Let's Build a Simple Database

Writing a sqlite clone from scratch in C

Overview

View on GitHub (pull requests welcome)

How Does a Database Work?

- What format is data saved in? (in memory and on disk)
- When does it move from memory to disk?
- Why can there only be one primary key per table?
- How does rolling back a transaction work?
- How are indexes formatted?
- When and how does a full table scan happen?
- What format is a prepared statement saved in?

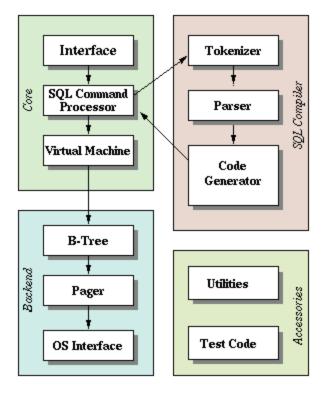
In short, how does a database work?

I'm building a clone of sqlite from scratch in C in order to understand, and I'm going to document my process as I go.

Table of Contents

- Part 1 Introduction and Setting up the REPL
- Part 2 World's Simplest SQL Compiler and Virtual Machine
- Part 3 An In-Memory, Append-Only, Single-Table Database
- Part 4 Our First Tests (and Bugs)
- Part 5 Persistence to Disk
- Part 6 The Cursor Abstraction
- Part 7 Introduction to the B-Tree
- Part 8 B-Tree Leaf Node Format
- Part 9 Binary Search and Duplicate Keys
- Part 10 Splitting a Leaf Node
- Part 11 Recursively Searching the B-Tree
- Part 12 Scanning a Multi-Level B-Tree
- Part 13 Updating Parent Node After a Split

"What I cannot create, I do not understand." – Richard Feynman



sqlite architecture (https://www.sqlite.org/arch.html)

rss | subscribe by email

This project is maintained by cstack

Hosted on GitHub Pages — Theme by orderedlist