



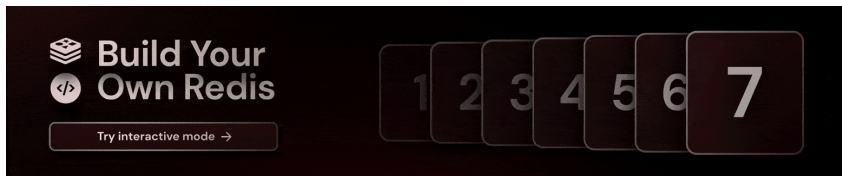


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README



Build your own <insert-technology-here>

This repository is a compilation of well-written, step-by-step guides for re-creating our favorite technologies from scratch.

What I cannot create, I do not understand — Richard Feynman.







It's a great way to learn.

- [3D Renderer](#)
- [Augmented Reality](#)
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Master programming by recreating your favorite technologies from scratch.

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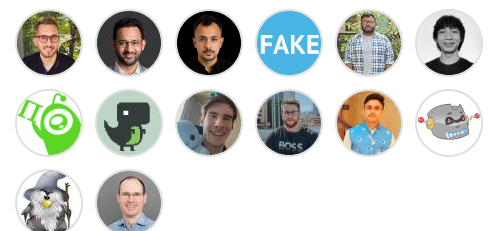
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Tutorials

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- [C++: Physically Based Rendering: From Theory To Implementation](#)
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- [C# / TypeScript / JavaScript: Learning how to write a 3D soft engine from scratch in C#, TypeScript or JavaScript](#)

Languages

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- [C#: AR Portal Tutorial with Unity](#) [video]
- [C#: How to create a Dragon in Augmented Reality in Unity ARCore](#) [video]
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- [**Go:** Build Your Own Container Using Less than 100 Lines of Go](#)
- [**Go:** Building a container from scratch in Go](#) [video]
- [**Python:** A workshop on Linux containers: Rebuild Docker from Scratch](#)

- [Python: A proof-of-concept imitation of Docker, written in 100% Python](#)
- [Shell: Docker implemented in around 100 lines of bash](#)

Build your own Emulator / Virtual Machine

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- [C: Virtual machine in C](#)
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- [C++: How to write an emulator \(CHIP-8 interpreter\)](#)
- [C++: Emulation tutorial \(CHIP-8 interpreter\)](#)
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- [C++: Emulation tutorial \(Master System emulator\)](#)
- [C++: NES Emulator From Scratch](#) [video]
- [Common Lisp: CHIP-8 in Common Lisp](#)
- [JavaScript: GameBoy Emulation in JavaScript](#)
- [Python: Emulation Basics: Write your own Chip 8 Emulator/Interpreter](#)
- [Rust: Odmg: Learning Rust by building a partial Game Boy emulator](#)

Build your own Front-end Framework / Library

- [JavaScript: WTF is JSX \(Let's Build a JSX Renderer\)](#)
- [JavaScript: A DIY guide to build your own React](#)
- [JavaScript: Building React From Scratch](#) [video]
- [JavaScript: Gooact: React in 160 lines of JavaScript](#)
- [JavaScript: Learn how React Reconciler package works by building your own lightweight React DOM](#)
- [JavaScript: Build Yourself a Redux](#)
- [JavaScript: Let's Write Redux!](#)
- [JavaScript: Redux: Implementing Store from Scratch](#) [video]
- [JavaScript: Build Your own Simplified AngularJS in 200 Lines of JavaScript](#)
- [JavaScript: Make Your Own AngularJS](#)
- [JavaScript: How to write your own Virtual DOM](#)

- [**JavaScript:** *Building a frontend framework, from scratch, with components \(templating, state, VDOM\)*](#)
- [**JavaScript:** *Build your own React*](#)
- [**JavaScript:** *Building a Custom React Renderer* \[video\]](#)

Build your own Game

- [**C:** *Handmade Hero*](#)
- [**C:** *How to Program an NES game in C*](#)
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- [**C++:** *Breakout*](#)
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- [**C++:** *Tetris tutorial in C++ platform independent focused in game logic for beginners*](#)
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- [**C++:** *Reconstructing Cave Story* \[video\]](#)
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- [**C#:** *Creating a Roguelike Game in C#*](#)
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- [**JavaScript:** *How to Make Flappy Bird in HTML5 With Phaser*](#)
- [**JavaScript:** *Developing Games with React, Redux, and SVG*](#)
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- [**JavaScript:** *How to Make Your First Roguelike*](#)
- [**JavaScript:** *Think like a programmer: How to build Snake using only JavaScript, HTML & CSS*](#)

- [Lua: BYTEPATH](#)
- [Python: Developing Games With PyGame](#)
- [Python: Making Games with Python & Pygame](#) [pdf]
- [Python: Roguelike Tutorial Revised](#)
- [Ruby: Developing Games With Ruby](#)
- [Ruby: Ruby Snake](#)
- [Rust: Adventures in Rust: A Basic 2D Game](#)
- [Rust: Roguelike Tutorial in Rust + tcod](#)

Build your own Git

- [Haskell: Reimplementing “git clone” in Haskell from the bottom up](#)
- [JavaScript: Gitlet](#)
- [JavaScript: Build GIT - Learn GIT](#)
- [Python: Just enough of a Git client to create a repo, commit, and push itself to GitHub](#)
- [Python: Write yourself a Git!](#)
- [Python: ugit: Learn Git Internals by Building Git Yourself](#)
- [Ruby: Rebuilding Git in Ruby](#)

Build your own Network Stack

- [C: Beej's Guide to Network Programming](#)
- [C: Let's code a TCP/IP stack](#)
- [C / Python: Build your own VPN/Virtual Switch](#)
- [Ruby: How to build a network stack in Ruby](#)

Build your own Neural Network

- [C#: Neural Network OCR](#)
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- [Go: Build a multilayer perceptron with Golang](#)
- [Go: How to build a simple artificial neural network with Go](#)
- [Go: Building a Neural Net from Scratch in Go](#)
- [JavaScript / Java: Neural Networks - The Nature of Code](#) [video]
- [JavaScript: Neural networks from scratch for JavaScript linguists \(Part1—The Perceptron\)](#)

- [Python: A Neural Network in 11 lines of Python](#)
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- [C++: Game physics series by Allen Chou](#)
- [C++: How to Create a Custom Physics Engine](#)
- [C++: 3D Physics Engine Tutorial](#) [video]
- [JavaScript: How Physics Engines Work](#)
- [JavaScript: Broad Phase Collision Detection Using Spatial Partitioning](#)
- [JavaScript: Build a simple 2D physics engine for JavaScript games](#)

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