

Filtering with WHERE



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Filtering with WHERE



Ternary logic (3VL)

NULL indicators

Logical predicates

Using WHERE

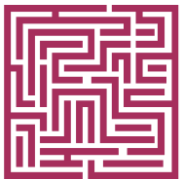
NULL



Represents missing or inapplicable data



Was not part of the original relational model



Introduced substantial complexity and anomalies



NULL is **not** a value!



3VL



TRUE



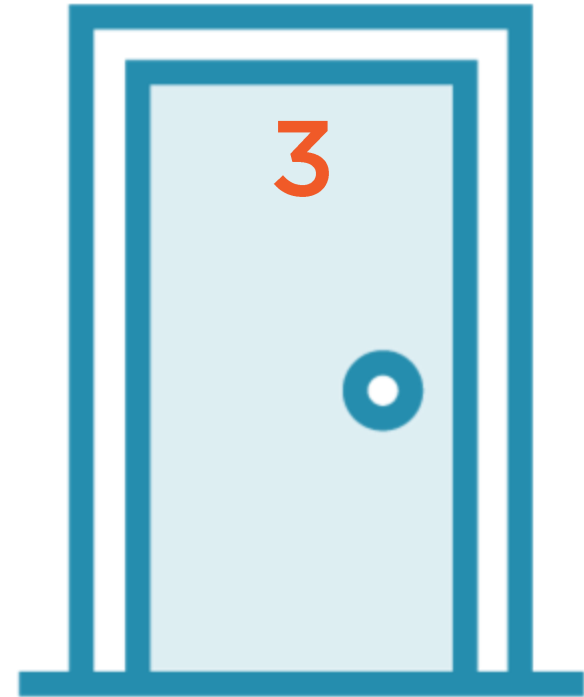
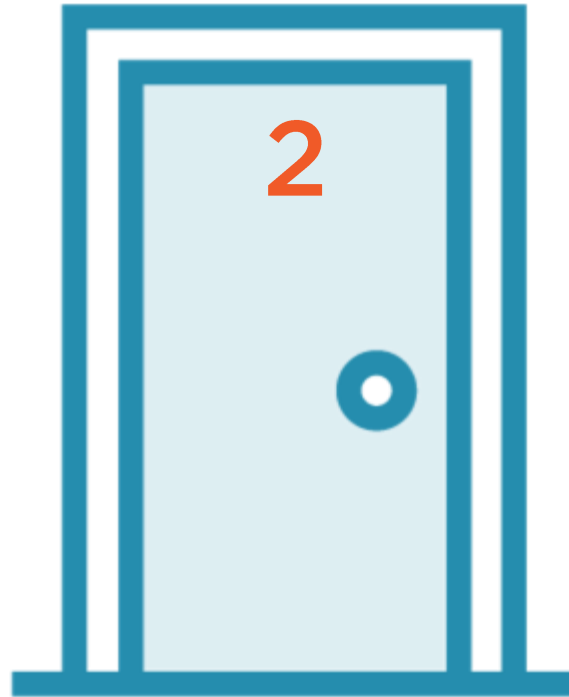
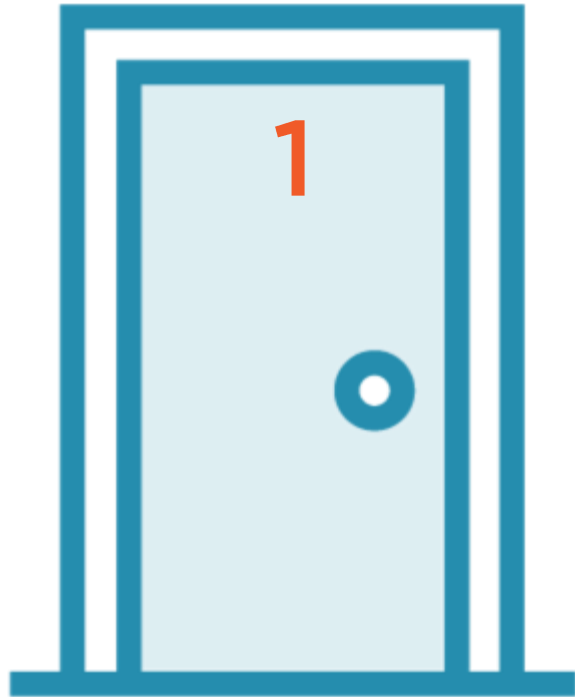
FALSE



UNKNOWN



Let's Make a Deal



Let's Make a Deal



3VL Logic Evaluation Cheat Sheet

a	b	a OR b	a AND b	a = b	NOT a
True	True	True	True	True	False
True	False	True	False	False	False
True	Unknown	True	Unknown	Unknown	False
False	True	True	False	False	True
False	False	False	False	True	True
False	Unknown	Unknown	False	Unknown	True
Unknown	True	True	Unknown	Unknown	Unknown
Unknown	False	Unknown	False	Unknown	Unknown
Unknown	Unknown	Unknown	Unknown	Unknown	Unknown



Additional Logical Operators

ALL

ANY / SOME

BETWEEN

EXISTS

IN

LIKE



Predicate

`X > ALL (A, B, C)`

`X > ANY|SOME (A, B, C)`

`X IN (A, B, C)`

`X NOT IN (A, B, C)`

`X BETWEEN A AND B`

`X LIKE (<pattern>)`

True when

◀ `X > A AND X > B AND X > C`

◀ `X > A OR X > B OR X > C`

◀ `X = A OR X = B OR X = C`

◀ `X <> A AND X<> B AND X<>C`

◀ `X >= A AND X <= B`

◀ `X matches wildcard pattern`



NULL Predicates

X
=
NULL

Always
unknown

X
<>
NULL

Always
unknown

X
IS
NULL

True if X is null
False if not
Never unknown

X
IS NOT
NULL

False if X is null
True if not
Never unknown



Row by Row Evaluation

WHERE Country = 'USA'

Customer	Country	Country = 'USA'
Jack	USA	TRUE
Kelly	USA	TRUE



Demo



Filtering rows with WHERE



Review



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