

Aplication development in JavaScript

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v8

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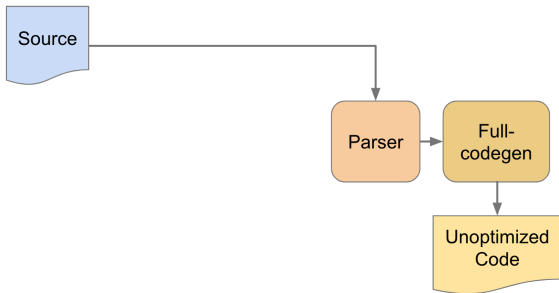
node.js

further resources

JS execution overview

- ▶ single-threaded
 - ▶ parse
 - ▶ JIT compile
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 - ▶ call stack
 - ▶ task & microtask queues
 - ▶ event loop
 - ▶ render queue
 - ▶ heap
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 - ▶ primitive values - number, string, boolean, symbol
 - ▶ referenced values - objects, arrays, function

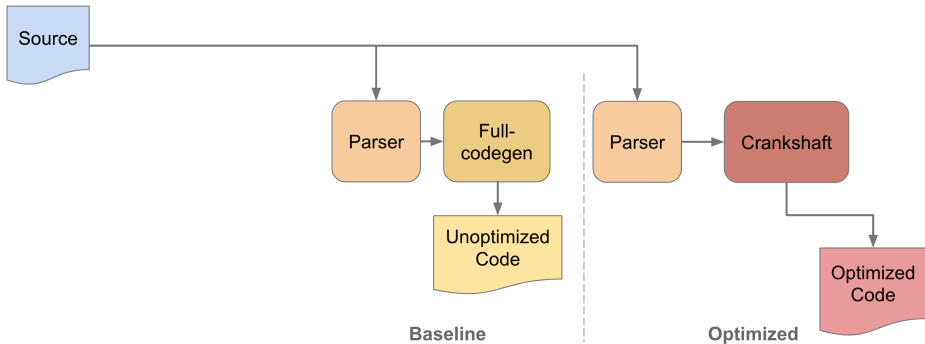
v8 Compiler Pipeline (2008)



¹<https://v8.dev/blog/ignition-interpreter>

²<https://www.youtube.com/watch?v=r50WCtuKiAk>

Compiler Pipeline (2010)

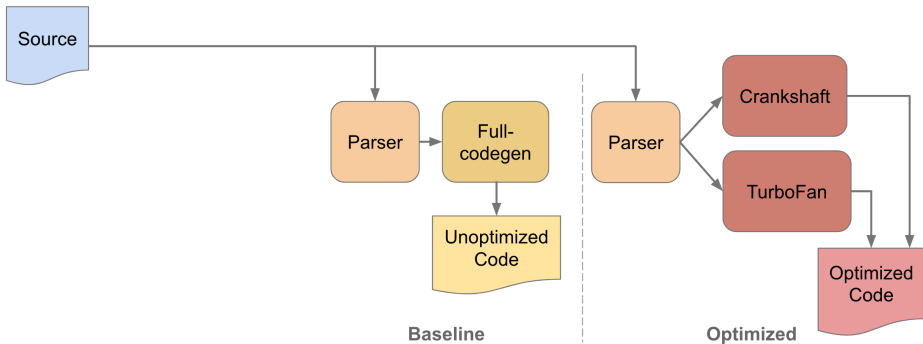


Google

¹<https://v8.dev/blog/ignition-interpreter>

²<https://www.youtube.com/watch?v=r50WCtuKiAk>

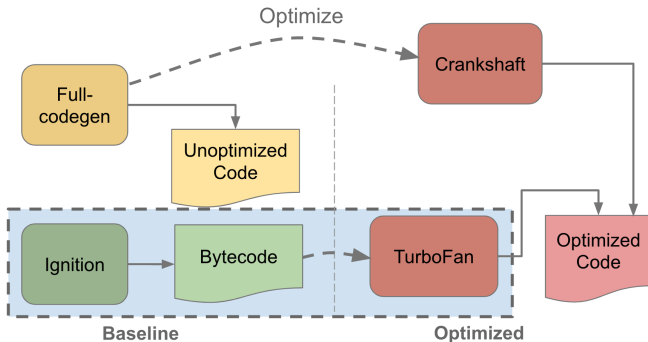
Compiler Pipeline (2015)



¹<https://v8.dev/blog/ignition-interpreter>

²<https://www.youtube.com/watch?v=r50WCtuKiAk>

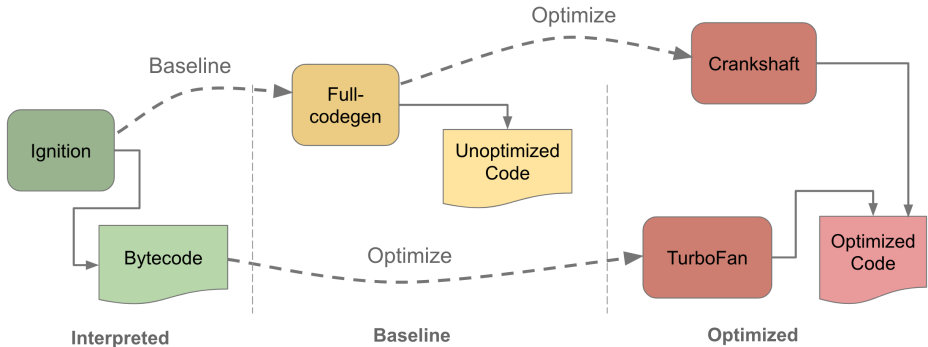
Compiler Pipeline (2016)



¹<https://v8.dev/blog/ignition-interpreter>

²<https://www.youtube.com/watch?v=r50WCtuKiAk>

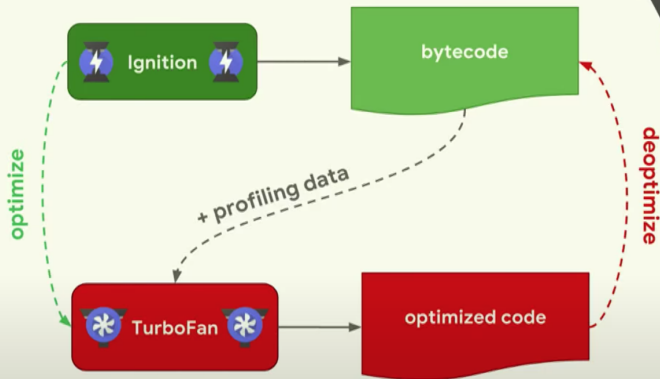
Compiler Pipeline (early 2017 ?)



¹<https://v8.dev/blog/ignition-interpreter>

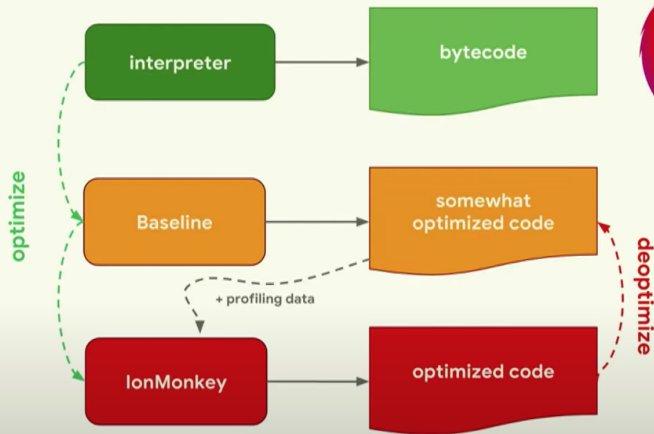
²<https://www.youtube.com/watch?v=r50WCtuKiAk>

Browsers



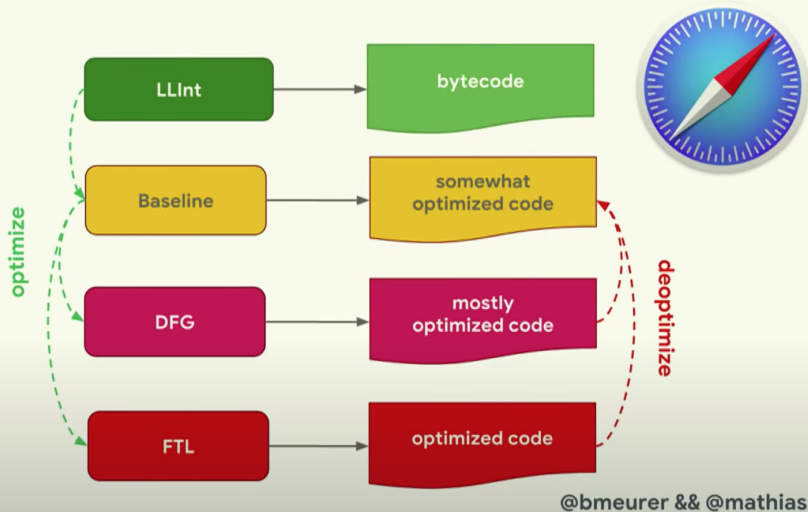
@bmeurer && @mathias

¹<https://slidr.io/mathiasbynens/javascript-engines-the-good-parts>

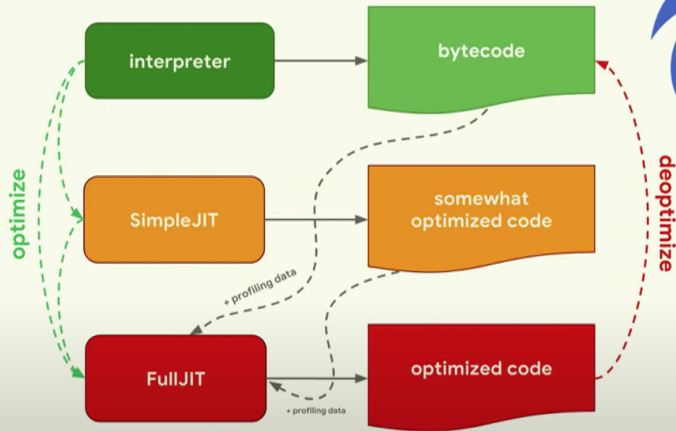


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¹<https://slidr.io/mathiasbynens/javascript-engines-the-good-parts>



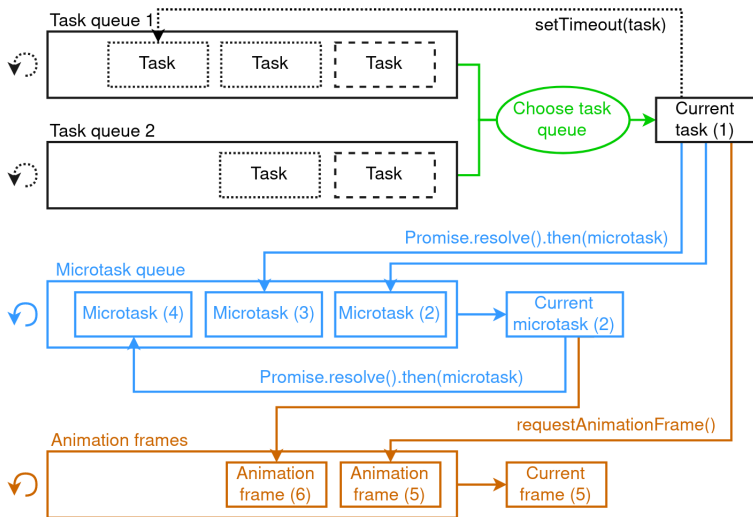
¹<https://slidr.io/mathiasbynens/javascript-engines-the-good-parts>



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¹<https://slidr.io/mathiasbynens/javascript-engines-the-good-parts>

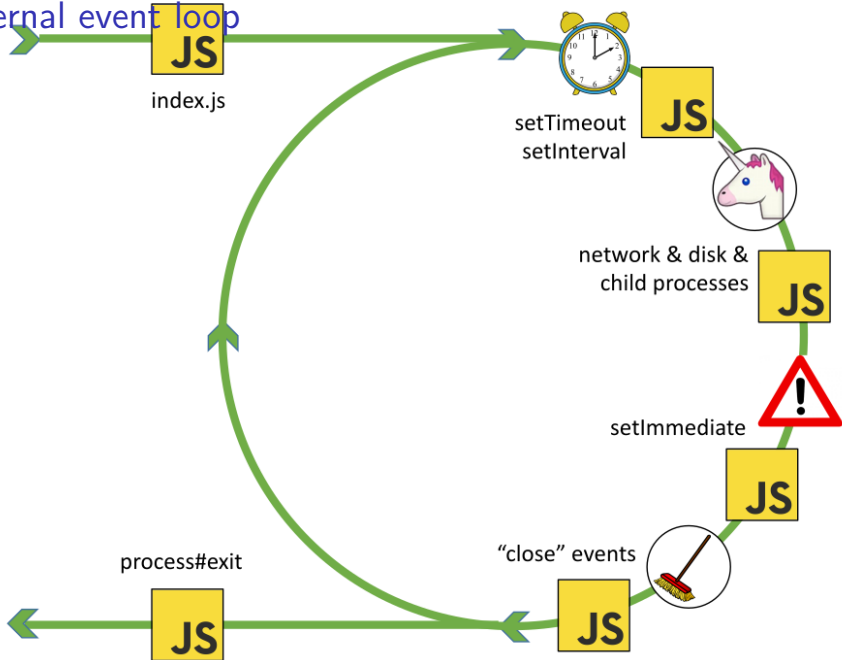
Execution



→ Current tick → Later tick ↻ Loops until empties (1) Execution order

— Task — Event loop logic — Microtask — Animation frame

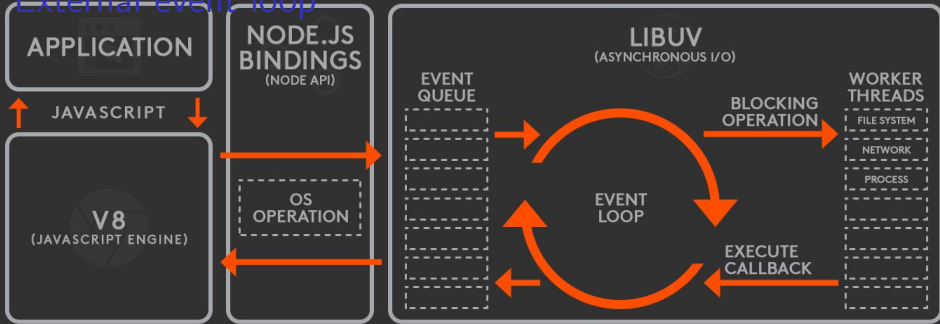
Internal event loop



¹Bert Belder, <https://www.youtube.com/watch?v=PNa90Majw9w>

THE NODE.JS SYSTEM

External event loop



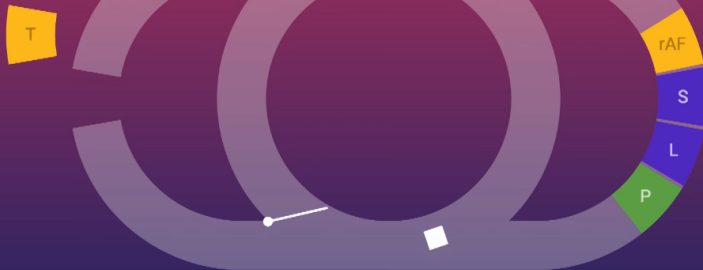
¹@TotesRadRichard,



YouTube SK

further resources

Search



14:18 / 35:11



Jake Archibald: In The Loop - JSConf.Asia

282,715 views · Feb 9, 2018



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1 Jake Archibald, <https://www.youtube.com/watch?v=cCOL7MC4P10>