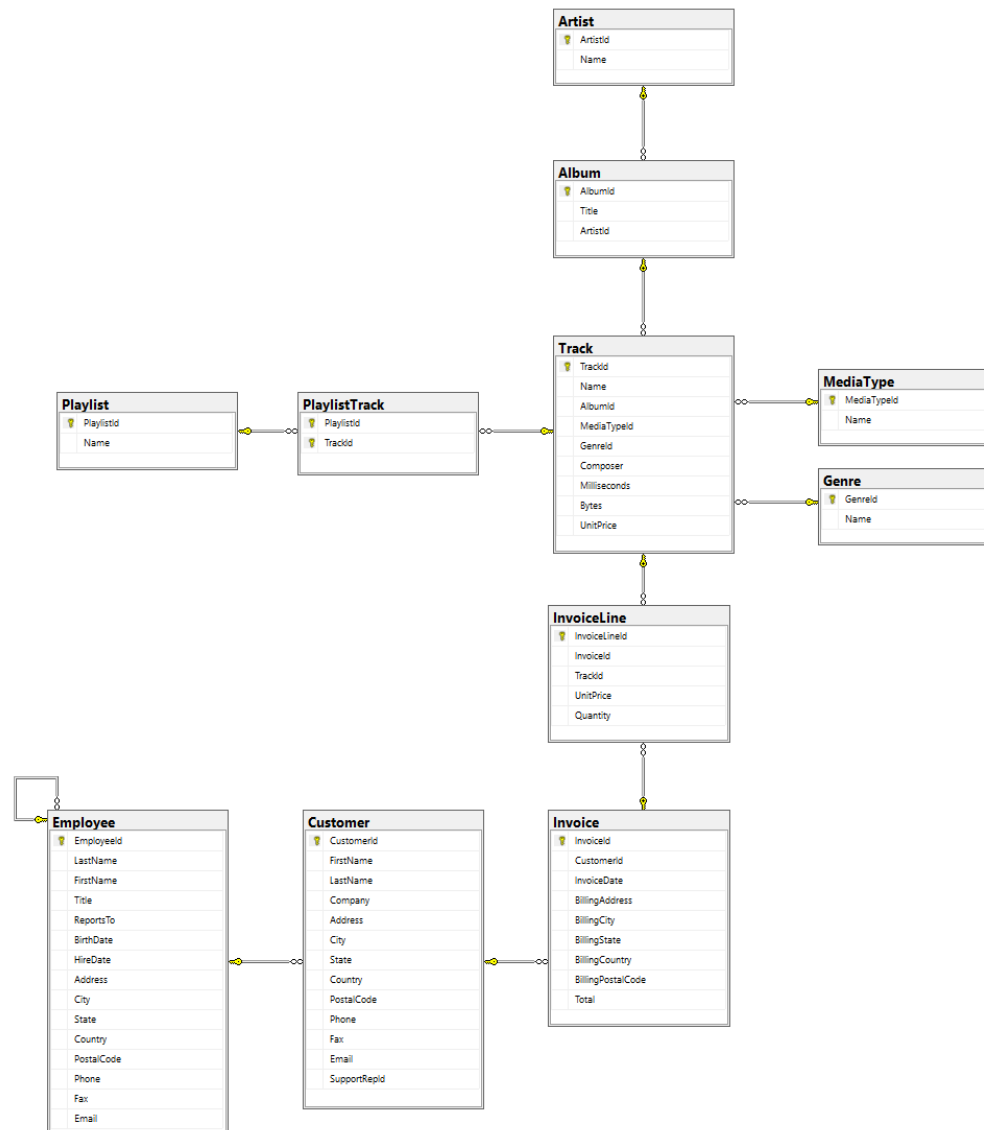
Group By

```
SELECT Country, AVG(Income) as Average, count(*) as Inhabitants  
FROM Person  
GROUP BY Country
```



Country	Average	Inhabitants
Iceland	55000	2
Spain	10000	1
Sweden	24333	3

Chinook



Why databases?

Storing
Consistent
Performance
Many users
Robust

SQL

Standardized
Read, Update, Remove
Create tables

Normalize

Split tables

Join

Combining tables

Keys

Consistent data

Group by

Sum

Average