HOW SOFTWARE WORKS · BUILDER · 15 MIN READ

Supabase and databases

Tables, rows, SQL, sign-in and row level security: the back end most vibe-coded apps run on.

Pass the check (4 of 5) online to earn the “Data Keeper” badge:
https://digitalbuilders757.com/university/study/supabase-and-databases

Databases in one picture

A database is like a set of very strict spreadsheets. Each table holds one kind of thing (users, posts, orders). Each row is one item; each column is one detail (name, email, created date). Every row has a unique id, and tables point at each other with those ids (a post has an author_id that matches a user).

SQL (Structured Query Language) is the language for asking a database questions and changing it: 'select all orders from this week'. Postgres (PostgreSQL) is one of the most trusted open-source databases, and it speaks SQL.

What Supabase is

Supabase is a back-end platform built on Postgres. One project gives you a hosted database plus the pieces most apps need around it, so you don't build them yourself:

- Database: full Postgres, with a table editor in the dashboard.
- Auth: sign-up, sign-in, magic links, social logins and user management.
- Instant APIs: your tables become an API the app can call.
- Storage: files like profile photos and PDFs.
- Edge Functions: small pieces of server code for jobs that need secrets, like calling a payment or AI API.
- Realtime: live updates, for chat or dashboards.

Row level security (RLS): the most important switch

Your app's public key (often called the anon or publishable key) ships inside the front end, so anyone can find it. That's fine only if the database itself decides who can see each row. That's row level security: rules (policies) such as 'a user can read and edit only their own notes'.

Security researchers auditing vibe-coded apps have repeatedly found tables with RLS switched off, meaning anyone with the public key could read every row. The fix is simple: turn RLS on for every table, deny by default, then add the smallest policies the app needs.

The service role (secret) key bypasses RLS and must only ever live on the server.

Migrations: changing the database safely

A migration is a saved, ordered script that changes the database structure (add a table, add a column). Keeping migrations in Git means every environment can be built the same way and changes can be reviewed like code. Test changes on a development or branch database before production, and back up first.

Key terms

Database
Organised storage for everything an app must remember.

Table
One kind of thing in a database, like users or orders.

Row
One item in a table, like one user.

Column
One detail stored for every row, like email.

SQL
The language for asking a database questions and changing it.

Postgres (PostgreSQL)
A trusted open-source SQL database. Supabase is built on it.

Supabase
A back-end platform on Postgres with auth, instant APIs, storage, edge functions and realtime.

Row level security (RLS)
Database rules that decide which rows each user may read or change.

Policy (RLS)
One row level security rule, like 'users can read their own notes'.

Anon / publishable key
Supabase's public key that ships in the front end; safe only with RLS on.

Service role key
Supabase's secret key that bypasses RLS. Server only, never in the browser.

Migration
A saved, ordered script that changes the database structure.

Edge function
A small piece of server code that runs close to users, often to use secrets safely.

Storage bucket
A folder in file storage for images, PDFs and uploads, with its own access rules.

Try it: Lock a table the right way

1. Create a free Supabase project and a table called notes with columns id, user_id, body.
2. Turn on row level security for the table and confirm nobody can read it.
3. Add a policy: users can select rows where user_id equals their own id (Supabase's policy templates help).
4. Ask an AI to explain each line of the policy until you could explain it to a friend.

KNOWLEDGE CHECK

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5 questions. Circle one answer for each; 4 or more correct passes. Answers are at the back.

1. In a database table, a row is:

A. One detail, like 'email'
B. The whole database
C. A password
D. One item, like one user

2. What database is Supabase built on?

A. Postgres
B. Excel
C. MongoDB only
D. Google Sheets

3. What does row level security do?

A. Speeds up queries by caching rows
B. Lets the database decide which rows each user may read or change
C. Encrypts every row so no one can read it
D. Deletes old rows

4. Where may the Supabase service role key live?

A. In the front-end code, as long as the code is minified
B. In a public GitHub repo
C. Only on the server, as a secret environment variable
D. In a chat with AI

5. What is a migration?

A. Moving to a new country
B. A log of every query that users have run on the database this month
C. A backup copy of the database that runs every night automatically
D. A saved, ordered script that changes the database structure

Official sites

Supabase: https://supabase.com
Supabase docs: Row Level Security: https://supabase.com/docs/guides/database/postgres/row-level-security
PostgreSQL: https://www.postgresql.org

Last reviewed 2026-11-25. AI tools change fast; check each tool's own site for current features, plans and prices.

ANSWER KEY

Supabase and databases

1. D: One item, like one user
Rows are items; columns are details about each item.

2. A: Postgres
Supabase is built on Postgres, a widely trusted open-source SQL database.

3. B: Lets the database decide which rows each user may read or change
RLS policies enforce access inside the database, where users can't bypass them.

4. C: Only on the server, as a secret environment variable
The service role key bypasses RLS. It must only exist on the server.

5. D: A saved, ordered script that changes the database structure
Migrations make database changes repeatable and reviewable.