

NULL

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NULL value

- Users are often confused by the NULL value.
- This value can be found in a field containing any type of data and has a very special meaning.
 - NULL is not:
 - NULL is NOT the number zero
 - NULL is NOT the empty string ""
- NULL is the value used to represent an unknown piece of data.

Tables

OWNERSHIP			
CUSTOMER_ID	NAME	HOUSES	APARTEMENTS
1	Thomas	2	1
2	Werner	1	2
3	Hans	2	2
4	Susi	1	0
5	Alex	1	NULL
6	Martin	NULL	2
7	Kurt	NULL	NULL
8	Maria	0	NULL
9	Verena	NULL	0

CATEGORY	
NUMBEROF	CATEGORY
NULL	unknown
0	nothing
1	OK
2	nice
3	wealthy
4	rich

```

SELECT * FROM OWNERSHIP WHERE HOUSES<>0
UNION
SELECT * FROM OWNERSHIP WHERE HOUSES=0;

```

CUSTOMER_ID	NAME	HOUSES	APARTEMENTS
1	Thomas	2	1
2	Werner	1	2
3	Hans	2	2
4	Susi	1	0
5	Alex	1	NULL
8	Maria	0	NULL

ID	NAME	HOUSES	APMT
1	Thomas	2	1
2	Werner	1	2
3	Hans	2	2
4	Susi	1	0
5	Alex	1	NULL
6	Martin	NULL	2
7	Kurt	NULL	NULL
8	Maria	0	NULL
9	Verena	NULL	0

```
SELECT *  
FROM OWNERSHIP  
WHERE HOUSES=APARTEMENTS;
```

```
CUSTOMER_ID NAME HOUSES APARTEMENTS  
3 Hans 2 2
```

ID	NAME	HOUSES	APMT
1	Thomas	2	1
2	Werner	1	2
3	Hans	2	2
4	Susi	1	0
5	Alex	1	NULL
6	Martin	NULL	2
7	Kurt	NULL	NULL
8	Maria	0	NULL
9	Verena	NULL	0

```

SELECT NAME,
       HOUSES,
       CATEGORY
FROM OWNERSHIP o
     INNER JOIN
     CATEGORY c
ON o.HOUSES =
    c.NUMBEROF;

```

NAME	HOUSES	CATEGORY
Thomas	2	gut
Werner	1	OK
Hans	2	gut
Susi	1	OK
Alex	1	OK
Maria	0	nix

ID	NAME	HOUSES	APMT
1	Thomas	2	1
2	Werner	1	2
3	Hans	2	2
4	Susi	1	0
5	Alex	1	NULL
6	Martin	NULL	2
7	Kurt	NULL	NULL
8	Maria	0	NULL
9	Verena	NULL	0

NUM	CAT
NULL	unknown
0	nothing
1	OK
2	nice
3	wealthy
4	rich

```

SELECT NAME,
        HOUSES,
        CATEGORY
FROM OWNERSHIP o
LEFT OUTER JOIN
CATEGORY c
ON o.HOUSES =
        c.NUMBEROF;

```

NAME	HOUSES	CATEGORY
Maria	0	nix
Alex	1	OK
Susi	1	OK
Werner	1	OK
Hans	2	gut
Thomas	2	gut
Verena	NULL	NULL
Kurt	NULL	NULL
Martin	NULL	NULL

ID	NAME	HOUSES	APMT
1	Thomas	2	1
2	Werner	1	2
3	Hans	2	2
4	Susi	1	0
5	Alex	1	NULL
6	Martin	NULL	2
7	Kurt	NULL	NULL
8	Maria	0	NULL
9	Verena	NULL	0

NUM	CAT
NULL	unknown
0	nothing
1	OK
2	nice
3	wealthy
4	rich

```

SELECT count(*),
       count(HOUSES),
       sum(HOUSES),
       avg(HOUSES),
       min(HOUSES),
       max(HOUSES)
FROM OWNERSHIP;

```

COUNT(*)	COUNT(HOUSES)	SUM(HOUSES)
9	6	7
AVG(HOUSES)	MIN(HOUSES)	MAX(HOUSES)
1.16667	0	2

ID	NAME	HOUSES	APMT
1	Thomas	2	1
2	Werner	1	2
3	Hans	2	2
4	Susi	1	0
5	Alex	1	NULL
6	Martin	NULL	2
7	Kurt	NULL	NULL
8	Maria	0	NULL
9	Verena	NULL	0

```
SELECT distinct HOUSES  
FROM OWNERSHIP;
```

HOUSES

1

NULL

2

0

ID	NAME	HOUSES	APMT
1	Thomas	2	1
2	Werner	1	2
3	Hans	2	2
4	Susi	1	0
5	Alex	1	NULL
6	Martin	NULL	2
7	Kurt	NULL	NULL
8	Maria	0	NULL
9	Verena	NULL	0

```
CREATE TABLE OWNERSHIP2
```

```
(  
    NUMBER          INTEGER UNIQUE,  
    CATEGORY        VARCHAR(10)  
);
```

```
INSERT INTO OWNERSHIP2 VALUES (NULL, 'unkn');  
INSERT INTO OWNERSHIP2 VALUES (0, 'nothing');  
INSERT INTO OWNERSHIP2 VALUES (1, 'OK');  
INSERT INTO OWNERSHIP2 VALUES (2, 'good');  
INSERT INTO OWNERSHIP2 VALUES (3, 'wealthy');  
INSERT INTO OWNERSHIP2 VALUES (4, 'rich');  
INSERT INTO OWNERSHIP2 VALUES (NULL, 'unkn');  
INSERT INTO OWNERSHIP2 VALUES (NULL, 'unknown');  
INSERT INTO OWNERSHIP2 VALUES (1, 'OKOK');
```

NUMBER	CATEGORY
NULL	unkn
0	nothing
1	OK
2	good
3	wealthy
4	rich
NULL	unkn
NULL	unknown

```

SELECT NAME,
       coalesce(HOUSES, -1) as HOUSES
FROM OWNERSHIP;

```

NAME	HOUSES
Thomas	2
Werner	1
Hans	2
Susi	1
Alex	1
Martin	-1
Kurt	-1
Maria	0
Verena	-1

ID	NAME	HOUSES	APMT
1	Thomas	2	1
2	Werner	1	2
3	Hans	2	2
4	Susi	1	0
5	Alex	1	NULL
6	Martin	NULL-1	2
7	Kurt	NULL-1	NULL
8	Maria	0	NULL
9	Verena	NULL-1	0

```

SELECT NAME,
       HOUSES,
       CATEGORY
FROM OWNERSHIP o
     INNER JOIN
     CATEGORY c
ON coalesce(o.HOUSES, -1) =
   coalesce(c.NUMBEROF, -1);

```

NAME	HOUSES	CATEGORY
Maria	0	nix
Alex	1	OK
Susi	1	OK
Werner	1	OK
Hans	2	gut
Thomas	2	gut
Verena	NULL	unknown
Kurt	NULL	unknown
Martin	NULL	unknown

NUM	CAT
NULL-1	unknown
0	nothing
1	OK
2	nice
3	wealthy
4	rich

ID	NAME	HOUSES	APMT
1	Thomas	2	1
2	Werner	1	2
3	Hans	2	2
4	Susi	1	0
5	Alex	1	NULL
6	Martin	NULL-1	2
7	Kurt	NULL-1	NULL
8	Maria	0	NULL
9	Verena	NULL-1	0