```
NODE.INTRO((err, ideas) => {
  if (err) throw new Question(err)
  else understand(ideas)
})
```

BACKGROUND

TIMELINE

1995
JavaScript
1997
Ecmascript
~2002
Web 2.0
2008
Chrome/V8
2009
Node
1989
Invention of World Wide Web

What is node?

What is node?

A JavaScript runtime environment

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That doesn’t help

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…a tool

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What does it do?

What is node?

A JavaScript runtime environment

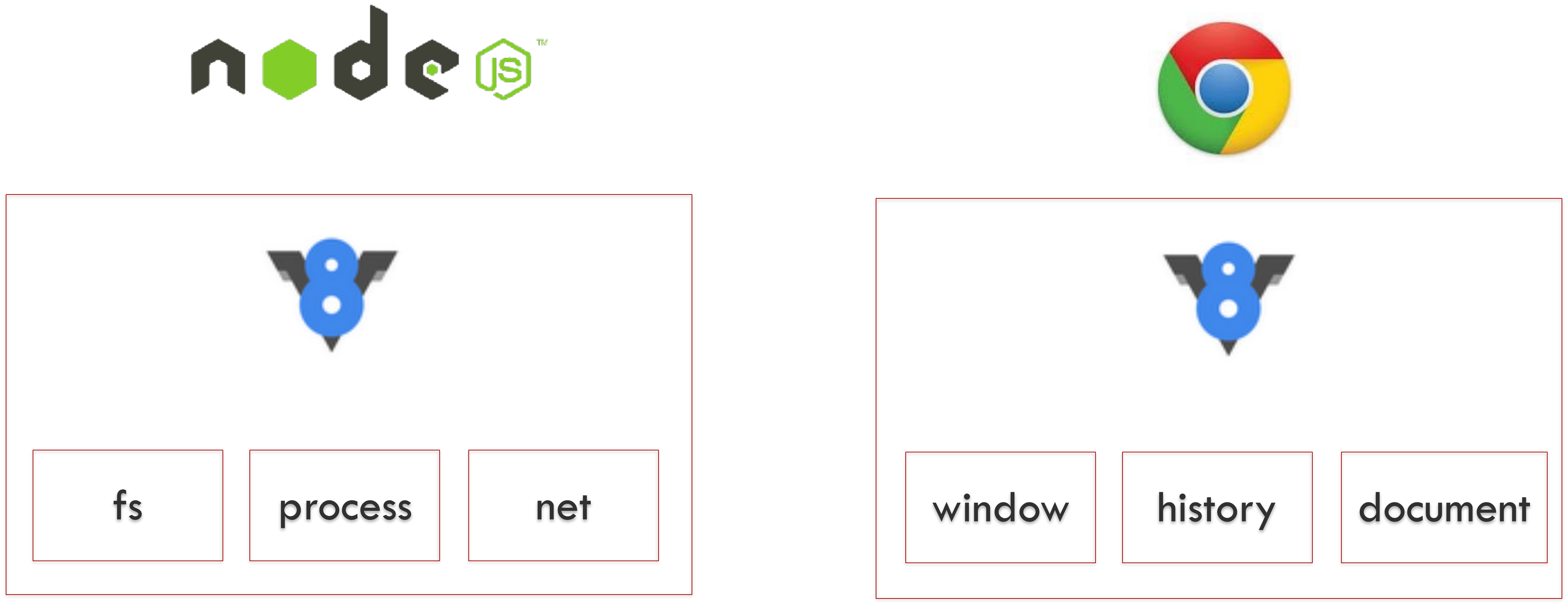
That doesn't help

...a tool

What does it do?

It executes JavaScript on an operating system, instead of in a web browser files (e.g. app.js)

`<script></script>s`



WHY CARE?

WHY CARE?

If you want to create a server and know JavaScript

WHY CREATE A SERVER?

WHY CREATE A SERVER?

If you want to create a custom website or webapp

SERVER

- A program running on a computer connected to the internet
- Serves content requested by remote clients

IF PROGRAMMING WERE COOKING…

Program vs. Process

- Program is data
  - machine code (pre-compiled)
  - bytecode (re-compiled by a VM)
  - text file (can be interpreted)
- Inert — not doing anything
- Ready to be run as a process

- Process is execution
  - memory allocated
  - CPU performing steps
- "Live"
- Produces results
- Interactive
- Can be started/stopped
- Multiple processes from one program…

Program vs. Process

"recipe"

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"cooking"

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COOKING METAPHOR

(term)	(metaphor)
`log('hi');`	
JavaScript	
V8	
Node	
Sierra	

COOKING METAPHOR

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COOKING METAPHOR

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COOKING METAPHOR

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Sierra	operating system	

COOKING METAPHOR

	(term)	(metaphor)
`log('hi');`	program	recipe
JavaScript	programming language	recipe language
V8	engine/VM/interpreter	chef
Node	runtime environment	kitchen
Sierra	operating system	building (restaurant?)

MODULES AND THE NODE ENVIRONMENT

GLOBAL VARIABLES

- **Every module in Node has access to the same set of global variables**

process

global

`console`

`setTimeout/clearTimeout`

`setInterval/clearInterval`

“MODULE” VARIABLES

- **Every module in Node has its OWN set of “module” variables that are available in the default scope**

```
__dirname
__filename
module
require
```

"GLOBAL" (MODULE) VARIABLES

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```

`module`

- Object
- Represents the module itself
- Most importantly, has a property called `exports`

`module.exports`

- Initially an empty object
- Assign it the data you want to expose
- A `require` of this file will return its `module.exports`

`require`

`require`

- Finds a file

`require`

- Finds a file
- Executes it

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- Finds a file
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- Imports that file’s exports

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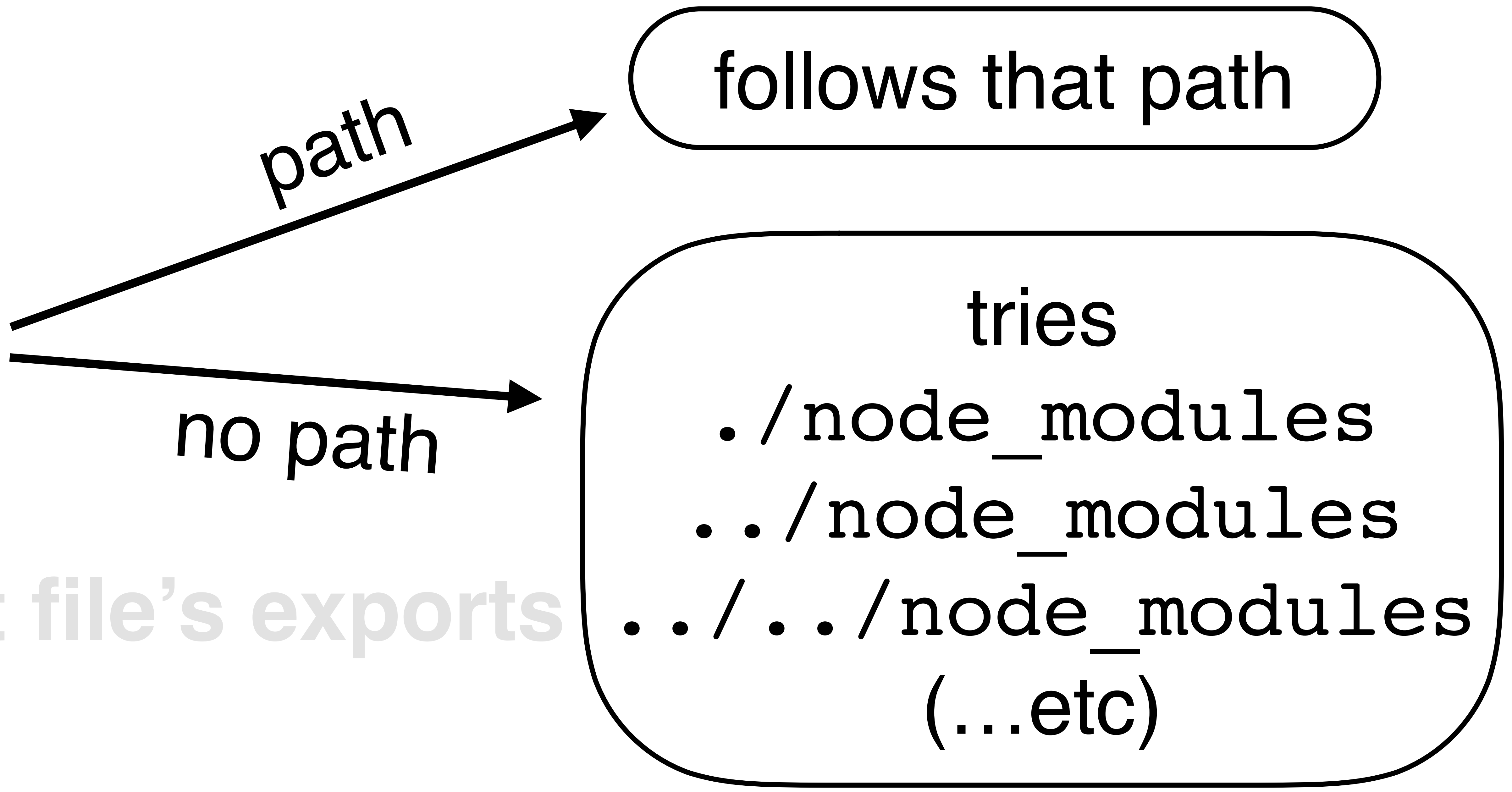
- **Finds a file**
- **Executes it**
- **Imports that file's exports**



NPM

- $\boxed{\text{n}}$ode $\boxed{\text{p}}$ackage $\boxed{\text{m}}$anager
- Command line tool
- Can find libraries of code online
- Downloads them locally (into `node_modules` directory)
- Keeps list of project dependencies in `package.json`

`package.json`

Describes your project, e.g. its dependencies…

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`package.json`

Describes your project, e.g. its dependencies…

- **Collaboration within your team**
- **Sharing within the node community**

SUMMARY

- Node allows for server-side JavaScript
- `require` pulls in what `module.exports` puts out