PostgreSQL Aggregation

Aggregation

Student data

id	name	website	github_username	points	gender	graduated	cohort_id
1	Kyle	http://kyleluck.com/	kyleluck	5	M	FALSE	1
2	Anthony	NULL	Athompsonjr26	7	M	FALSE	1
3	Matt	http://matthewbrimmer.com/	mbrimmer83	6	M	FALSE	1
4	Kirk	NULL	NULL	9	M	FALSE	2
5	Carolyn	NULL	NULL	12	F	FALSE	2
6	Dominic	NULL	NULL	7	M	FALSE	2
8	Johnny	http://github.johnnycopes.io	hunetsohueo	5	M	FALSE	NULL

The **count** function

```
1 select count(*) from student;
```

Load Query… Save Query… Cancel Execute Statement

count
7

Number of Students that have a website?

id	name	website	github_username	points	gender	graduated	cohort_id
1	Kyle	http://kyleluck.com/	kyleluck	5	M	FALSE	1
2	Anthony	NULL	Athompsonjr26	7	M	FALSE	1
3	Matt	http://matthewbrimmer.com/	mbrimmer83	6	M	FALSE	1
4	Kirk	NULL	NULL	9	M	FALSE	2
5	Carolyn	NULL	NULL	12	F	FALSE	2
6	Dominic	NULL	NULL	7	M	FALSE	2
8	Johnny	http://github.johnnycopes.io	hunetsohueo	5	M	FALSE	NULL

Number of Students that have a website?

```
1 select
2     count(website)
3 from student;
```

Load Query... Save Query... Cancel Execute Statement

count
3

The `sum` function

```
1 select sum(points) from student;
```

Load Query… Save Query… Cancel Execute Statement

sum
51

More functions

- avg
- max
- min

group by

```
1 select cohort_id, sum(points) from student group by cohort_id;
```

Load Query... Save Query... Cancel Execute Statement

cohort_id	sum
NULL	5
1	18
2	28

group by

```
1 select cohort_id,
2     sum(points) as total_points,
3     avg(points) as average_points,
4     count(*) as num_students
5 from student group by cohort_id;
```

Load Query... Save Query... Cancel Execute Statement

cohort_id	total_points	average_points	num_students
NULL	5	5	1
1	18	6	3
2	28	9.3333333333333333	3

order by

```
1 select * from student order by points;
```

Load Query… Save Query… Cancel Execute Statement

id	name	website	github_username	points	gender	graduated	cohort_id
1	Kyle	http://kyleluck.com/	kyleluck	1	M	TRUE	1
8	Johnny	http://github.johnnycopes.io	hunetsohueo	6	M	FALSE	NULL
3	Matt	http://matthewbrimmer.com/	mbrimmer83	7	M	FALSE	1
2	Anthony	NULL	Athompsonjr26	8	M	FALSE	1
6	Dominic	NULL	NULL	8	M	FALSE	2
4	Kirk	NULL	NULL	10	M	FALSE	2
5	Carolyn	NULL	NULL	13	F	FALSE	2

returns same result set, by with a specified order

Descending Order (desc)

```
1 select * from student order by points desc;
```

Load Query… Save Query… Cancel Execute Statement

id	name	website	github_username	points	gender	graduated	cohort_id
5	Carolyn	NULL	NULL	13	F	FALSE	2
4	Kirk	NULL	NULL	10	M	FALSE	2
2	Anthony	NULL	Athompsonjr26	8	M	FALSE	1
6	Dominic	NULL	NULL	8	M	FALSE	2
3	Matt	http://matthewbrimmer.com/	mbrimmer83	7	M	FALSE	1
8	Johnny	http://github.johnnycopes.io	hunetsohueo	6	M	FALSE	NULL
1	Kyle	http://kyleluck.com/	kyleluck	1	M	TRUE	1

Order by more than one column

```
1 select * from student order by cohort_id, points desc;
```

Load Query... Save Query... Cancel Execute Statement

id	name	website	github_username	points	gender	graduated	cohort_id
2	Anthony	NULL	Athompsonjr26	8	M	FALSE	1
3	Matt	http://matthewbrimmer.com/	mbrimmer83	7	M	FALSE	1
1	Kyle	http://kyleluck.com/	kyleluck	1	M	TRUE	1
5	Carolyn	NULL	NULL	13	F	FALSE	2
4	Kirk	NULL	NULL	10	M	FALSE	2
6	Dominic	NULL	NULL	8	M	FALSE	2
8	Johnny	http://github.johnnycopes.io	hunetsohueo	6	M	FALSE	NULL

limit

```
select * from student order by points desc limit 5;
```

Load Query... Save Query... Cancel Execute Statement

id	name	website	github_username	points	gender	graduated	cohort_id
5	Carolyn	NULL	NULL	13	F	FALSE	2
4	Kirk	NULL	NULL	10	M	FALSE	2
2	Anthony	NULL	Athompsonjr26	8	M	FALSE	1
6	Dominic	NULL	NULL	8	M	FALSE	2
3	Matt	http://matthewbrimmer.com/	mbrimmer83	7	M	FALSE	1

limit a result set to a fixed number of rows. Combine with order by descending to get top results

offset

```
1 select * from student order by points desc limit 5 offset 1;
```

Load Query… Save Query… Cancel Execute Statement

id	name	website	github_username	points	gender	graduated	cohort_id
4	Kirk	NULL	NULL	10	M	FALSE	2
2	Anthony	NULL	Athompsonjr26	8	M	FALSE	1
6	Dominic	NULL	NULL	8	M	FALSE	2
3	Matt	http://matthewbrimmer.com/	mbrimmer83	7	M	FALSE	1
8	Johnny	http://github.johnnycopes.io	hunetsohueo	6	M	FALSE	NULL