

Базы данных. SQL. GROUP, HAVING

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R.class

Сложная тема

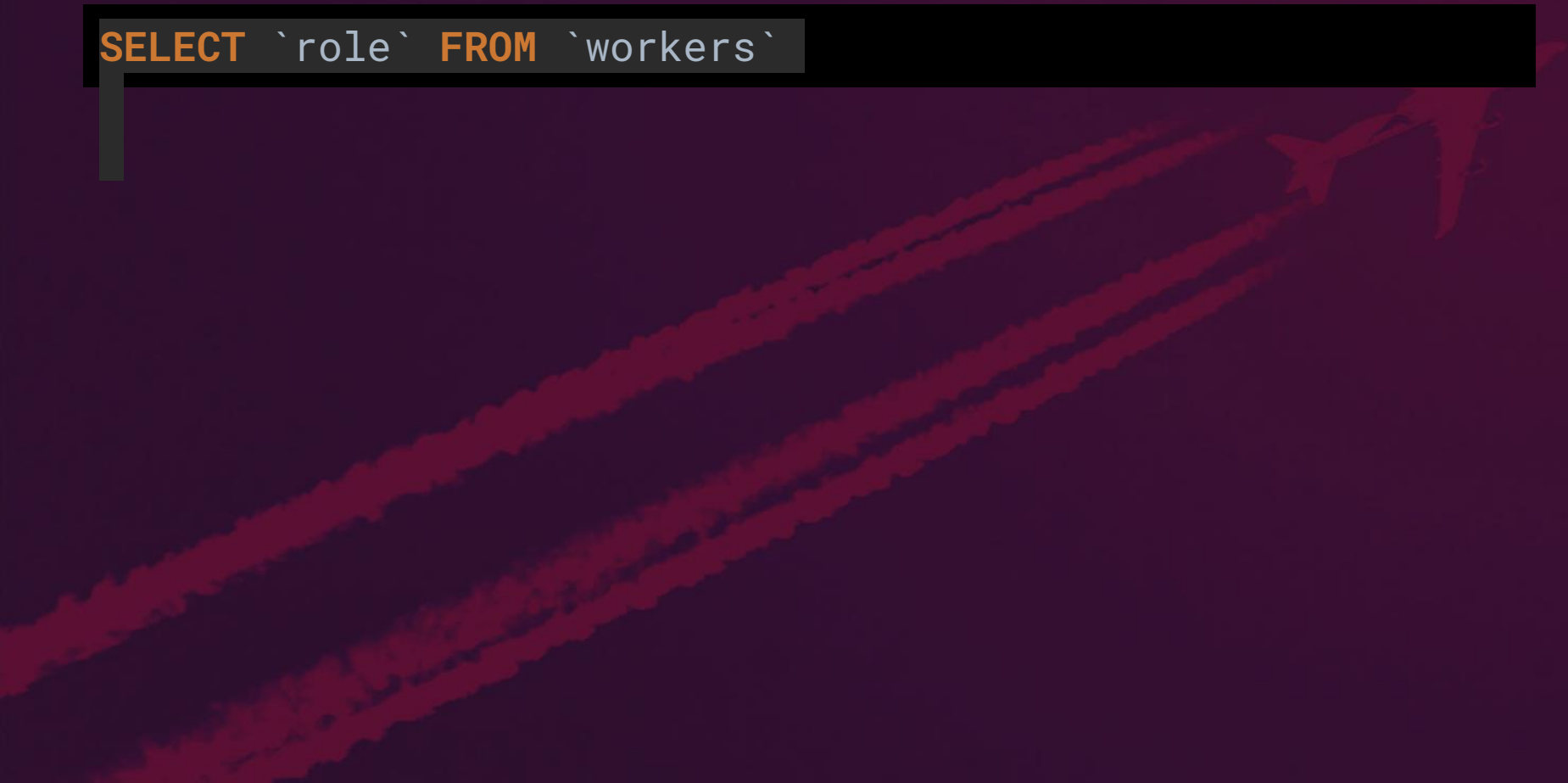
ООО “Авто-плюс”

```
SELECT * FROM workers
```

id	name	role	salary	birthday
1	Иванов Семен	Директор	100000	1985-09-21
2	Петрова Светлана	Бухгалтер	50000	1994-02-16
3	Жуков Роман	Разнорабочий	15000	1990-11-23
4	Рогов Дмитрий	Программист	20000	1988-02-13
5	Баранов Петр	Автомеханик	22000	1996-09-13
6	Мигунов Олег	Разнорабочий	16000	1992-03-12
7	Глазунов Аркадий	Автомеханик	21000	1994-06-04

DISTINCT

```
SELECT `role` FROM `workers`
```



DISTINCT

```
SELECT `role` FROM `workers`
```

role
Директор
Бухгалтер
Разнорабочий
Программист
Автомеханик
Разнорабочий
Автомеханик

DISTINCT

```
SELECT DISTINCT `role` FROM `workers`
```



DISTINCT

```
SELECT DISTINCT `role` FROM `workers`
```

role
Директор
Бухгалтер
Разнорабочий
Программист
Автомеханик

DISTINCT

```
SELECT COUNT(`role`) FROM `workers`
```

COUNT(`role`)
7

DISTINCT

```
SELECT COUNT(DISTINCT `role`) FROM `workers`
```

COUNT(DISTINCT `role`)

5

GROUP BY

```
SELECT `role` FROM `workers` GROUP BY `role`
```



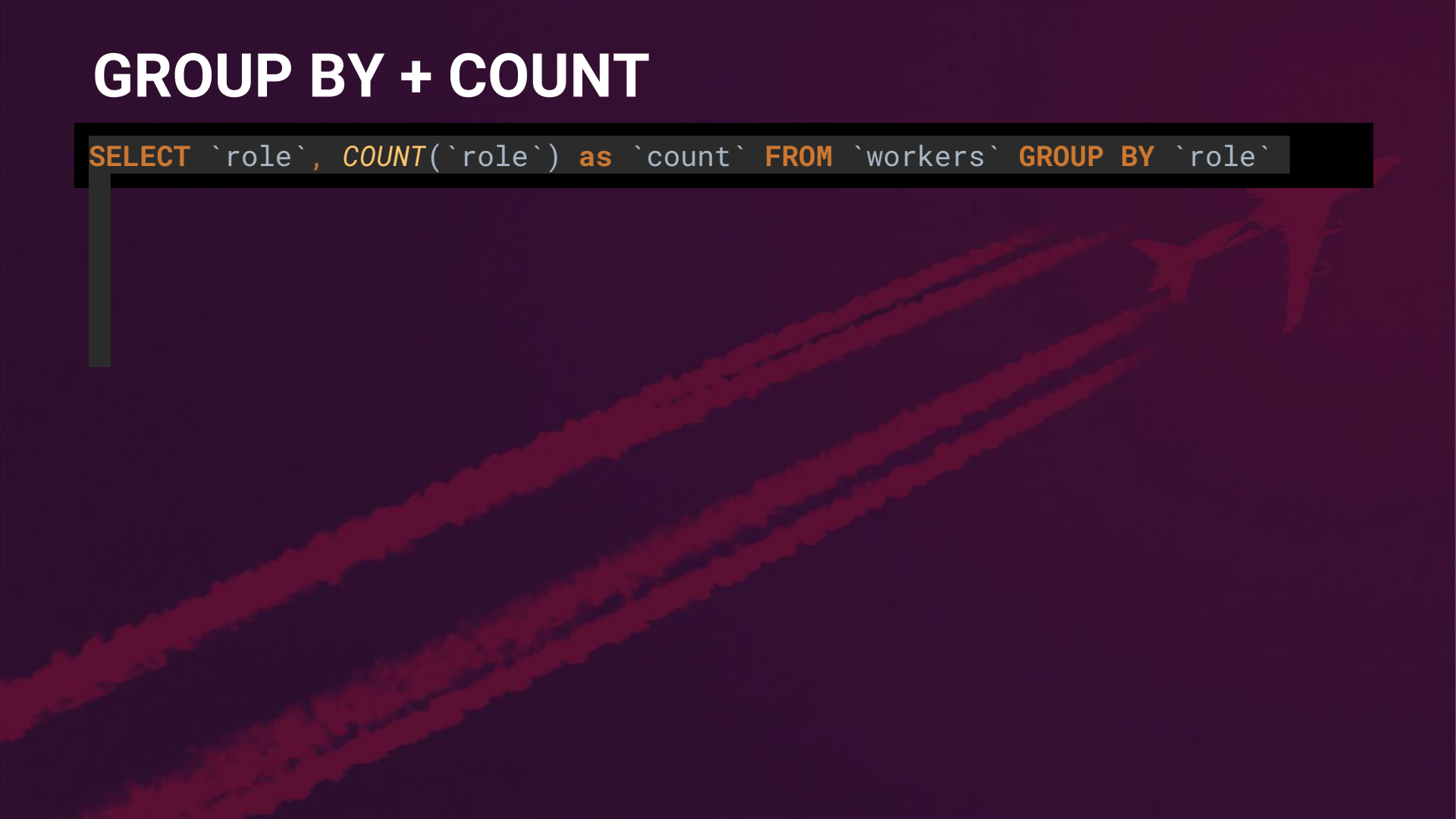
GROUP BY

```
SELECT `role` FROM `workers` GROUP BY `role`
```

role
Директор
Бухгалтер
Разнорабочий
Программист
Автомеханик

GROUP BY + COUNT

```
SELECT `role`, COUNT(`role`) as `count` FROM `workers` GROUP BY `role`
```



GROUP BY + COUNT

```
SELECT `role`, COUNT(`role`) as `count` FROM `workers` GROUP BY `role`
```

role	count
Автомеханик	2
Бухгалтер	1
Директор	1
Программист	1
Разнорабочий	2

GROUP BY + SUM

```
SELECT `role`, SUM(`salary`) as `sum` FROM `workers` GROUP BY `role`
```



GROUP BY + SUM

```
SELECT `role`, SUM(`salary`) as `sum` FROM `workers` GROUP BY `role`
```

role	sum
Автомеханик	43000
Бухгалтер	50000
Директор	100000
Программист	20000
Разнорабочий	31000

GROUP BY + WHERE

```
SELECT `role`, SUM(`salary`) as `sum`  
FROM `workers`  
WHERE `id` > 2  
GROUP BY `role`
```

GROUP BY + WHERE

```
SELECT `role`, SUM(`salary`) as `sum`  
FROM `workers`  
WHERE `id` > 2  
GROUP BY `role`
```

role	sum
Автомеханик	43000
Программист	20000
Разнорабочий	31000

GROUP BY + WHERE

```
SELECT `role`, AVG(`salary`) as `avg_salary`  
FROM `workers`  
WHERE `avg_salary` > 20000  
GROUP BY `role`
```

GROUP BY + WHERE

```
SELECT `role`, AVG(`salary`) as `avg_salary`  
FROM `workers`  
WHERE `avg_salary` > 20000  
GROUP BY `role`
```

Unknown column 'avg_salary' in 'where clause'

WHERE не работает с групповыми операциями

GROUP BY + HAVING

```
SELECT `role`, AVG(`salary`) as `avg_salary`  
FROM `workers`  
GROUP BY `role`  
HAVING `avg_salary` > 20000  
ORDER BY `avg_salary` DESC
```

HAVING – работает как WHERE только для групповых операций, работает после группировки

GROUP BY + HAVING

```
SELECT `role`, AVG(`salary`) as `avg_salary`  
FROM `workers`  
GROUP BY `role`  
HAVING `avg_salary` > 20000  
ORDER BY `avg_salary` DESC
```

role	avg_salary
Директор	100000.0000
Бухгалтер	50000.0000
Автомеханик	21500.0000

GROUP BY

```
SELECT `role`, `name`, AVG(`salary`) as `avg_salary`  
FROM `workers`  
GROUP BY `role`
```

GROUP BY

```
SELECT `role`, `name`, AVG(`salary`) as `avg_salary`  
FROM `workers`  
GROUP BY `role`
```

Expression #2 of SELECT list is not in GROUP BY clause and contains nonaggregated column 'test.workers.name' which is not functionally dependent on columns in GROUP BY clause; this is incompatible with sql_mode=only_full_group_by

MySQL не знает какое имя выбрать, так как два «Автомеханика» с разными именами, какое имя выбрать ? неясно

GROUP BY

```
SELECT `role`, ANY_VALUE(`name`) as `name`, AVG(`salary`) as `avg_salary`  
FROM `workers`  
GROUP BY `role`
```

role	name	avg_salary
Директор	Иванов Семен	100000.0000
Бухгалтер	Петрова Светлана	50000.0000
Автомеханик	Баранов Петр	21500.0000
Программист	Рогов Дмитрий	20000.0000
Разнорабочий	Жуков Роман	15500.0000

ANY_VALUE – выбери любое , все равно какое

000 “Маркет”

```
SELECT * FROM prizes
```

name	project	prize
Иван	ИнвестКонсалт	10000
Иван	НормаТв	2000
Сергей	ИнвестКонсалт	1500
Роман	НормаТв	3000
Сергей	НормаТв	2000
Илья	НормаТв	1800
Иван	ИнвестКонсалт	7000
Илья	НормаТв	2000

GROUP BY Multiple

```
SELECT `name`, `project`, SUM(`prize`) as `total`  
FROM `prizes`  
GROUP BY `name`, `project`
```

GROUP BY Multiple

```
SELECT `name`, `project`, SUM(`prize`) as `total`  
FROM `prizes`  
GROUP BY `name`, `project`
```

name	project	total
Иван	ИнвестКонсалт	17000
Иван	НормаТв	2000
Илья	НормаТв	3800
Роман	НормаТв	3000
Сергей	ИнвестКонсалт	1500
Сергей	НормаТв	2000

GROUP BY Multiple

```
SELECT `project`, `name`, SUM(`prize`) as `total`  
FROM `prizes`  
GROUP BY `project`, `name`
```

GROUP BY Multiple

```
SELECT `project`, `name`, SUM(`prize`) as `total`  
FROM `prizes`  
GROUP BY `project`, `name`
```

project	name	total
ИнвестКонсалт	Иван	17000
ИнвестКонсалт	Сергей	1500
НормаТв	Иван	2000
НормаТв	Илья	3800
НормаТв	Роман	3000
НормаТв	Сергей	2000

Bcë :)

