

ELECTRON WORKSHOP

DAVID NEAL



@REVERENTGEEK

Up Ahead

- Intro to Electron
- Create an App
- Live Reload
- Debug
- IPC
- Package
- Tests



Set up and initialize your project

<https://bit.ly/electron-workshop>

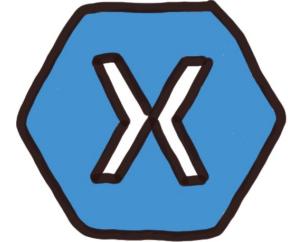
- or -

<https://github.com/reverentgeek/electron-workshop/wiki>

STOP!

After completing Exercise 1, Part 1

.NET + Mono + Xamarin

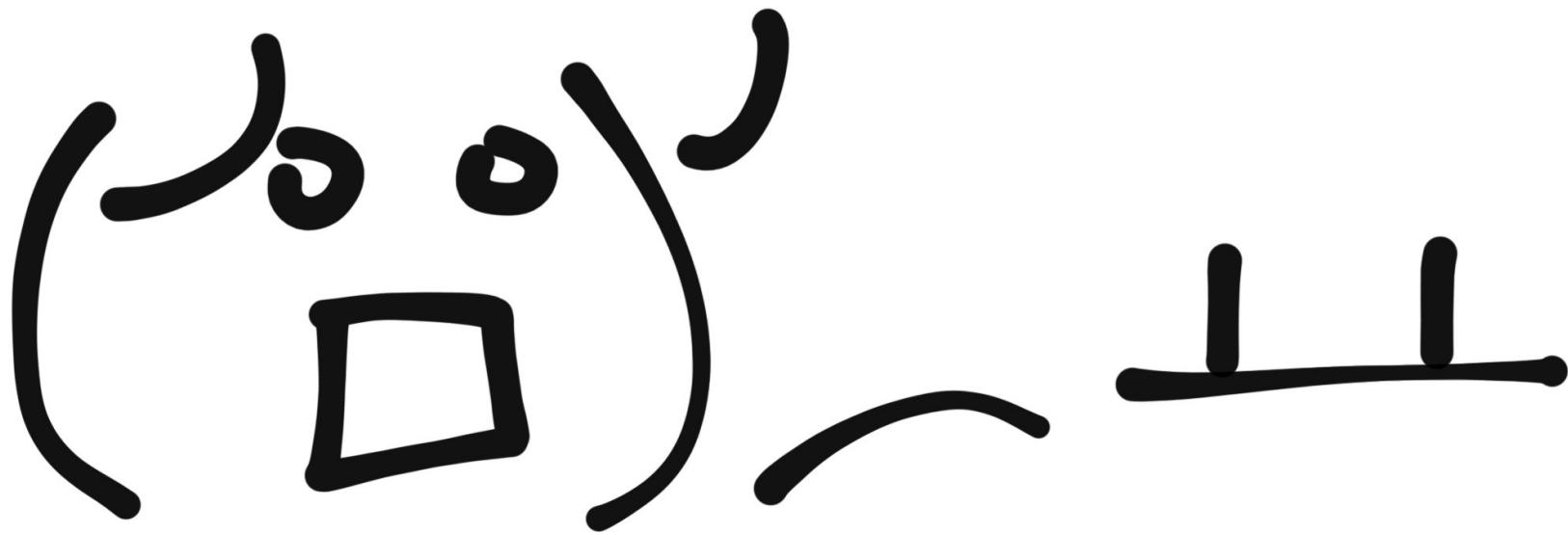


Pros:

- Shared .NET code base

Cons:

- Xamarin Mac != Xamarin iOS/Android
- Native UI is hard
- Deployment
- ~~Licensing~~

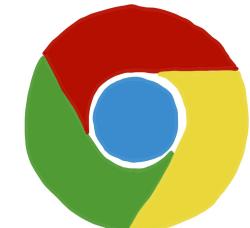
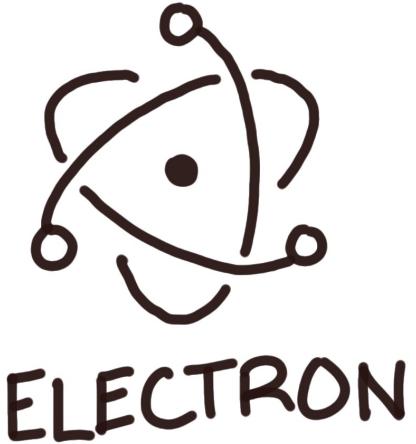
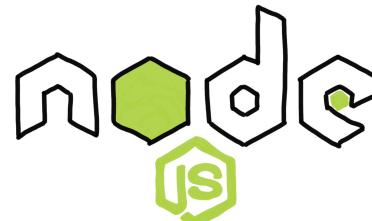
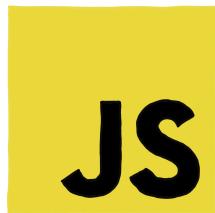


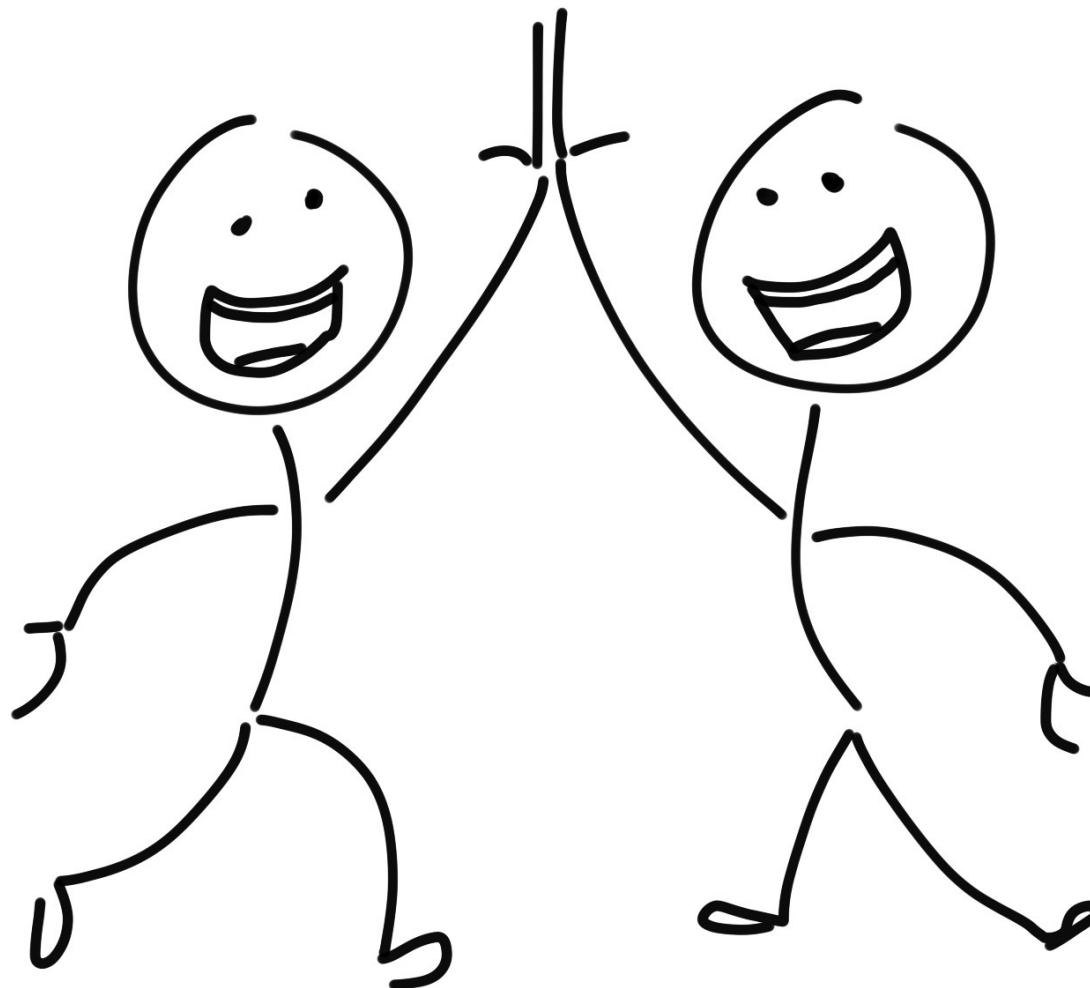
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Electron

Pros:

- HTML + CSS + JavaScript
- Node.js + Chromium
- No deployment dependencies





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Not Your Dad's



JAVASCRIPT

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Electron

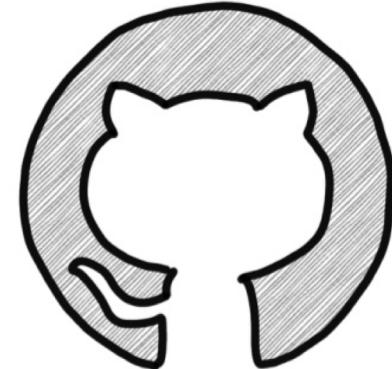
Cons:

- HTML + CSS + JavaScript



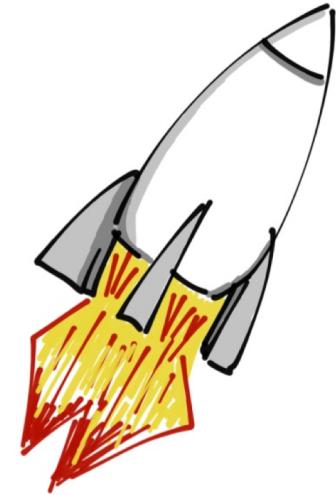
History

- Created by GitHub for Atom
- Formerly Atom Shell
- Active since January 2013
- 1.0 release May 2016
- 2.0 release May 2018



Electron Features

- Rapid development
- Themes
- Shared code/UI
- Deployment + “silent” updates
- Native UX



Why Desktop Apps?

- Offline
- Printers, devices, other local hardware
- On-premises
- Internal, LOB
- Edit local files
- App Store
- Kiosk
- Desktop > Intranet
- Sometimes it “just feels right”



Desktop App Ideas

- Disconnected data entry
 - Editor
 - Time management
 - Media player
 - Email client
 - Messaging, collaboration
 - Kiosk
 - Mapping, route planner
 - Social media client
 - Calendar
- Bulk media editor
 - File management, backup
 - Document generation, reading
 - Audio/video conferencing
 - Games



Atom

The screenshot shows the Atom code editor interface. The left sidebar displays a project structure for a folder named 'upsync' containing files like .git, specs, .eslintrc.js, .gitignore, index.js (which is selected), LICENSE, package.json, README.md, and upsync.png. The main editor area shows the content of 'index.js' with syntax highlighting for JavaScript. The status bar at the bottom indicates the file is 'index.js 1:1', encoding is 'UTF-8', the language is 'JavaScript', and it's part of a 'master' branch with 0 files.

```
1 const AsyncFunction = Object.getPrototypeOf( async function() {} ).construct
2
3 const nameFunction = ( originalName, func ) => {
4     const name = originalName.length === 0 ? "Anonymous" : originalName.charAt(0).toUpperCase() + originalName.slice(1);
5     const fname = `async${ name }`;
6     return { async [ fname ]( ...args ) {
7         return func( ...args );
8     } }[ fname ];
9 }
10
11 module.exports = callBackStyleFunction => {
12     if ( !callBackStyleFunction ) {
13         throw new Error( "Must be a callback-style function" );
14     }
15
16     if ( AsyncFunction.prototype.isPrototypeOf( callBackStyleFunction ) ) {
17         return callBackStyleFunction;
18     }
19
20     if ( typeof callBackStyleFunction !== "function" ) {
```

Slack

Slack - LeanKit

LeanKit ▾ David Neal 🏠

All Unreads All Threads Starred # all-hands-play # all-hands-work # analytics-squad # company-announceme... # franklin-visits # gifs # pd # pd-analytics # pd-deadpool # random # speakerships

gifs

★ | 8 20 | 0 | http://media.giphy.com/media/1

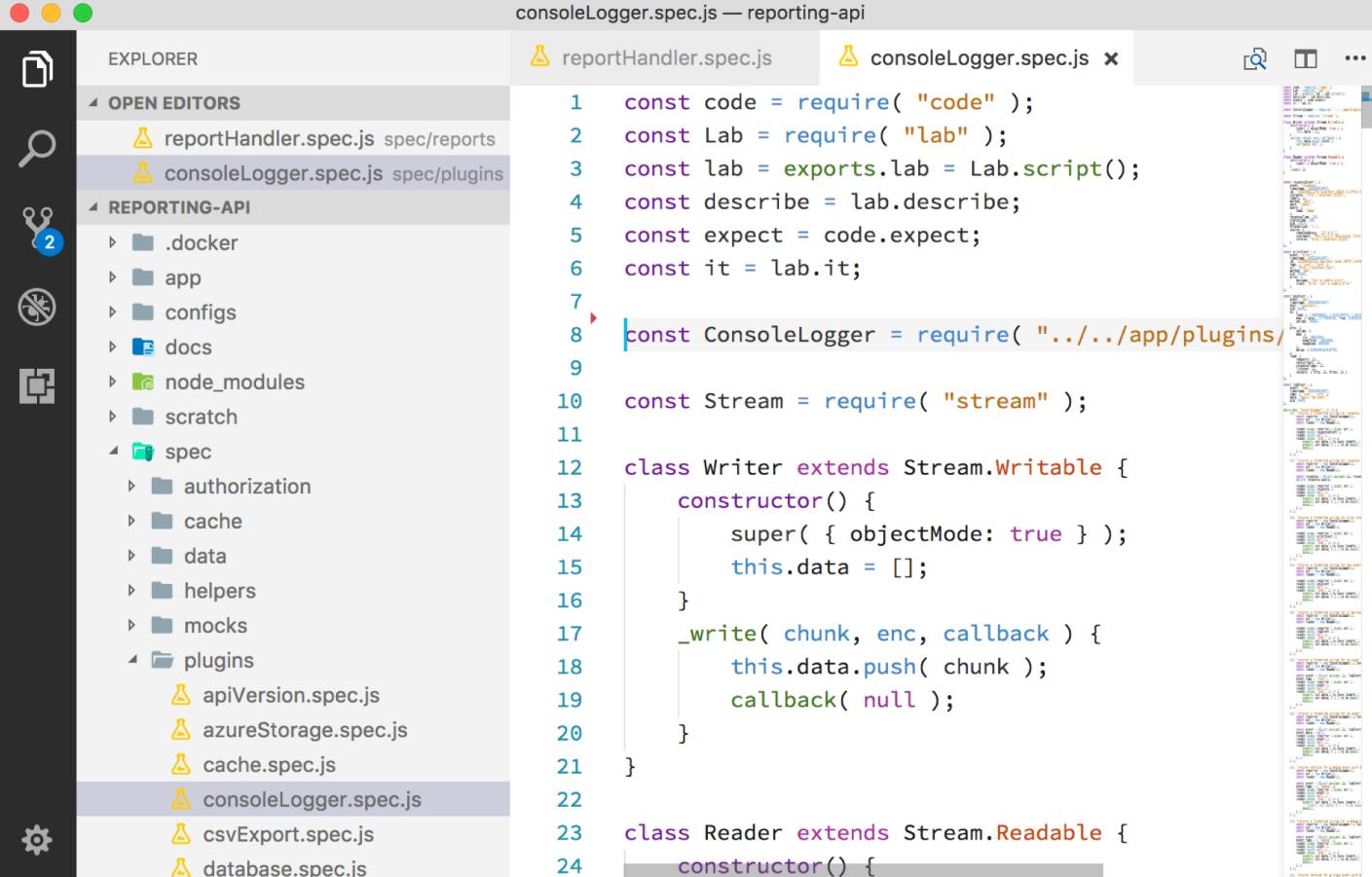
Tuesday, September 12th



John Campbell 4:16 PM
http://i.imgur.com/b8EXeAE.gif (2MB) ▾



Visual Studio Code



The screenshot shows the Visual Studio Code interface with the following details:

- EXPLORER View:** Shows the project structure with files like `reportHandler.spec.js`, `consoleLogger.spec.js`, and several `spec` files under `plugins`.
- Editor Tab Bar:** Displays tabs for `reportHandler.spec.js` and `consoleLogger.spec.js`.
- Editor Content:** The code for `consoleLogger.spec.js` is displayed, defining a `Writer` class that extends `Stream.Writable`. It includes methods for `_write` and `_read`.
- Bottom Status Bar:** Shows the current file is `feature-exceptions-export*`, line count is 7, column 1, tab size is 4, encoding is UTF-8, and the language is JavaScript.

Postman

The screenshot shows the Postman application interface. At the top, there's a dark header bar with the word "Postman" in white. Below it, a secondary navigation bar has "Builder" and "Team Library" tabs, with "Builder" being the active one. On the far right of the header, there are icons for a user profile ("David"), notifications, and other settings.

The main workspace is titled "Get Board". On the left, a sidebar titled "Collections" lists several collections: "LeanKit API" (54 requests), "Bandit Software", "Board API", and "Get Board". The "Get Board" collection is currently selected, highlighted with an orange background. It contains five API requests: "Get Boards", "Get Board", "Get Board Identifiers", "Get Board Archive", "Get Newer if Exists", "Check for Updates", "Get Board History Since", and "Get Board Backlog". The "Get Board" request is also highlighted with an orange background.

The central area displays the "Get Board" request details. The method is set to "GET" and the URL is "https://reverentgeek.leankit.com/kanban/api/boards/256064019". The "Headers" tab is selected, showing three headers: "Authorization", "Accept", and "Content-Type", each with their respective values. The "Body" tab is also visible below.

At the bottom of the interface, the response status is shown as "Status: 200 OK Time: 327 ms". The response body is displayed in a JSON editor, showing the first few lines of the JSON data, which includes a key "ReplyData": [{ }]. There are buttons for "Pretty", "Raw", "Preview", and "JSON" to switch between different response formats.

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GitHub Desktop

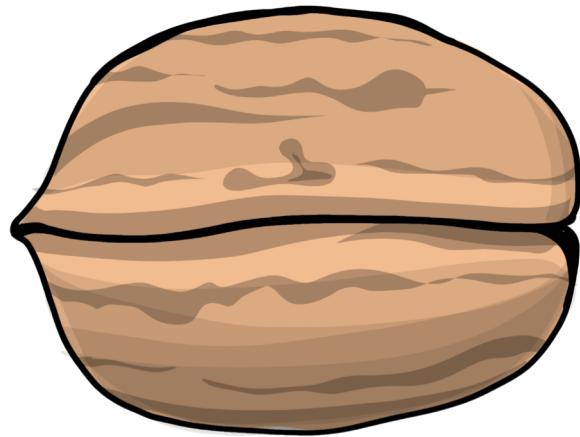
The screenshot shows the GitHub Desktop application interface. At the top, there are three tabs: "Changes" (selected), "History", and a third tab that is mostly obscured. Below these tabs, the repository name "desktop" and the current branch "progress-reporting" are displayed. To the right of the branch, there is a "Publish branch" button with the sub-instruction "Publish this branch to GitHub".

The main area displays a code diff for the file "app/src/ui/app.tsx". The left column shows line numbers and the right column shows the corresponding code. The code diff highlights changes made to the file:

```
@@ -956,6 +956,8 @@ export class App extends React.Component<IAppProps, IAppState> {
 956     956
 957     957     const state = selection.state
 958     958     const remoteName = state.remote ? state.remote.name : null
 959 +    959     +     const progress = state.pushProgress || state.pullProgress
 960 +    960
 959     961         return <PushPullButton
 960     962             dispatcher={this.props.dispatcher}
 961     963                 repository={selection.repository}
@@ -963,7 +965,7 @@ export class App extends React.Component<IAppProps, IAppState> {
 963     965                     remoteName={remoteName}
 964     966                     lastFetched={state.lastFetched}
 965     967                     networkActionInProgress={state.pushPullInProgress}
 966 -    966             -     progress={state.pushProgress}
 968 +    968             +     progress={progress}
 967     969         />
 968     970     }
 969     971 }
```

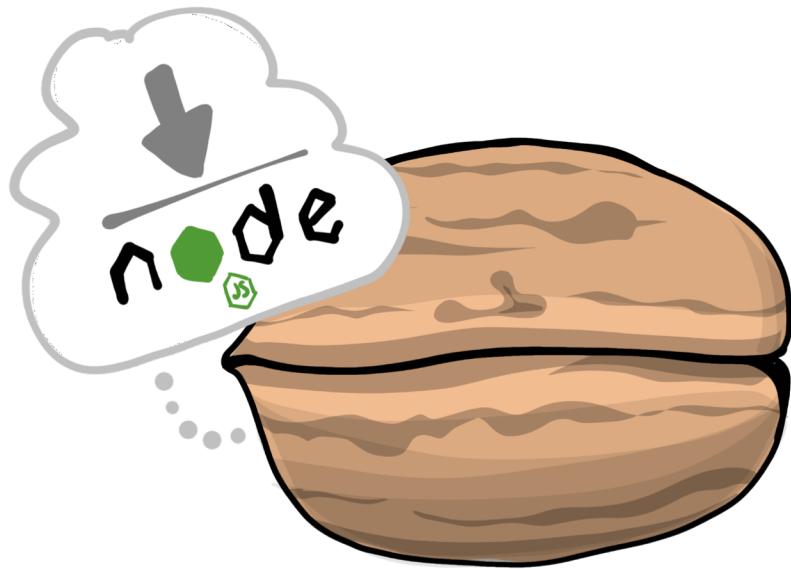
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How To ELECTRoN



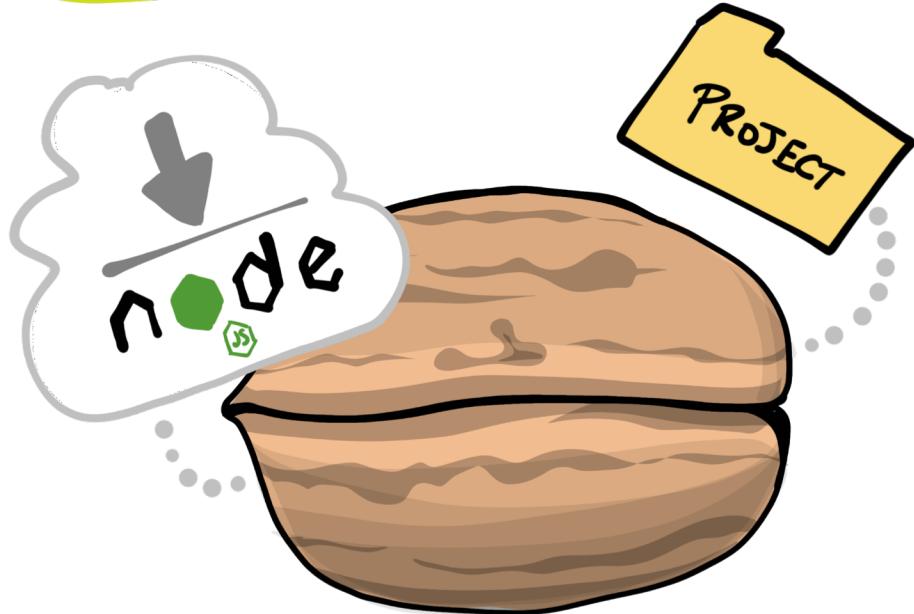
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How To ELECTRoN



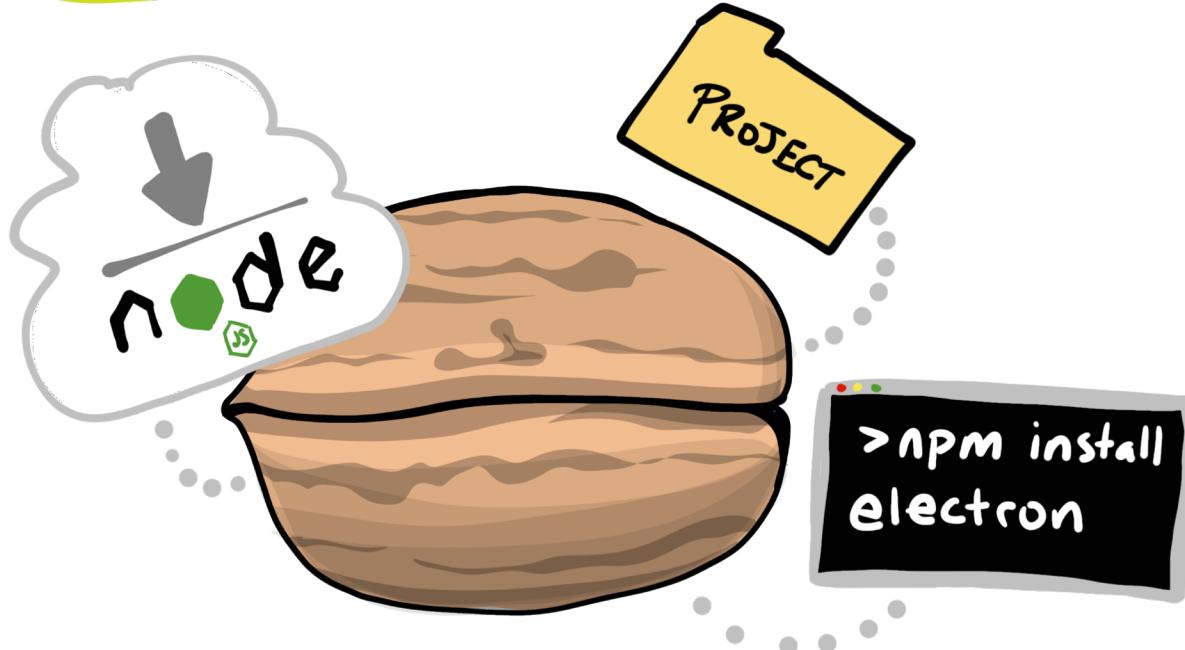
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How To ELECTRoN



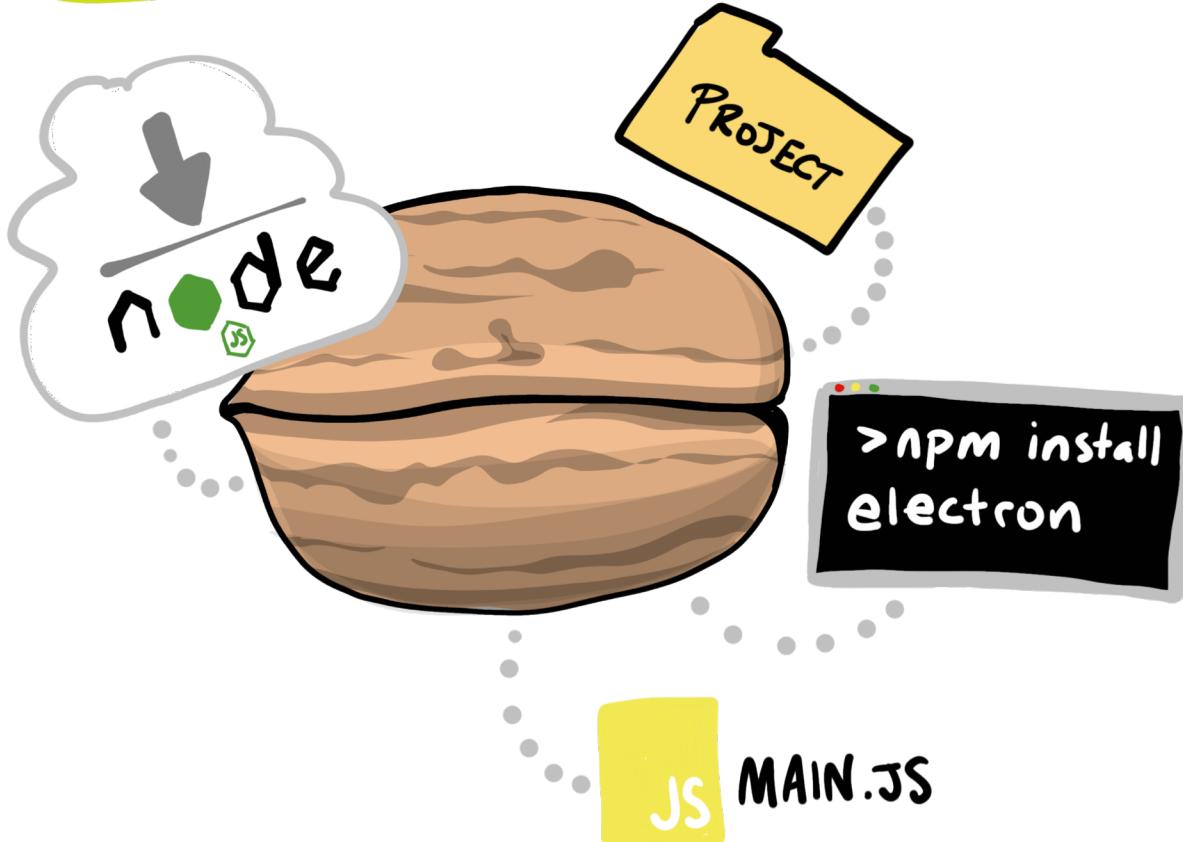
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How To ELECTRoN



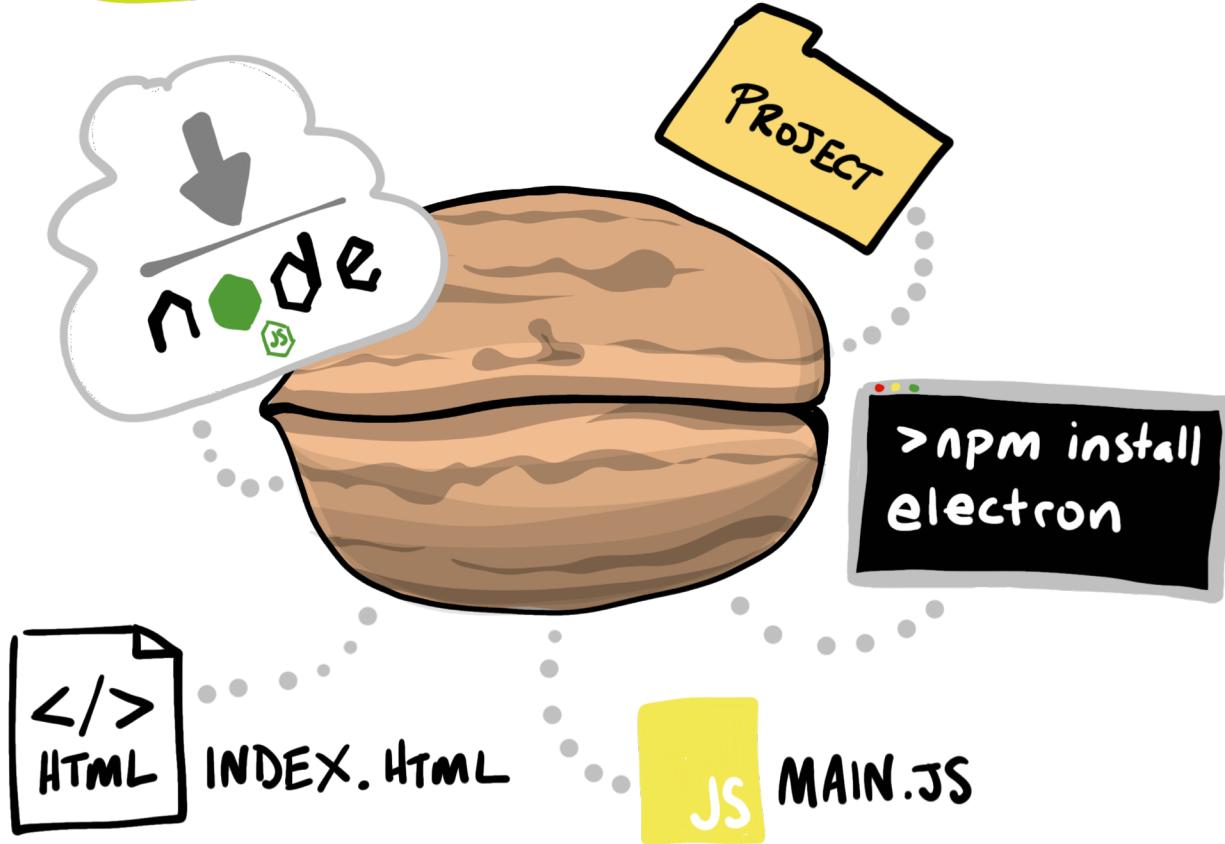
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How To ELECTRoN



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How To ELECTRoN



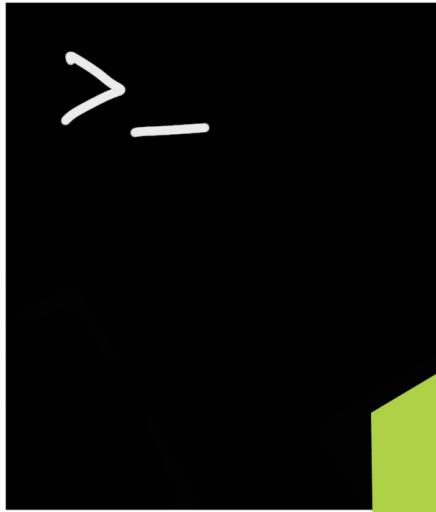
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PROCESS

(main.js)

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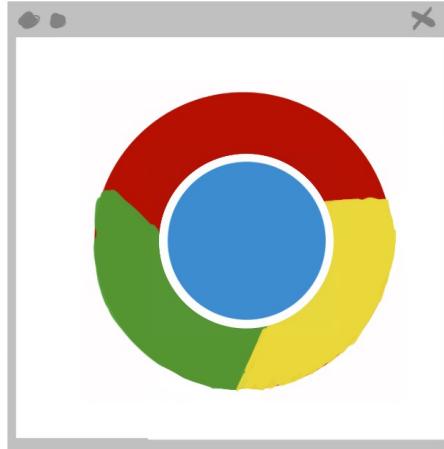
PROCESS

(main.js)

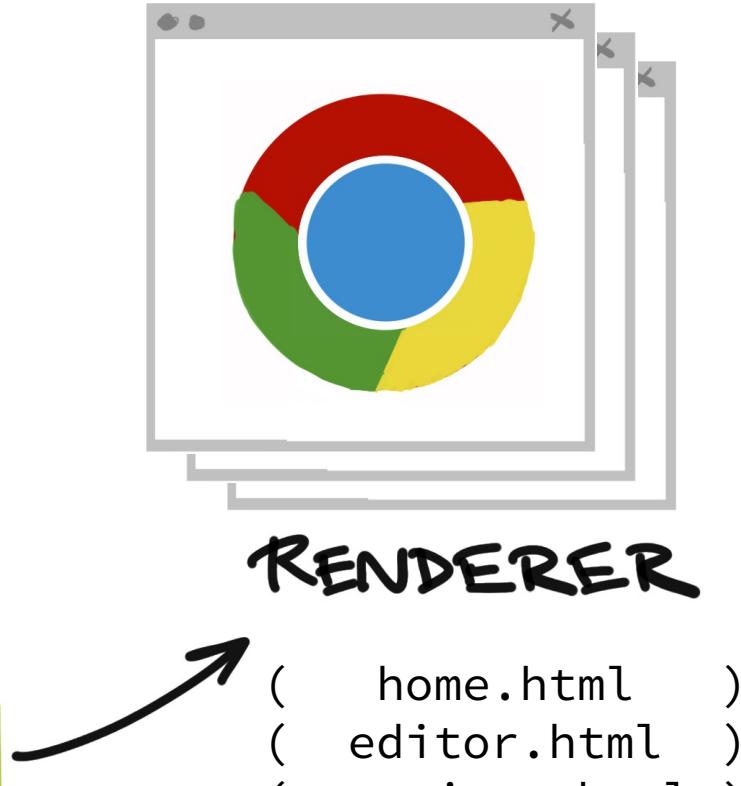
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(main.js)



RENDERER
(index.html)



main.js

```
1 const electron = require( "electron" );
2 const app = electron.app;
3 const BrowserWindow = electron.BrowserWindow;
4 let mainWindow;
5
6 app.on( "ready", () => {
7     mainWindow = new BrowserWindow( {
8         width: 400,
9         height: 300
10    } );
11    mainWindow.loadURL( `file://${ __dirname }/index.html` );
12} );
```

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2 const app = electron.app;
3 const BrowserWindow = electron.BrowserWindow;
4 let mainWindow;
5
6 app.on( "ready", () => {
7     mainWindow = new BrowserWindow( {
8         width: 400, // x, y, minWidth, minHeight, movable,
9         height: 300 // resizable, alwaysOnTop, kiosk
10    } );
11    mainWindow.loadURL( `file://${ __dirname }/index.html` );
12 } );
```

main.js

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12 } );
```

index.html

```
1  <!DOCTYPE html>
2  <html>
3  <head>
4      <meta charset="UTF-8">
5      <title>Electron Demo</title>
6  </head>
7  <body>
8      <h1>Hello World!</h1>
9  </body>
10 </html>
```

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5      <title>Electron Demo</title>
6  </head>
7  <body>
8      <h1>Hello World!</h1>
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10 </html>
```

```
> npm start
```

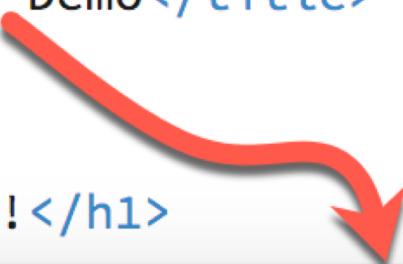
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index.html

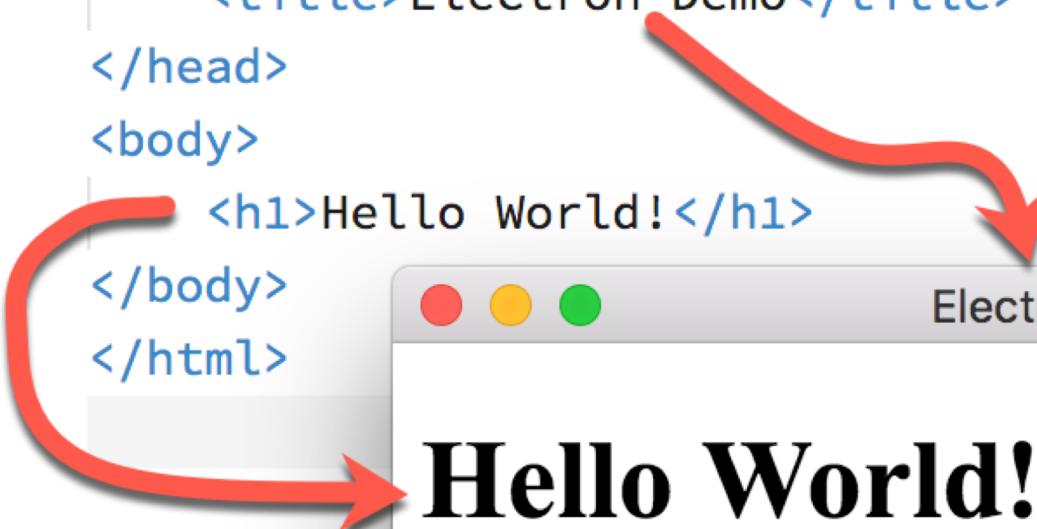
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Hello World!

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7  <body>
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9  </body>
10 </html>
```



index.html

```
7 <body>
8     <h1>Hello World!</h1>
9     <div id="info"></div>
10    <script>
11        const msg = `Node.js: ${process.versions.node},
12                      Electron: ${ process.versions.electron},
13                      Chrome: ${ process.versions.chrome}`;
14        document.getElementById("info").textContent = msg;
15    </script>
16 </body>
```

index.html

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7 <body>
8     <h1>Hello World!</h1>
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12                      Electron: ${ process.versions.electron},
13                      Chrome: ${ process.versions.chrome}`;
14        document.getElementById("info").textContent = msg;
15    </script>
16 </body>
```

index.html

```
18      const fs = require( "fs" );
19      fs.readdir( process.env.HOME, ( err, entries ) => {
20          entries.forEach( entry => {
21              if ( !entry.startsWith( "." ) ) {
22                  const li = document.createElement( "li" );
23                  li.textContent = entry;
24                  homeList.appendChild( li );
25              }
26          } );
27      } );
28  </script>
29 </body>
```

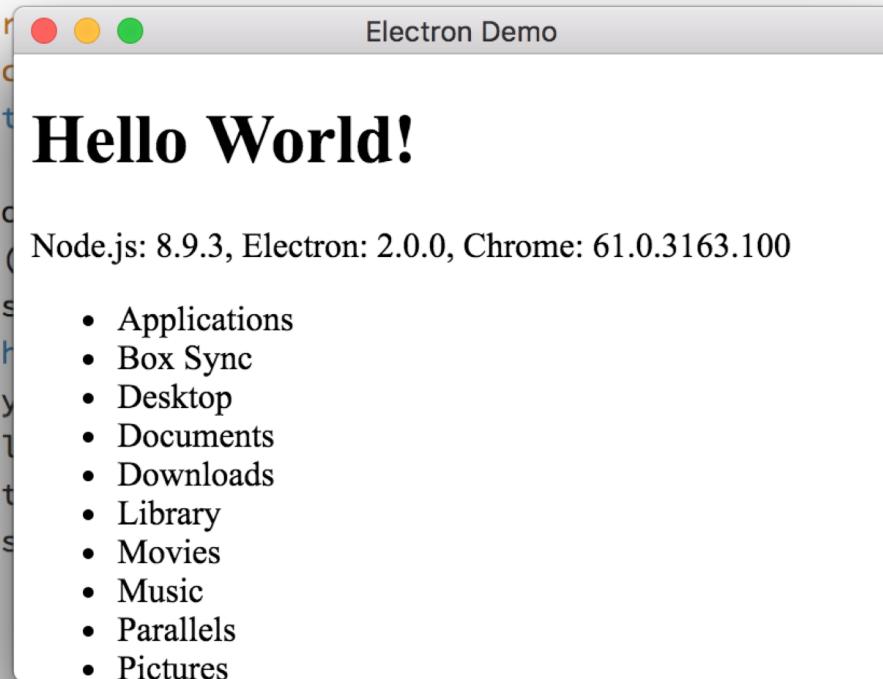
index.html

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18  const fs = require( "fs" );
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```

index.html

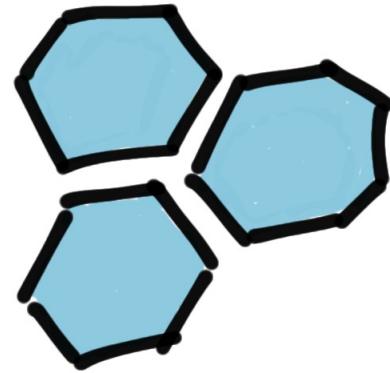
```
18  const fs = require( "fs" );
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```

```
7 <body>
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10  <ul id="homeList"></ul>
11  <script>
12    const msg = `Node.js: ${process.versions.node},
13      Electron: ${ process.versions.electron },
14      Chrome: ${ process.versions.chrome }`;
15  document.getElementById('info').innerHTML = msg;
16
17  const homeList = document.querySelector('#homeList');
18  const fs = require('fs');
19  fs.readdir( process.env.HOME, { withFileTypes: true } )
20    .then( entries => entries.forEach( entry =>
21      if ( !entry.isDirectory() ) return;
22      const li = document.createElement('li');
23      li.textContent = entry.name;
24      homeList.appendChild(li);
25    ) );
26  } );
27
28  </script>
29 </body>
```



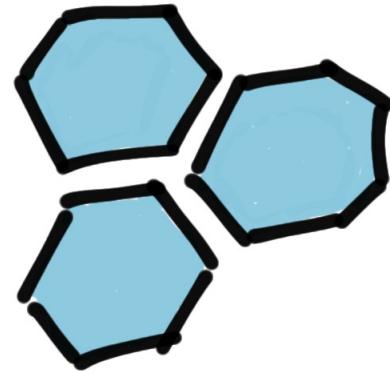
Process modules

- app
- ipc
- dialog
- menu, menu-item
- power-monitor
- tray



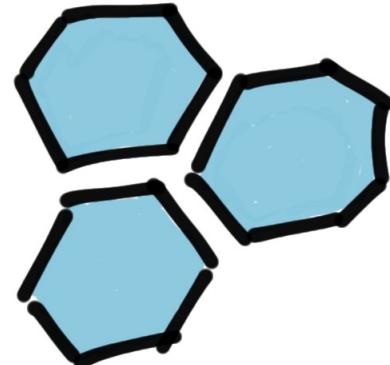
Render modules

- ipc
- remote
- web-frame



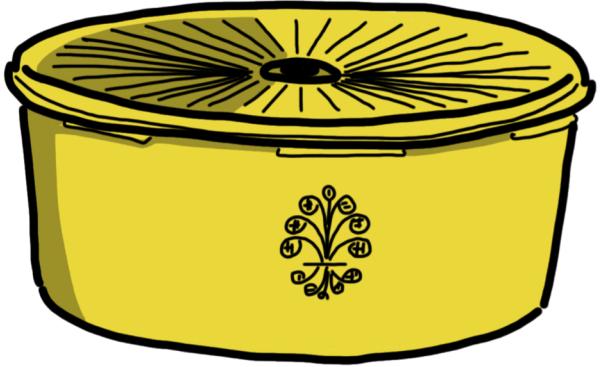
Modules available to both

- clipboard
- crash-reporter
- native-image
- screen
- shell



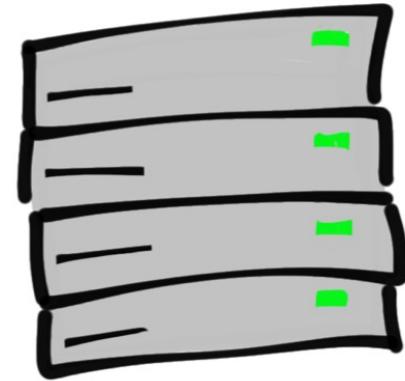
Local Storage

- Read/write .json files
 - Pro tip: use fs-jetpack
- nedb
- pouchdb



Relational DB Storage

- seriate (SQL Server)
- pg
- mysql
- oracledb



Let's Get Started!

<https://bit.ly/electron-workshop>

- or -

<https://github.com/reverentgeek/electron-workshop/wiki>

You Don't Need
PERMISSION
TO BE
AWESOME



THANK
YOU!

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@REVERENTGEEK