

Раздел 5

Работа со значениями NULL

Видеокурс: <https://stepik.org/a/130488>

Что такое значение NULL?

music_instrument

id	name	parent_id
1	wind instruments	[null]
46	strings	[null]
24	brass	1
2	woodwind	1
65	aeolian harp	46
13	flute	2
179	reeds	2
868	gemshorn	2

- “Неизвестное” значение
- Это не нулевое значение
- Это не пустое “” значение

Сравнение с NULL

music_instrument

id	name	parent_id
1	wind instruments	[null]
46	strings	[null]
24	brass	1
2	woodwind	1
65	aeolian harp	46
13	flute	2
179	reeds	2
868	gemshorn	2

```
SELECT id, name, parent_id  
      FROM music_instrument  
     WHERE parent_id IS NULL  
          -- parent_id IS NOT NULL  
;
```

Результат

id	name	parent_id
1	wind instruments	[null]
46	strings	[null]

Сравнение с NULL

music_instrument

id	name	parent_id
1	wind instruments	[null]
46	strings	[null]
24	brass	1
2	woodwind	1
65	aeolian harp	46
13	flute	2
179	reeds	2
868	gemshorn	2

```
SELECT id, name, parent_id  
      FROM music_instrument  
 WHERE parent_id IS NULL  
 -- parent_id IS NOT NULL  
;
```

Результат

id	name	parent_id
1	wind instruments	[null]
46	strings	[null]

```
SELECT id, name, parent_id  
      FROM music_instrument  
 WHERE parent_id = NULL  
;
```

Результат

0 строк!

Функция COALESCE

- Замена NULL на другое значение

```
SELECT id,  
       name,  
       parent_id,  
       COALESCE(parent_id, -1)  
             as parent_id2  
FROM music_instrument  
;
```

Результат

id	name	parent_id	parent_id2
1	wind instruments	[null]	-1
46	strings	[null]	-1
24	brass	1	1
2	woodwind	1	1
65	aeolian harp	46	46
13	flute	2	2
179	reeds	2	2
868	gemshorn	2	2

a+b: внимание

mytable_int

a	b
1	5
2	[null]
3	4
[null]	2
22	[null]
...	...

SELECT

a,

b,

--

a + b **as** c

FROM mytable_int

;

Результат

a	b	c
1	5	6
2	[null]	[null]
3	4	7
[null]	2	[null]
22	[null]	[null]
...

a+b: внимание

mytable_int

a	b
1	5
2	[null]
3	4
[null]	2
22	[null]
...	...

SELECT

a,
b,

--

a + b **as** c,

--

coalesce(a,0) **as** a2,
coalesce(b,0) **as** b2,

--

coalesce(a,0) +**coalesce**(b,0) **as** c2

FROM mytable_int

;

Результат

a	b	c	a2	b2	c2
1	5	6	1	5	6
2	[null]	[null]	2	0	2
3	4	7	3	4	7
[null]	2	[null]	0	2	2
22	[null]	[null]	22	0	22
...

str_a || str_b: внимание

mytable_str

str_a	str_b
a	b1
a	[null]
a	b3
a	b4
a	[null]
...	...

```
SELECT
    str_a,
    str_b,
    --
    str_a || str_b as str_c
FROM mytable_str
;
```

Результат

str_a	str_b	str_c
a	b1	ab1
a	[null]	[null]
a	b3	ab3
a	b4	ab4
a	[null]	[null]
...

str_a || str_b: внимание

mytable_str

str_a	str_b
a	b1
a	[null]
a	b3
a	b4
a	[null]
...	...

SELECT

str_a,
str_b,

--
str_a || str_b **as str_c**,

--
coalesce(str_a,'') **as str_a2**,
coalesce(str_b,'') **as str_b2**,

--
coalesce(str_a,'') || coalesce(str_b,'')
as str_c2

FROM mytable_str

Результат

str_a	str_b	str_c	str_a2	str_b2	str_c2
a	b1	ab1	a	b1	ab1
a	[null]	[null]	a		a
a	b3	ab3	a	b3	ab3
a	b4	ab4	a	b4	ab4
a	[null]	[null]	a		a
...

band

band_id	name	year
303	The Beatles	1957
93	Metallica	1981
192	Queen	1970

list1

id
303
93

IN

```
SELECT band_id, name  
FROM band  
WHERE band_id IN  
(SELECT id  
FROM list1  
)
```

Результат

band_id	name
303	The Beatles
93	Metallica

band

band_id	name	year
303	The Beatles	1957
93	Metallica	1981
192	Queen	1970

list1

id
303
93

IN

```
SELECT band_id, name  
FROM band  
WHERE band_id IN  
(SELECT id  
FROM list1  
)
```

Результат

band_id	name
303	The Beatles
93	Metallica

```
SELECT band_id, name  
FROM band  
WHERE  
band_id IN (303, 93)
```

```
SELECT band_id, name  
FROM band  
WHERE  
band_id = 303  
OR band_id = 93
```

band

band_id	name	year
303	The Beatles	1957
93	Metallica	1981
192	Queen	1970

list1

id
303
93
[null]

IN - NULL

```
SELECT band_id, name  
FROM band  
WHERE band_id IN  
(SELECT id  
FROM list1  
)
```

Результат

band_id	name
303	The Beatles
93	Metallica

band

band_id	name	year
303	The Beatles	1957
93	Metallica	1981
192	Queen	1970

list1

id
303
93
[null]

IN - NULL

```
SELECT band_id, name  
FROM band  
WHERE band_id IN  
(SELECT id  
FROM list1  
)
```

Результат

band_id	name
303	The Beatles
93	Metallica

```
SELECT band_id, name  
FROM band  
WHERE  
band_id IN (303, 93,NULL)  
;
```

```
SELECT band_id, name  
FROM band  
WHERE  
band_id = 303  
OR band_id = 93  
OR band_id = NULL
```

IN - NULL (2)

band

band_id	name	year
303	The Beatles	1957
93	Metallica	1981
192	Queen	1970
[null]	Unknown	0

```
SELECT band_id, name  
FROM band  
WHERE band_id IN  
(SELECT id  
FROM list1  
)
```

Результат

band_id	name
303	The Beatles
93	Metallica

list1

id
303
93
[null]

IN - NULL (2)

band

band_id	name	year
303	The Beatles	1957
93	Metallica	1981
192	Queen	1970
[null]	Unknown	0

```
SELECT band_id, name  
FROM band  
WHERE band_id IN  
(SELECT id  
FROM list1  
)
```

Результат

band_id	name
303	The Beatles
93	Metallica

list1

id
303
93
[null]

```
SELECT band_id, name  
FROM band  
WHERE  
band_id IN (303, 93,NULL)  
;
```

```
SELECT band_id, name  
FROM band  
WHERE  
band_id = 303  
OR band_id = 93  
OR band_id = NULL
```

band

band_id	name	year
303	The Beatles	1957
93	Metallica	1981
192	Queen	1970

list1

id
303
93

NOT IN

```
SELECT band_id, name  
FROM band  
WHERE band_id NOT IN  
(SELECT id  
FROM list1  
)
```

Результат

band_id	name
192	Queen

band

band_id	name	year
303	The Beatles	1957
93	Metallica	1981
192	Queen	1970

list1

id
303
93

NOT IN

```
SELECT band_id, name  
FROM band  
WHERE band_id NOT IN  
(SELECT id  
FROM list1  
)
```

Результат

band_id	name
192	Queen

```
SELECT band_id, name  
FROM band  
WHERE  
band_id NOT IN (303, 93)
```

```
SELECT band_id, name  
FROM band  
WHERE  
band_id <> 303  
AND band_id <> 93
```

band

band_id	name	year
303	The Beatles	1957
93	Metallica	1981
192	Queen	1970

NOT IN - NULL

```
SELECT band_id, name  
FROM band  
WHERE band_id NOT IN  
(SELECT id  
FROM list1  
)
```

Результат
0 строк!!

list1

id
303
93
[null]

band

band_id	name	year
303	The Beatles	1957
93	Metallica	1981
192	Queen	1970

list1

id
303
93
[null]

NOT IN - решение

```

SELECT band_id, name
FROM band
WHERE band_id NOT IN
(SELECT id
FROM list1
WHERE id IS NOT NULL
)
    
```

Результат

band_id	name
192	Queen

```

SELECT band_id, name
FROM band
WHERE
band_id NOT IN (303, 93)
;    
```

```

SELECT band_id, name
FROM band
WHERE
band_id <> 303
AND band_id <> 93
    
```