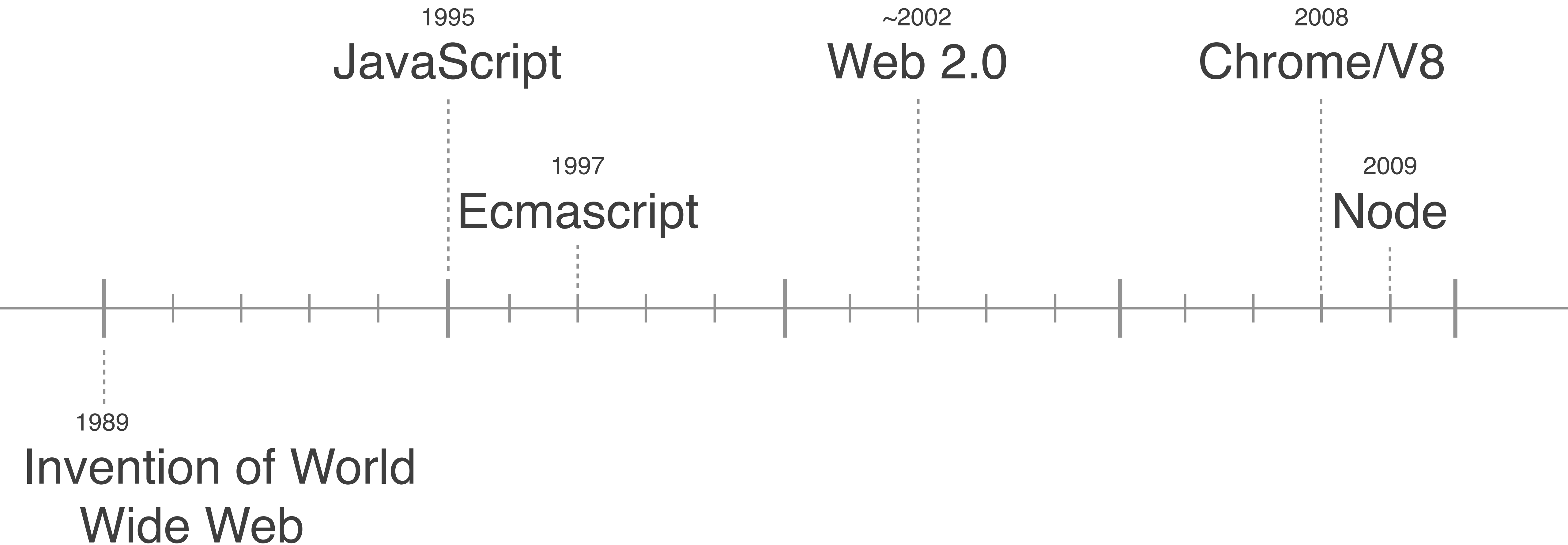






TIMELINE



What is node?

That doesn't help

**What does
it do?**

**A JavaScript runtime
environment**

...a tool

**It executes JavaScript on
an operating system, instead
of in a web browser**

files (e.g. app.js)



fs

process

net

`<script></script>`S



window

history

document



WHY CARE?

If you want to create a server and know JavaScript



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

"recipe"

- **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** "cooking"

- memory allocated
- CPU performing steps
- **"Live"**
- **Produces results**
- **Interactive**
- **Can be started/stopped**
- **Multiple processes from one program...**



COOKING METAPHOR

	(term)	(metaphor)
<code>log('hi');</code>	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

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

```
__dirname  
__filename  
module  
require
```



module

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

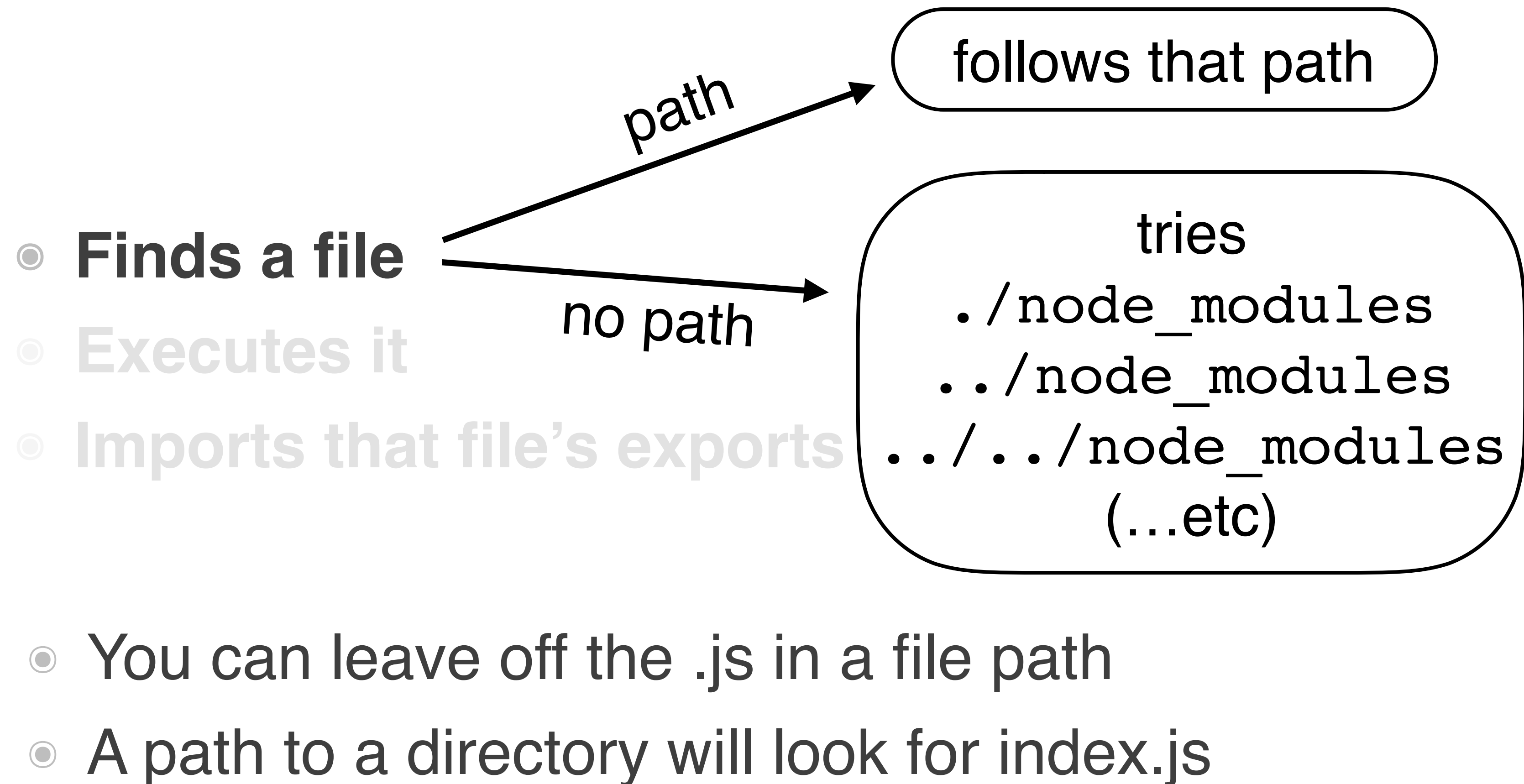


`module.exports`

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



require



DEMO



NPM

- **n**ode **p**ackage **m**anager
- **Command line tool**
- **Can find libraries of code online**
- **Downloads them locally or globally (into `node_modules` directory)**
- **Keeps list of project dependencies in `package.json`**



`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` **exposes**