POLYTECH GRENOBLE

UGA Université Grenoble Alpes

WebAssembly

Morgan Crociati

Sommaire

Résumé

Résumé

Web + Assembleur

2017

source: fr.wikipedia.org

source: fr.wikipedia.org

Résumé

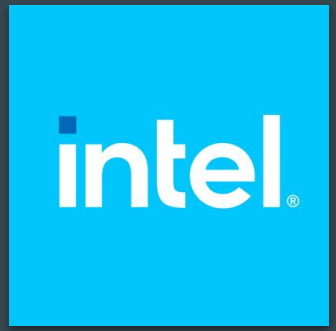
WebAssembly (abbreviated *Wasm*) is a binary instruction format for a stack-based virtual machine. Wasm is designed as a portable compilation target for programming languages, enabling deployment on the web for client and server applications.

source: webassembly.org

source: google.fr

source: microsoft.fr

source: apple.fr



source: intel.fr

source: redhat.com

Résumé

Efficient and fast

Safe

Part of the open web platform

Portable

Open and debuggable

Origine

Origine

2012

Alon Zakai

source: commons.wikimedia.org

source: mozilla.org

Origine

2013

asm.js

an extraordinarily optimizable, low-level subset of JavaScript

source: asmjs.org

```
function strlen(ptr) { // calculate length of C string
  ptr = ptr|0;
  var curr = 0;
  curr = ptr;
  while (MEM8[curr]|0 != 0) {
    curr = (curr + 1)|0;
  }
  return (curr - ptr)|0;
}
```

source: Alon Zakai, emscripten talk, asmjs.org

moz://a

source: mozilla.org

Origine

source: fr.wikipedia.org

source: fr.wikipedia.org

source: mozilla.org

source: fr.wikipedia.org

2015

source: fr.wikipedia.org

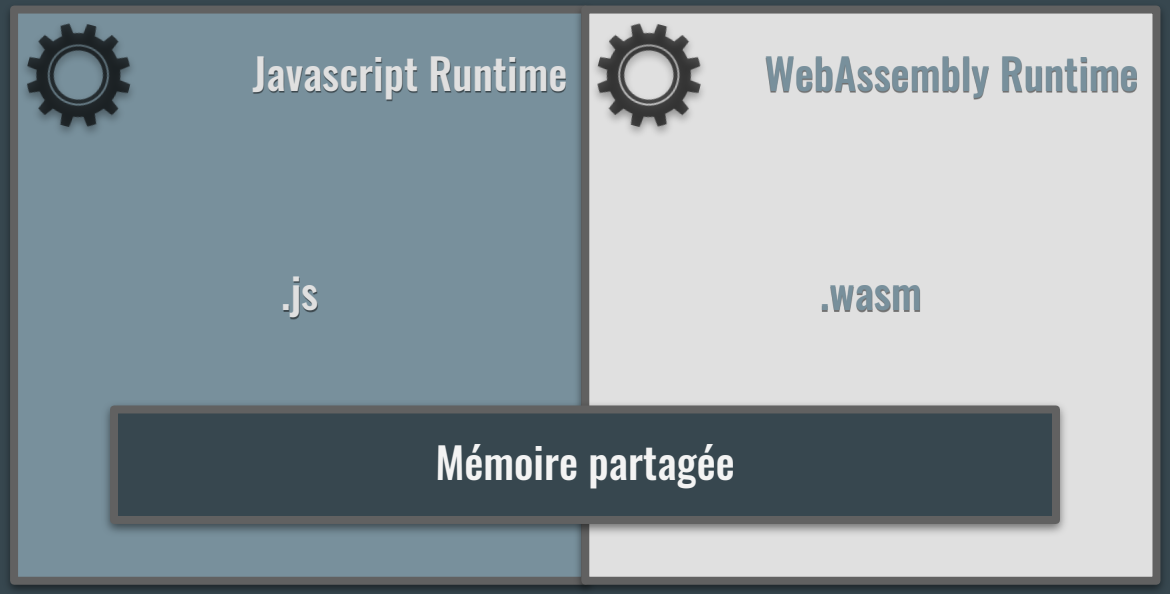
Fonctionnement

Fonctionnement

.wat

.wasm

Bytecode



source: gear #1261419, clipart-library.com

Démonstration

Conclusion

Conclusion

C/C++
Rust
AssemblyScript
C#
F#
Go
Kotlin
Swift
D
Pascal
Zig

GPU
Multithreading
Unification des librairies
Garbage Collector
Exception handling

Conclusion

HTML

CSS

source: fr.wikipedia.org

Question