

What an index does, when it helps, and what it costs.

A separate sorted structure — usually a B-tree — that lets the database find rows without scanning the table. It trades write speed and disk space for read speed.

STRUCTURE
B-tree

READ
faster

WRITE
slower

- Index columns used in WHERE, JOIN and ORDER BY.
- A composite index works left to right: (a, b) helps queries on a, and on a+b, but not b alone.
- Wrapping a column in a function usually disables its index.
- Every index must be updated on every insert, update and delete.
- A low-cardinality column — like a boolean — rarely benefits.
- EXPLAIN shows whether the index was actually used.

LOOK FOR IT

WHERE lower(email) = 'x' cannot use an index on email. An index on lower(email) can.

Always check with EXPLAIN. An index that is never chosen by the planner is pure cost.