

# ФИЛЬТРАЦИЯ ДАННЫХ В SQL: WHERE

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УЧЕБНЫЙ КУРС «ОСНОВЫ SQL»

## ВЫБОР СТОЛБЦОВ В SELECT

```
SELECT name, appearances  
FROM superheroes
```

# ВЫБОР СТОЛБЦОВ В SELECT

id	name	align	eye	hair	gender	appearances	year	universe
1	Spider-Man (Peter Parker)	Good Characters	Hazel Eyes	Brown Hair	Male Characters	4043	1962	marvel
2	Captain America (Steven Rogers)	Good Characters	Blue Eyes	White Hair	Male Characters	3360	1941	marvel
3	Wolverine (James \"Logan\" Howlett)	Neutral Characters	Blue Eyes	Black Hair	Male Characters	3061	1974	marvel
4	Iron Man (Anthony \"Tony\" Stark)	Good Characters	Blue Eyes	Black Hair	Male Characters	2961	1963	marvel
5	Thor (Thor Odinson)	Good Characters	Blue Eyes	Blond Hair	Male Characters	2258	1950	marvel
6	Benjamin Grimm (Earth-616)	Good Characters	Blue Eyes	No Hair	Male Characters	2255	1961	marvel
7	Reed Richards (Earth-616)	Good Characters	Brown Eyes	Brown Hair	Male Characters	2072	1961	marvel
8	Hulk (Robert Bruce Banner)	Good Characters	Brown Eyes	Brown Hair	Male Characters	2017	1962	marvel
			...					

## ВЫБОР СТРОК В SELECT

```
SELECT *  
FROM superheroes  
WHERE gender = 'Female Characters'
```

# СУПЕРГЕРОИ ЖЕНЩИНЫ

id	name	align	eye	hair	gender	appearances	year	universe
12	Susan Storm (Earth-616)	Good Characters	Blue Eyes	Blond Hair	Female Characters	1713	1961	marvel
13	Ororo Munroe (Earth-616)	Good Characters	Blue Eyes	White Hair	Female Characters	1512	1975	marvel
17	Mary Jane Watson (Earth-616)	Good Characters	Green Eyes	Red Hair	Female Characters	1304	1965	marvel
24	Wanda Maximoff (Earth-616)	Good Characters	Green Eyes	Brown Hair	Female Characters	1161	1964	marvel
26	Janet van Dyne (Earth-616)	Good Characters	Blue Eyes	Auburn Hair	Female Characters	1120	1963	marvel
27	Jean Grey (Earth-616)	Good Characters	Green Eyes	Red Hair	Female Characters	1107	1963	marvel
28	Natalia Romanova (Earth-616)	Good Characters	Brown Eyes	Red Hair	Female Characters	1050	1964	marvel
31	May Reilly (Earth-616)	Good Characters	Blue Eyes	Grey Hair	Female Characters	1000	1962	marvel
			...					

## ВЫБОР СТРОК В SELECT

```
SELECT *  
FROM superheroes  
WHERE align = 'Reformed Criminals'
```

# СУПЕРГЕРОИ ПЕРЕВОСПИТАННЫЕ ПРЕСТУПНИКИ

id	name	align	eye	hair	gender	appearances	year	universe
5144	Owen Mercer (New Earth)	Reformed Criminals	Blue Eyes	Red Hair	Male Characters	78	2004	dc
6550	Paula von Gunther (New Earth)	Reformed Criminals	Blue Eyes	Blond Hair	Female Characters	5	1998	dc

# ОПЕРАТОРЫ СРАВНЕНИЯ В WHERE

Оператор	Назначение
=	Равно
<>, !=	Неравно
>	Больше
>=	Больше или равно
<	Меньше
<=	Меньше или равно
between	Значение находится в указанном диапазоне
in	Значение входит в список
like	Проверка строки на соответствие шаблону



## ИСПОЛЬЗОВАНИЕ BETWEEN В WHERE

```
SELECT *  
FROM superheroes  
WHERE year BETWEEN 2000 AND 2005
```

# СУПЕРГЕРОИ ПОЯВИВШИЕСЯ С 2000 ПО 2005

id	name	align	eye	hair	gender	appearances	year	universe
111	Maria Hill (Earth-616)	Good Characters	Brown Eyes	Black Hair	Female Characters	325	2005	marvel
140	Laura Kinney (Earth-616)	Good Characters	Green Eyes	Black Hair	Female Characters	265	2004	marvel
164	Robert Reynolds (Earth-616)	Neutral Characters	Blue Eyes	Blond Hair	Male Characters	240	2000	marvel
166	Santo Vaccarro (Earth-616)	Good Characters	White Eyes	No Hair	Male Characters	238	2003	marvel
174	Megan Gwynn (Earth-616)	Good Characters	Black Eyeballs	Pink Hair	Female Characters	229	2004	marvel
211	Victor Borkowski (Earth-616)	Good Characters	Brown Eyes	Black Hair	Male Characters	184	2003	marvel
217	Julian Keller (Earth-616)	Good Characters	Blue Eyes	Black Hair	Male Characters	179	2003	marvel
219	Celeste Cuckoo (Earth-616)	Good Characters	Blue Eyes	Blond Hair	Female Characters	177	2001	marvel
			...					

## ИСПОЛЬЗОВАНИЕ IN В WHERE

```
SELECT *  
FROM superheroes  
WHERE hair IN ('Strawberry Blond  
Hair', 'Red Hair', 'Auburn Hair')
```

# СУПЕРГЕРОИ С РЫЖИМИ ВОЛОСАМИ

id	name	align	eye	hair	gender	appearances	year	universe
15	Matthew Murdock (Earth-616)	Good Characters	Blue Eyes	Red Hair	Male Characters	1338	1338	marvel
17	Mary Jane Watson (Earth-616)	Good Characters	Green Eyes	Red Hair	Female Characters	1304	1965	marvel
26	Janet van Dyne (Earth-616)	Good Characters	Blue Eyes	Auburn Hair	Female Characters	1120	1963	marvel
27	Jean Grey (Earth-616)	Good Characters	Green Eyes	Red Hair	Female Characters	1107	1963	marvel
28	Natalia Romanova (Earth-616)	Good Characters	Brown Eyes	Red Hair	Female Characters	1050	1964	marvel
46	Norman Osborn (Earth-616)	Bad Characters	Blue Eyes	Auburn Hair	Male Characters	692	1964	marvel
47	Eugene Thompson (Earth-616)	Good Characters	Blue Eyes	Strawberry Blond Hair	Male Characters	689	1962	marvel
58	Patricia Walker (Earth-616)	Good Characters	Blue Eyes	Red Hair	Female Characters	550	1944	marvel
			...					

# ИСПОЛЬЗОВАНИЕ LIKE В WHERE

## ➤ Специальные символы в шаблонах LIKE

% - любое количество символов (включая 0)

\_ - ровно один символ

```
SELECT *  
FROM superheroes  
WHERE hair LIKE '%Blond%'
```

# СУПЕРГЕРОИ С БЕЛЫМИ ВОЛОСАМИ РАЗНЫХ ТИПОВ

id	name	align	eye	hair	gender	appearances	year	universe
5	Thor (Thor Odinson)	Good Characters	Blue Eyes	Blond Hair	Male Characters	2258	1950	marvel
10	Jonathan Storm (Earth-616)	Good Characters	Blue Eyes	Blond Hair	Male Characters	1934	1961	marvel
12	Susan Storm (Earth-616)	Good Characters	Blue Eyes	Blond Hair	Female Characters	1713	1961	marvel
14	Clinton Barton (Earth-616)	Good Characters	Blue Eyes	Blond Hair	Male Characters	1394	1964	marvel
47	Eugene Thompson (Earth-616)	Good Characters	Blue Eyes	Strawberry Blond Hair	Male Characters	689	1962	marvel
52	Daniel Rand (Earth-616)	Good Characters	Blue Eyes	Blond Hair	Male Characters	618	1974	marvel
66	Crystalia Amaquelin (Earth-616)	Good Characters	Green Eyes	Strawberry Blond Hair	Female Characters	512	1965	marvel
79	Johnathon Blaze (Earth-616)	Good Characters	Blue Eyes	Reddish Blond Hair	Male Characters	426	1972	marvel
			...					

# ЛОГИЧЕСКИЕ ОПЕРАЦИИ В WHERE

Операция	Назначение
AND	Логическое И
OR	Логическое ИЛИ
NOT	Логическое НЕ

## ИСПОЛЬЗОВАНИЕ AND В WHERE

```
SELECT *  
FROM superheroes  
WHERE gender = 'Female Characters'  
AND  
align = 'Bad Characters'
```



# ОТРИЦАТЕЛЬНЫЕ СУПЕРГЕРОИ ЖЕНЩИНЫ

id	name	align	eye	hair	gender	appearances	year	universe
99	Raven Darkholme (Earth-616)	Bad Characters	Yellow Eyes	Red Hair	Female Characters	371	1978	marvel
157	Amora (Earth-616)	Bad Characters	Green Eyes	Blond Hair	Female Characters	247	1964	marvel
221	Ophelia Sarkissian (Earth-616)	Bad Characters	Green Eyes	Black Hair	Female Characters	175	1969	marvel
229	Hela (Earth-616)	Bad Characters	Green Eyes	Black Hair	Female Characters	170	1964	marvel
253	Veranke (Earth-616)	Bad Characters	Green Eyes	Green Hair	Female Characters	156	2005	marvel
264	Giuletta Nefaria (Earth-616)	Bad Characters	Grey Eyes	Black Hair	Female Characters	149	1968	marvel
272	Madelyne Pryor (Earth-616)	Bad Characters	Green Eyes	Red Hair	Female Characters	146	1983	marvel
356	Mary Walker (Earth-616)	Bad Characters	Brown Eyes	Brown Hair	Female Characters	111	1988	marvel
			...					

## ИСПОЛЬЗОВАНИЕ OR В WHERE

```
SELECT *  
FROM superheroes  
WHERE hair = 'Red Hair'  
OR hair = 'Strawberry Blond Hair'  
OR hair = 'Auburn Hair'
```

# СУПЕРГЕРОИ С РЫЖИМИ ВОЛОСАМИ

id	name	align	eye	hair	gender	appearances	year	universe
15	Matthew Murdock (Earth-616)	Good Characters	Blue Eyes	Red Hair	Male Characters	1338	1338	marvel
17	Mary Jane Watson (Earth-616)	Good Characters	Green Eyes	Red Hair	Female Characters	1304	1965	marvel
26	Janet van Dyne (Earth-616)	Good Characters	Blue Eyes	Auburn Hair	Female Characters	1120	1963	marvel
27	Jean Grey (Earth-616)	Good Characters	Green Eyes	Red Hair	Female Characters	1107	1963	marvel
28	Natalia Romanova (Earth-616)	Good Characters	Brown Eyes	Red Hair	Female Characters	1050	1964	marvel
46	Norman Osborn (Earth-616)	Bad Characters	Blue Eyes	Auburn Hair	Male Characters	692	1964	marvel
47	Eugene Thompson (Earth-616)	Good Characters	Blue Eyes	Strawberry Blond Hair	Male Characters	689	1962	marvel
58	Patricia Walker (Earth-616)	Good Characters	Blue Eyes	Red Hair	Female Characters	550	1944	marvel
			...					

## ИСПОЛЬЗОВАНИЕ NOT В WHERE

```
SELECT *  
FROM superheroes  
WHERE hair NOT IN ('Blond Hair',  
                   'Black Hair', 'Brown Hair', 'Red  
Hair')
```

# СУПЕРГЕРОИ С РЕДКИМИ ВИДАМИ ВОЛОС

id	name	align	eye	hair	gender	appearances	year	universe
2	Captain America (Steven Rogers)	Good Characters	Blue Eyes	White Hair	Male Characters	3360	1941	marvel
6	Benjamin Grimm (Earth-616)	Good Characters	Blue Eyes	No Hair	Male Characters	2255	1961	marvel
11	Henry McCoy (Earth-616)	Neutral Characters	Blue Eyes	Blue Hair	Male Characters	1825	1974	marvel
13	Ororo Munroe (Earth-616)	Good Characters	Blue Eyes	White Hair	Female Characters	1512	1975	marvel
21	Charles Xavier (Earth-616)	Good Characters	Blue Eyes	Bald	Male Characters	1233	1963	marvel
26	Janet van Dyne (Earth-616)	Good Characters	Blue Eyes	Auburn Hair	Female Characters	1120	1963	marvel
29	Kurt Wagner (Earth-616)	Good Characters	Yellow Eyes	Blue Hair	Male Characters	1047	1975	marvel
30	Vision (Earth-616)	Good Characters	Gold Eyes	No Hair	Female Characters	1007	1968	marvel
			...					

# ИТОГИ

## ➤ **Ключевое слово WHERE**

Фильтрация строк, с которыми будут выполняться действия

Используется не только в SELECT, но и других операторах SQL

## ➤ **Операторы сравнения**

=, !=, <>, >, >=, <, <=

in, between, like

## ➤ **Логические операции**

and, or, not