



Desktop UIs & Web Tech

Roman Liutikov
@roman011a





👍 **Ease of development** 👍
👍 **Cross-platform** 👍



👎 Executable size 👎

👎 Memory & CPU consumption 👎

👎 Low performance budget 👎

Electron



=

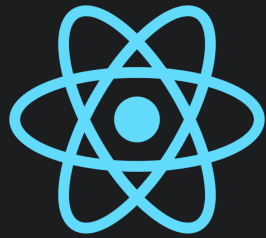
Cordova



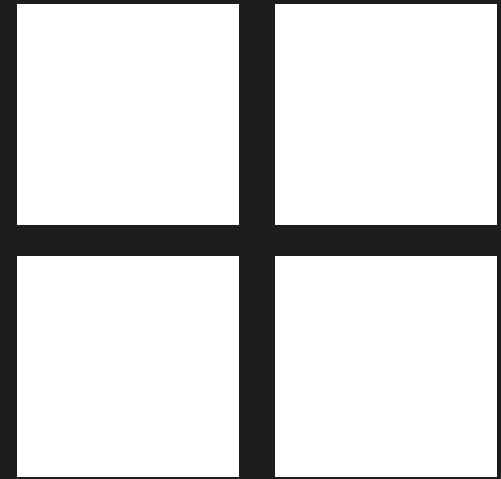
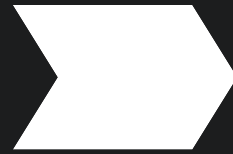


=

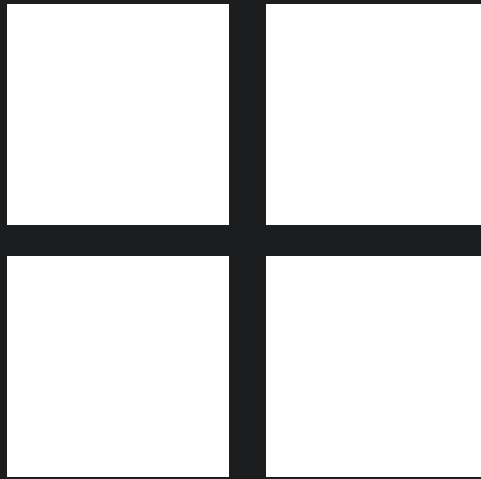




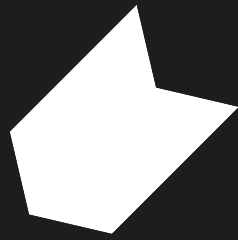
**React
Native**



Platform UI



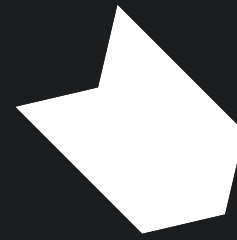
Platform UI



iOS



Android



WPF

A screenshot of the Visual Studio Code editor interface. The window title is "www.ts - node-express-ts". The left sidebar shows the "EXTENSIONS" view with a list of installed and available extensions, including C#, Python, Debugger for Chrome, C/C++, Go, ESLint, and PowerShell. The main editor area shows a TypeScript file named "app.ts" with the following code:

```
1 import app from './app';
2 import debugModule = require('debug');
3 import http = require('http');
4
5 const debug = debugModule('node-express-typescript:server');
6
7 // Get port from environment and store in Express.
8 const port = normalizePort(process.env.PORT || '3000');
9 app.set('port', port);
10
11 // create
12 const server = export
13 server.listen
14 server.on
15 server.on
16
17 /**
18 * Normal
19 * port const port: number | string | boolean
20 */
21 function normalizePort(val: any): number|string|boolean {
22   let port = parseInt(val, 10);
23   if (isNaN(port)) {
24     // named pipe
25     return val;
```

Cross-Platform UI

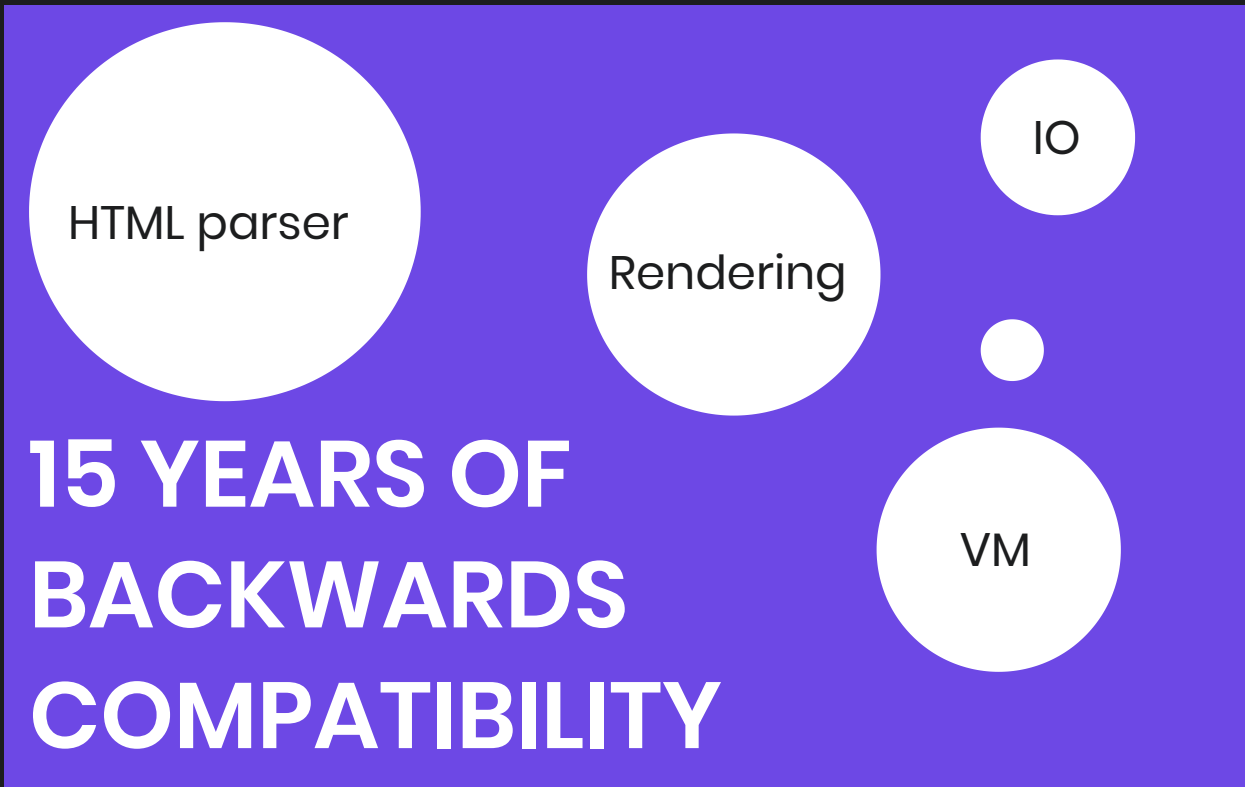
macOS

Windows

Linux

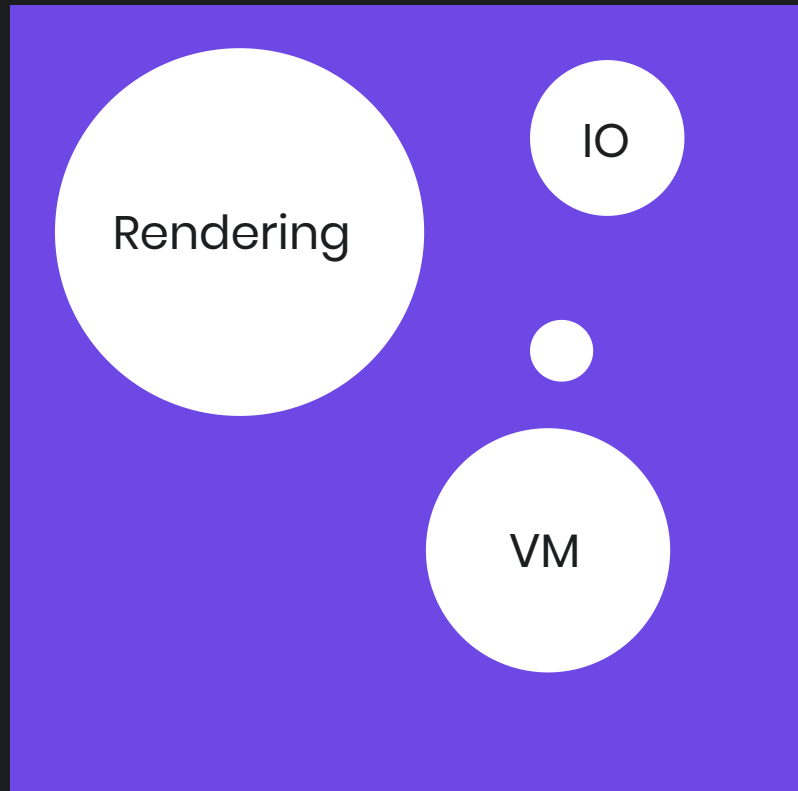
Modern Browser

Uncontrolled env



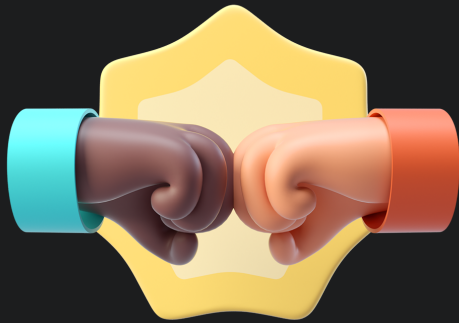
Desktop

Controlled env

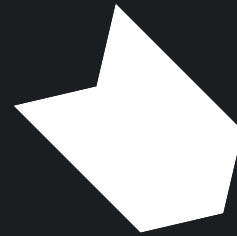
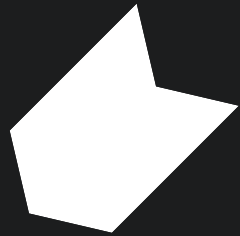


Rendering

CPU vs GPU



C++/Rust/OCaml/...



Native 👍

🙄 WASM

Performance



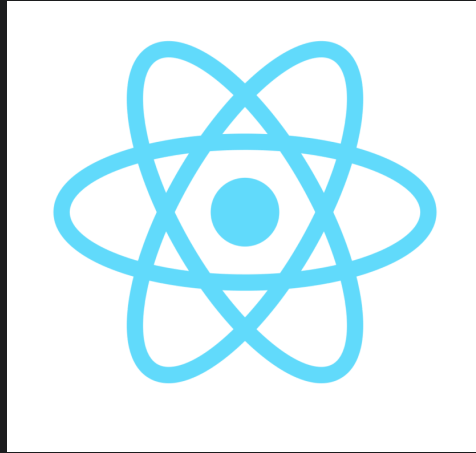
Ease of development



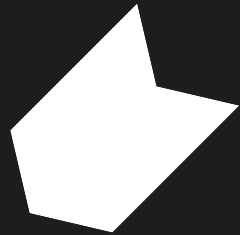




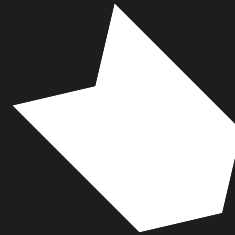




**Desktop UI
primitives**



Desktop



Web

**React Native
for
~~Web~~ Desktop
?**

“Ideal” stack

JS VM



Shared UI primitives



React renderer



OpenGL/GPU



React



Browser



✓ Rendering engine

+

? Layout engine

+

? Accessibility

+

? Platform APIs Bindings



@roman01la