

GROUP BY

GROUP BY

Aggregate functions (like SUM) often need an added GROUP BY functionality.

GROUP BY was added to SQL because aggregate functions (like SUM) return the aggregate of all column values every time they are called and without the GROUP BY function it was impossible to find the sum for each individual group of column values.

The syntax for the GROUP BY function is:

```
SELECT column, SUM(column) FROM table GROUP BY column
```

GROUP BY Example

This "Sales" table:

Company	Amount
Mesh Digital	5500
I'm a Celeb	4500
Mesh Digital	7100

And this SQL:

```
SELECT Company, SUM(Amount) FROM Sales
```

Returns this result:

Company	SUM(Amount)
Mesh Digital	17100
I'm a Celeb	17100
Mesh Digital	17100

The above code is invalid because the column returned is not part of an aggregate. A GROUP BY clause will solve this problem:

```
SELECT Company, SUM(Amount) FROM Sales GROUP BY Company
```

Returns this result:

Company	Amount
Mesh Digital	12600
I'm a Celeb	4500

GROUP BY

HAVING

HAVING was added to SQL because the WHERE keyword could not be used against aggregate functions (like SUM) and without HAVING it would be impossible to test for result conditions.

The syntax for the HAVING function is:

```
SELECT column, SUM(column) FROM table GROUP BY column  
HAVING SUM(column) condition value
```

HAVING Example

This "Sales" table:

Company	Amount
Mesh Digital	5500
I'm a Celeb	4500
Mesh Digital	7100

This SQL:

```
SELECT Company, SUM(Amount) FROM Sales GROUP BY Company  
HAVING SUM(Amount) > 10000
```

Returns this result:

Company	Amount
Mesh Digital	12600