1 WEBASSEMBLY for Web Developers

GOOGLE I/O 2019

⇒ Emscripten → initally meant for asm.js

↳ quickly accomodated webassembly

ALSO does POSIX emulations

① Compiling the library.

↳ No support for threads and SIMD.

② Write "Bridge code" ⇒ Construction a function to call from Javascript.

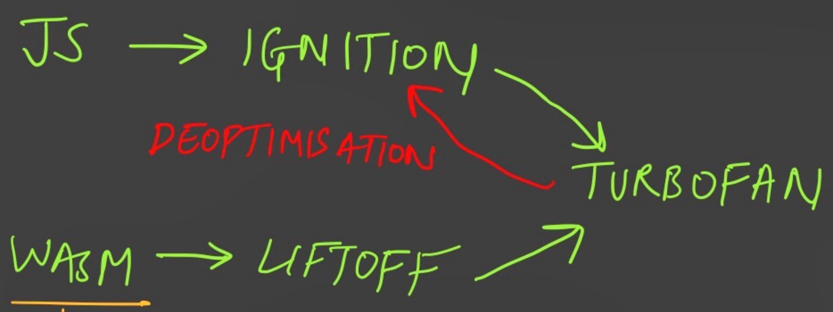
WASM-PACK → Turns RUST code to WebAssembly modules

↳ has smaller glue code as compared to C++.

JS vs WASM

Both have same PEAK PERFORMANCE

↳ will increase for webAssembly after threads and SIMD support.



↳ More predictable performance.

☆ WebAssembly threads :-

→ Porting multithreaded applications

→ SHARED LINEAR MEMORY as SharedArrayBuffers → Disabled in some browsers

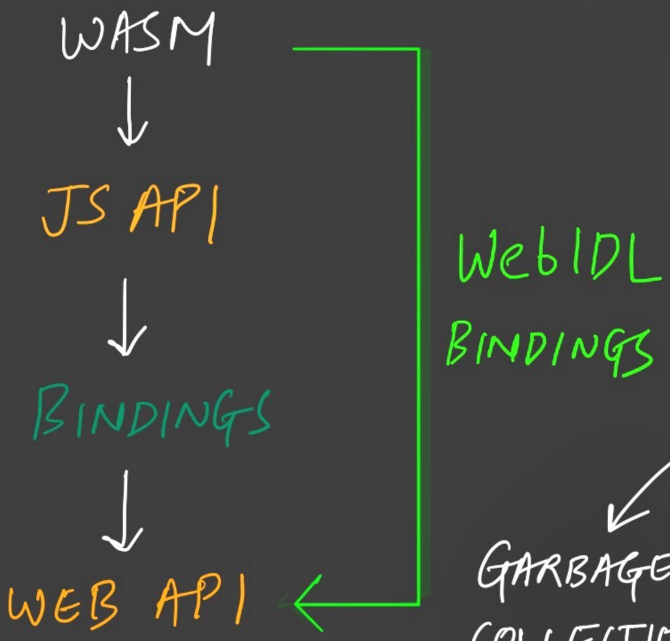
→ For webworkers

→ Atomic operations.

☆ SIMD Extension

☆ REFERENCE TYPES → Any ref type so that it can access arbitrary Javascript values

☆ WebIDL BINDINGS → Optimise calls from WASM to existing Web APIs in the browser.



☆ OTHER FEATURES

- GARBAGE COLLECTION
  High level languages
- TAIL CALL OPTIMIZATION
  Functional languages
- EXCEPTION HANDLING
  C++ style exceptions.