
Emulators written in JavaScript

A list of emulators written in the JavaScript programming language.

This list started as a compilation of JavaScript emulators posted to Echo JS over the years. If you know about any missing emulators, please consider adding them to the collection: the source for this page is available on GitHub. Thank you in advance.

Acorn

- Atom Tiny Emu - by Andre Weissflog (source)
- Acorn Atom Emulator - by Phil Mainwaring. Software archive here. (Older version here: Type "OLD" for an Easter Egg.)
- ElkJS - JavaScript based Acorn Electron emulator (Source)
- JSBeeb - JavaScript BBC Micro emulator (Source) (Development blog)
- JSAtom - JavaScript Acorn Atom emulator including Software Archive (Source) Based on JSBeeb

Altair

- MITS Altair Simulator Front panel simulation of the 8080-based Altair, by Ian Davies, built on 8080.js

Amstrad

- CPCBox - Amstrad CPC emulator in JavaScript (archive link)
- CPC Tiny Emu - by Andre Weissflog (source)
- Roland - An Amstrad CPC emulator written in JavaScript. (Source)

Apple

- Apple 1js - by Will Scullin
- Apple2e - Apple IIe emulator by John Clark (Source)
- Apple IIjs - An Apple][Emulator in JavaScript
- a2 - A fast, WebGL optimized Apple][+ emulator
- Apple2JS - A JavaScript emulator for the Apple II
- BasiliskII - An Emscripten Port of BasiliskII (Demo 1, Demo 2)
- MiniVMac-Em - An Emscripten Port of MiniVMac (Demo)
- Yet Another Apple 2+ in JavaScript - by Thomas Skibo

Atari

- 8bit Workshop - VCS IDE by Steven Hugg, building on Javatari.js
- EstyJS - A pretty fast and functional JavaScript Atari ST emulator (Source)
- Javatari.js - Atari 2600 emulator by Paulo Augusto Peccin. (Example cartridges online) (Source)
- jsA8E - JavaScript version of the A8E Atari 800 XL Emulator
- JS7800 - JavaScript Atari 7800 Emulator

Commodore

- Commodore LCD emulator - by Gábor Lénárt “LGB”
- Commodore PET - by Thomas Skibo
- JSC64 - Commodore 64 emulator written in JavaScript (Source)
- c64js - Commodore 64 emulator written in JavaScript by Mikael Borgbrant (Source)
- C64 Tiny Emu - by Andre Weissflog (source)
- Kim1 - emulation in JavaScript by Rob Sayers (Source)
- SAE - Scripted Amiga Emulator (Source)
- VIC-20 Emulator - JavaScript VIC-20 emulator
- VICE.js - Versatile Commodore Emulator for JavaScript (Source)

Data General

- Novas Are Forever - by Wild Hare Computer Systems, for the 50th anniversary.

DEC

- PDP-1 running the SpaceWar game and the Minskytron demo - by Norbert Landsteiner
- PDP-8 and PDP-11 simulators with assembly language interfaces (explanatory articles with full source, not live site) - by programmer209
- JavaScript PDP 11 - PDP-11/70 emulator with simulated front panel and a choice of operating systems. By Paul Nankervis
- PDP-11 Emulator - A JavaScript PDP-11 emulator running UNIX Sixth Edition. By Julius Schmidt
 - with teletype - PDP-11 emulator with teletype interface
- pdp11-js - PDP-11 emulator with UNIX V6. By Takahiro Aoyagi (Source)

Nintendo

- 1964js - JavaScript port of the 1964 N64 emulator for Windows
- CfxNES - JavaScript NES Emulator (Demo)
- CycloaJS - JavaScript NES Emulator (Source)
- em-fceux - an Emscripten port of FCEUX, an emulator of NES, Famicom, Famicom Disk System (FDS), and Dendy consoles. Demo site
- GBA.js - Game Boy Advance in the Browser (Source)
- IodineGBA - A Game Boy Advance emulator written entirely in JavaScript (Source)
- gba.ninja - JavaScript port of VisualBoyAdvance-M, a Game Boy Advance emulator (Source)
- JSNES - A JavaScript NES emulator (Source)
- NESNES - JavaScript NES emulator, also available as a web component (Source)
- Nezulator - A NES emulator in JavaScript
- N64Wasm - A web based N64 Emulator (Source)
- XNES - Experimental JavaScript Super Nintendo emulators (Source)
- jsGB - A Game Boy emulator in JavaScript (Source)
- jsGBC - Game Boy Color Emulator written in JavaScript (Source)
- mupen64plus - A port of the popular Nintendo 64 emulator for the Web (Source)
- n64js - An N64 emulator in JavaScript (Source)
- pinky - A Rust based NES emulator ported to the web via WebAssembly (Source)
- DeSmuME-wasm - A WebAssembly port of the DeSmuME Nintendo DS emulator (Demo)
- Desmond.js - A portable/embeddable version of DeSmuME-wasm (Demo)
- SkyEmu - SkyEmu is a low level Game Boy, Game Boy Color and Game Boy Advance emulator
- CAMLBOY - A Game Boy emulator that runs in your browser written in OCaml
- TinyGB - A Game Boy emulator that runs only in the terminal written in NodeJS
- Boytacean - A Game Boy emulator written in Rust that works in the Browser using WebAssembly (Source)

Robotron / VEB Mikroelektronik

- KC85_Emu - KC85/3 and KC85/4 emulator by Alexander Lang
- KC85/2 family emulators by Andre Weissflog (source):
 - KC85/2 Tiny Emu
 - KC85/3 Tiny Emu
 - KC85/4 Tiny Emu
- LC-80 - single board U880-based trainer from the DDR (warning: auto-plays sound at boot), via emscripten. By Andre Weissflog (source)

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- Z1013 Tiny Emu - by Andre Weissflog (source)
 - KC87 Tiny Emu - by Andre Weissflog (source)

Sega

- jsSMS - JavaScript Sega Master System & Game Gear emulator (Source)
- Miracle - Sega Master System emulator (Source)

Sinclair

- JSSpeccy - A ZX Spectrum emulator in JavaScript (Source)
- JtyOne Online ZX81 Emulator - by Simon Holdsworth
- Qaop/JS - ZX Spectrum emulator
- ZX80 Emulator - JavaScript ZX80 Emulator
- EMF ZX80 - EMF-based ZX80 Emulator - by Steven Goodwin (@MarquisdeGeek) (Source)
- EMF ZX81 - EMF-based ZX81 Emulator - by Steven Goodwin (@MarquisdeGeek) (Source)
- Science of Cambridge MK14 simulator - by Doug Rice, based on Paul Robson's offline emulator.
- ZX Spectrum 48K Tiny Emy - by Andre Weissflog (source)
- ZX Spectrum 128 Tiny Emu - by Andre Weissflog (source)

Sony

- eNGE - JavaScript browser based PSX emulator (runs games at full speed) (Source)
- PSeudo - JavaScript/WebGL/WebAudio browser based PLAYSTATION emulator (aka PSX) (needs boot ROM image, not supplied) (Source)
- PCSXjs - Modified PCSX-Reloaded compiled with Emscripten (Source)
- WASMPsx - Easily embeddable fork of PCSXjs
- kpspemu - PSP Emulator written in Kotlin for JVM, JS and Native
- Play!.js - This is a port of Play!, a PlayStation2 emulator, running in a web browser

Tandy

- CloudT TRS-80 Model 100 Emulator - by John R. Hogerhuis (Announcement)
- MC-10 Emulator - Emulator for the TRS-80 MC-10 microcomputer
- TRS-80 Model III Emulator a JavaScript emulator for the TRS-80 Model III, by Peter Phillips
- JS Mocha - The HTML5 CoCo 2 Emulator

Multi-system Emulators

- JSMESS examples - The JavaScript MESS (Multi Emulator Super System) (Source) (Notes)
- PCE - PC emulators in JavaScript (Atari ST, IBM PC 5150, Macintosh, RC759 Piccoline)
- RetroArch - JavaScript port of RetroArch (bundles Gambatte (Game Boy), Genesis Plus GX, Handy (Lynx), Snes9x Next, VBA Next (Game Boy Advance), Tyrquake and FinalBurn Alpha)
- RetroWeb - collection of JavaScript emulators and boot media, including Apple-IIe (VisiCalc), Macintosh (System 1.0), Atari 1040ST, Commodore 64, Amiga 500 (Workbench 1.3), IBM PC Model 5150 (PC-DOS, CP/M-86, Cassette Basic), IBM PC XT (DOS, GEM 1.2, VisiCalc, Windows 1.01, 8088 Corruption demo), RC759 Piccoline (Eliza, Bil-simulation, Concurrent CP/M-86), TRS-80.
- YAKC - Z1013, Z9001, KC85/2 family, Speccy, CPC, Acorn Atom, C64, with integrated debugging UI (source)
- Tiny Emulators - based on the same chip- and system-emulator source code as YAKC, but as minimal WASM apps without fluff (source)
- EmulatorJS - RetroArch compiled to emscripten with a nice wrapper (source)

PC Emulators

- Em-DOSBox - An Emscripten port of DOSBox (Demo)
- Halfix - x86 PC emulator that runs both natively and in the browser, via WebAssembly (Demo 1, Demo2)
- js-dos - WebAssembly port of DOSBox (fork of Em-DOSBox with better js API) (Demo,Source)
- JS/Linux - JavaScript PC emulator
- JsDOSBox - JavaScript PC DOS emulator (Source)
- PCjs - IBM PC Model 5150 emulator (Source)
- QemuJS - An Emscripten port of QEMU (Demo)
- Virtual x86 - x86 virtualization in your browser, recompiling x86 to wasm on the fly (Source)
- jemul8 - An object-oriented JavaScript x86 emulator for Node.js and the Browser (Source)
- jsbochs - Bochs PC emulator for the Browser (Source)
- Boxedwine - An emulator that runs Windows applications using Wine and emulating a Linux kernel and CPU (Source)

Bare CPUs

- 8008 running SCELBAL by Mark G. Arnold. (“SCELBAL is the only open-source, floating-point, high-level language ever implemented on the 8008”)

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- 8080 CPU emulator - Intel 8080 CPU emulator running Space Invaders ROM (Source)
 - AVR8js - AVR architecture emulator, capable of running Arduino code (source)
 - EMF Arcade Invaders - EMF-based 8080 Emulator with Space Invaders ROM - by Steven Goodwin (@MarquisdeGeek) (Source)
 - 8086tiny running FreeDOS - An Emscripten port of Adrian Cable's 8086tiny. Source, and other emulators ported by Clay Shippy, at <https://github.com/tecan/emscripten-projects>.
 - Angel - JavaScript RISC-V ISA simulator booting Linux in a web-browser
 - Angular 2 6502 written with TypeScript and Angular 2, by Jeremy Likness
 - ARM-js - An ARM emulator written in JavaScript (Source)
 - ASM80 - Online assembler for 8-bit microprocessors by Martin Malý. Includes emulation of several machines: 8080, Z80, 6502, 6809. (Sources)
 - Basic MIPS functional simulator by Mianzhi Wang (morriswmz). (Source)
 - Easy6502 - JavaScript 6502 tutorial and emulator (Source)
 - EduMIPS64 - Educational MIPS64 CPU, ported from Java by Andrea Spadaccini using GWT (see blog here.) (Source)
 - FRISCjs - an 8-register educational RISC from the University of Zagreb, with both assembler and front panel, by Ivan Žužak. Source
 - Imaginary 6502 - 6502 Emulator and Assembler
 - Intel 4004 emulator - by Maciej Szyk. Includes assembler and disassembler.
 - Intel 8080 CPU Emulator - Emulates a minimal Intel 8080 Microcomputer that runs CP/M
 - iRISC - Interactive ARMv7 assembly language interpreter and computer architecture simulator (Source)
 - JavaScript 8080 Emulator - 8080 arcade game emulator in JavaScript
 - Mipsdis - MIPS disassembler that runs in the browser
 - RISC Relay Computer - Relay based computer project with a 16 bit RISC CPU. Emulator includes an assembler and source for a calculator program. By RJH. See website.
 - RISCVEMU - RISC-V emulator boots 64-bit Linux. By Fabrice Bellard.
 - RP2040js - Raspberry Pi Pico (RP2040 / Arm Cortex-M0+) emulator with C/C++/MicroPython/CircuitPython support (Source)
 - Simple 8-bit Assembler Simulator - Provides a simplified assembler syntax (based on NASM) and is simulating a x86 like CPU (Source)
 - uARM.wasm - ARMv5TE emulator running Linux in browsers (Source)
 - Unicorn.js - The Unicorn emulator framework, now available for JavaScript (Source)
 - Visual ARM1 - JavaScript/WebGL for ARM's first CPU, modelling 25000 transistors at switch level and animating the original chip layout - in 3D. See the blog post
 - Visual 6502 - JavaScript simulator for the 6502 CPU, modelling thousands of transistors at switch level and animating the original chip layout. See also expert mode.
 - Visual 6800 - JavaScript simulator for the Motorola 6800 CPU, modelling thousands of transis-

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- tors at switch level and animating the original chip layout.
- Visual Z80 - JavaScript simulator for the Z80 CPU, modelling thousands of transistors at switch level and animating the original chip layout.
 - Visulator - x86 machine emulator that visualizes how each instruction is processed (Source)
 - YAMD - Yet Another MIPS Debugger (Source)
 - jor1k - OpenRISC OR1K JavaScript emulator running Linux with network support (Source)
 - js1m32 - JavaScript LatticeMico32 emulator running Linux (Source)
 - ZUSIE - JavaScript simulation of Fredrik Andersson's homebrew relay machine inspired by Zuse's machines.

Early machines

- Babbage's Difference Engine (First funded 1823, first full build in 1855, first full rebuild in 1991)
- Babbage's Analytical Engine in JavaScript, by John Walker. (First described 1837, never completed, not yet rebuilt.) (Documentation)
- Turing machine simulated in JavaScript. See here for more information. (1936)
- Z1 machine's adder in 3D JavaScript/WebGL interactive simulation of the mechanical adder of Zuse's first machine. By Jakob Mischek (Source) (1938)
- Z3 machine's adder - ripple-carry electromechanical adder simulated in JavaScript, by Henry Raymond, Patrick Seewald and Vijeinath Tissaveerasingham. Explanation (1941)
- JsSSEM - Manchester Small-Scale Experimental Machine emulator (Also check Computer/zero which is very loosely based on the SSEM, and its tutorial) (1948)
- C88 - C88 computer simulation (The Homebrew CPU inspired by the SSEM) (1948)
- EDSAC on Browser - by NISHIO Hirokazu (Programming guide) (1949)
- EMF Elliott - EMF-based Elliott Emulator - by Steven Goodwin (@MarquisdeGeek) (Source)
- WITCH Emulator - The Harwell Dekatron Machine, by Justin King. (Source and example programs) (1951)
- UNIVAC I emulator - JavaScript emulator by Norbert Landsteiner (1951)
- ElectroData/Burroughs Datatron 205 Emulator - by Paul Kimpel (Source) (1954)
- TX-0 emulator by @wizforest, including several programs from the time. (Instructions) (1956)
- Mailüfterl - JavaScript emulator by Norbert Kehrer (1958)
- Setun (Russian) and English (archived) - JavaScript emulator by Обухов Александр. Ternary machine from Soviet Union (1958)
- Digi-Comp 1 (previously) - educational sliding-rods plastic computer. Emulator by Larry Groebe and Kevin Williams. (1963)
- Digi-Comp II - educational falling-marbles computer. Emulator by Joda Redfearn. (1965)
- Burroughs B5500 emulator - Burroughs B5500 emulator in JavaScript (Source) (1964)

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- Apollo Guidance Computer - Moonjs a port by Shahriar Iravanian of Ronald Burkey's Virtual AGC. (1966)
 - BESM-6 - with examples in Algol, Fortran, and assembler. By Leonid A. Broukhis and Michael Yaroslavtsev. More here. (1968)
 - CARDIAC - Bell Labs' CARDIAC cardboard computer from 1969. Instructions (1969)
 - Kenbak-1 - John Blankenbaker's TTL-based 256byte personal computer. More information (1970)
 - Ordinapoche - A paper computer from France, invented 1969, popularised in 1981 and 1985. (More here and see also the 1981 magazine)
 - BullGammaTor - A JavaScript emulator for the Bull Gamma 3 ET computer (Source) (1952)

Calculator emulators

Microcode-level calculators

- HP21u, HP25u, and HP29u - by Greg Sydney-Smith
- HP-35 - bug-compatible emulator by Ashley Feniello explained here using Eric Smith's and Jacques Laporte's work
- HP-35, HP-45, HP-55, HP-65, HP-80 - collection of HP Classics, based on Feniello's work, by Francois Roulet
- HP-45 - statically recompiled ROM by Norbert Kehrer
- jsEmu48 - emscripten port by Julien Meyer of HP EMU By Daniel Nilsson. (Source)
- HP-55, HP-65 and HP-67 - with extra debug menu, by Greg Sydney-Smith
- мк-61 - Elektronika's programmable calculators MK-61, БЗ-34, MK-54, and MK-56, also the Феликс-М (Felix M) arithmometer, a slide rule and an abacus. By Felix Lazarev, Andrey_emu, Sergey Tarasov and others.
- Sinclair Scientific and TI-1500 - calculator simulations including full description of the algorithms and the reverse-engineering process. By Ken Shirriff. Further work by Phil Mainwaring shows Sinclair Cambridge, TI-1500 and Sinclair Scientific, each using different customisations of TI's 080x chip.
- TI-42 "MBA" Programmable Calculator by Jeff Parsons (PCjs)
- TI-55 by Jeff Parsons (PCjs)
- TI-57 Programmable Calculator by Jeff Parsons (PCjs)
- TI-92 Plus emulator - JavaScript emulator for the TI-92 Plus
- JavaScript TI-89 / TI-92+ / TI-V200 / TI-89T emulator - by Patrick Davidson and Lionel Debroux

Workalike calculators

- HP-11C, HP-12C Platinum, HP-16C - by Elvis Pfützenreuter
- HP-16C (Jovial RPN) - by Bill Foote
- HP-15C - by Greg Hewgill. (Source)
- HP-21 and HP-29 by Greg Sydney-Smith (See [here](#) and [here](#))
- HP-25 - by John Clenace
- HP-35 - JavaScript emulator by Neil Fraser
- HP-35 SOS - modified HP-35 with stack overflow sensing LED, by Hans Klaver, based on Fraser's work
- HP-48 - JavaScript implementation of the most commonly used HP-48 functions. More info [here](#), by Josh Poley
- Olivetti Programma 101 - JavaScript emulation of the first commercial programmable desktop computer, by "Fabioamd87". Source on [GitHub](#)
- Sinclair Cambridge Programmable by Nigel Bromley. (Source [here](#).)

Miscellaneous

- C1Pjs - JavaScript simulation of the Challenger 1P (PCjs)
- Canon Cat (in JSMess) - Jef Raskin's Forth-capable 68000-based word processor. (Instructions and more info)
- CFT - JavaScript simulation of Alexios Chouchoulas' 16-bit homebrew TTL machine. (More information including documentation and a video.)
- Chip-8 virtual machine by Alexander Dickson - see [blog entry](#)
- Chip-8 virtual machine by Brian Milton (Source may target several CPUs)
- Chip8 1k - a code-golfed chip 8 emulator in 1k by Maxime Euzière and others
- EMF Chip 8 - EMF-based Elliott Emulator - by Steven Goodwin (@MarquisdeGeek) (Source)
- EMF Megaprocessor - EMF-based Megaprocessor Emulator - by Steven Goodwin (@MarquisdeGeek) of the room-sized machine built by James Newman and housed in the Museum of Computing History, in Cambridge, England. (Source)
- Merry8 - JavaScript Chip-8 emulator by Yifeng Wang
- Compucolor II Emulator - JavaScript Compucolor II Emulator
- Compukit UK101 - by David Stevenson
- ContrAltoJS - Pure JavaScript implementation of the ContrAlto Xerox Alto emulator (Source)
- COSMAC Elf-ish - simulator by William Donnelly
- DCMO5 Online - Thomson MO5 JavaScript emulator
- Dodo Playground - IDE and simulator for 6502-based Dodo homebrew game system by Peter Noyes

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- EMF Dragon - EMF-based Dragon Emulator - by Steven Goodwin (@MarquisdeGeek)
 - EMF Jupiter Ace - EMF-based ZX80 Emulator - by Steven Goodwin (@MarquisdeGeek) (Source)
 - Enterprise-128 JavaScript Emulator - by Gábor Lénárt “LGB”, based on JSSpeccy
 - ESP8266 Game Engine - a console-game-oriented virtual machine running on ESP8266, by Corax. (Source)
 - Gigatron - emulator of the present-day TTL console computer with Tiny Basic and games. Also Wozmon on a nested emulation of 6502. (Website)
 - Hack - emulator of the computer from nand2tetris, by diversen. (Source.)
 - Heathkit ET3400 - by Phil Mainwaring. Click “Do” then “0000”. (Instructions)
 - IBM 5110 Emulator by Norbert Kehrer runs Basic or APL.
 - JS99'er - TI-99/4A emulator written in JavaScript (Source)
 - jsH89 - Heathkit H89 emulator (runs CP/M) by Mark Garlanger
 - JSGS - Experimental JavaScript implementation of the Pico-8 fantasy console (Source)
 - jsMSX - The first MSX emulator 100% written in JavaScript
 - JsPspEmu - JavaScript PSP emulator (Source)
 - JSVecX - JavaScript port of the VecX Vectrex emulator
 - jupiler - Jupiter Ace emulator written in JavaScript (Source)
 - KM-Z80 web emulator for Sharp MZ-80K, by Katsumi Morimatsu. GOTO \$1200 to start KM-BASIC. (More information)
 - laser500emu emulator for Video Technology (VTech) Laser 350/500/700, by Antonino Porcino.
 - Little Man Computer a minimal CPU for teaching - emulator by Matthew Krutar. (Background)
 - Little Man Computer a minimal CPU for teaching - emulator by Paul Hankin. (Background)
 - Little Man Computer a minimal CPU for teaching - emulator by Peter Higginson. (Background)
 - Machine in a machine - Turing Machine Implementation in 1k from the JS1k competition
 - Marmmodore-1K - minimal 8-bit computer in 1k by Felipe Alfonso
 - NanoWasp - A MicroBee emulator
 - Nascom 2 emulator by Tommy Thorn. (J to start Basic) (Source)
 - One Instruction Set Computer (OISC) by Peter Crampton, presented by Brian L. Stuart. (Explanation)
 - Orao - Orao emulator by Hrvoje Cavrak (More information)
 - Oricutron - An emulator for the ORIC series of home computers, by Peter Gordon (Source)
 - PC-01 Lviv - An emulator for the PC-01 Lviv (Ukrainian home computer) (Source)
 - RISC Simulator - RISC Simulator with Fetch/Execute and register based CPU model, by Peter Higginson
 - RockyJS - Pebble watch interpreter/emulator
 - Radio-86RK Radio-86RK emulator in JavaScript (Intel 8080 based 8-bit Russian home computer) (Source)
 - Setunka - Ternary computing for the browser
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- SAP-1 JavaScript emulation of the Simple As Possible TTL machine from Malvino's book, Digital Computer Electronics. By Kenneth Ellis McCall. (Source)
 - Tejotron - Virtual breadboard, inspired by Ben Eater's 6502 computer
 - Turbo Pascal - A web-based Pascal compiler that runs a subset of Turbo Pascal 5.5 code
 - Vector06js - Vector-06C (AKA Бектор-06Ц) JavaScript emulator by Viacheslav Slavinsky. Also runnable here. (Source.)
 - Virt.js - JavaScript emulation library (Source)
 - Visual Computer a minimal CPU for teaching by Shimon Schocken. (Web site)
 - WebMSX - WebMSX, or simply WMSX, is a new MSX emulator designed for the Web (Source)
 - Wireworld computer - JavaScript port by Salvatore Aiello of the prime-generating computer implemented in the Wireworld cellular automaton, as described here.
 - WPCEmu - Williams Pinball Emulator by Michael Vogt

Adventure Game Engines

- Emscripten ScummVM - Emscripten fork of the ScummVM engine
- IFVMS - Infocom/Inform Web interpreter
- Parchment - Infocom/Inform Web interpreter
- ZZTJS - ZZT game engine in JavaScript
- ngPAWS - Professional Adventure Writer (PAW) Web interpreter

See also (lists of JavaScript emulators elsewhere)

- A Big List of Browser-Based Emulators by Richard Moss
- Qaop/JS – Emulator links by Jan Bobrowski

Additional Information

This resource collection is maintained by Frederic Cambus.

- Site: <https://www.cambus.net>

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