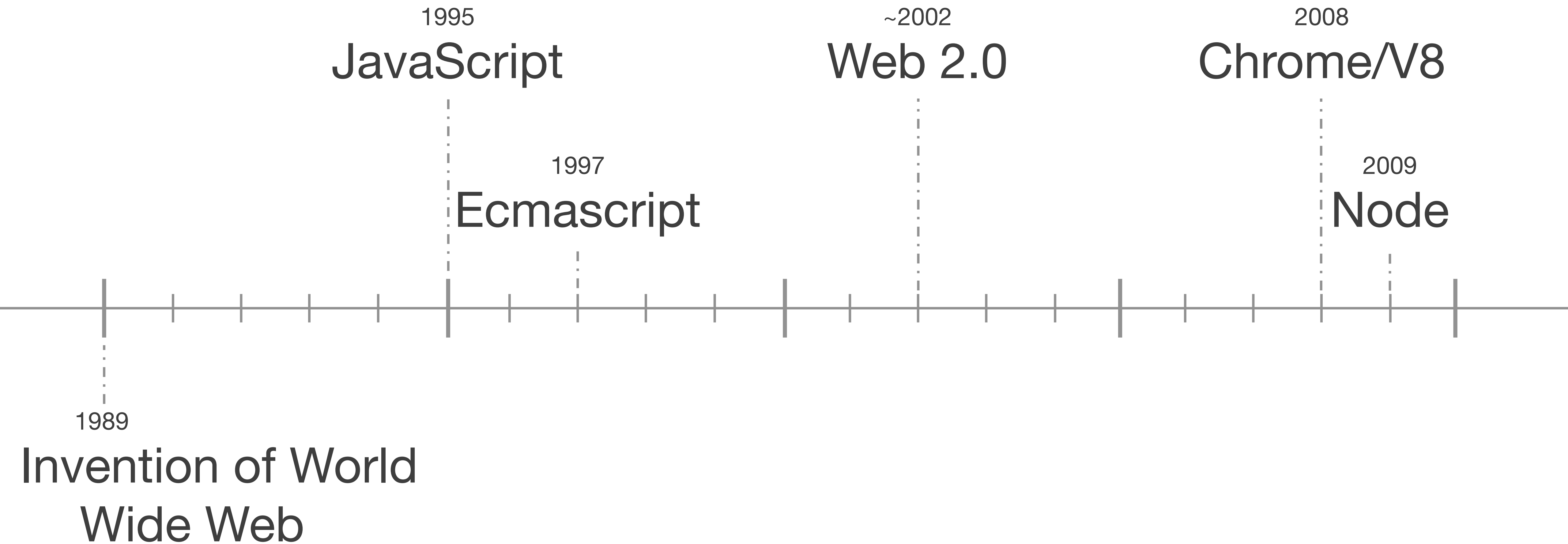






# TIMELINE



**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

"cooking"

- ◉ Process is execution
  - 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
Mojave	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
```



# module

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

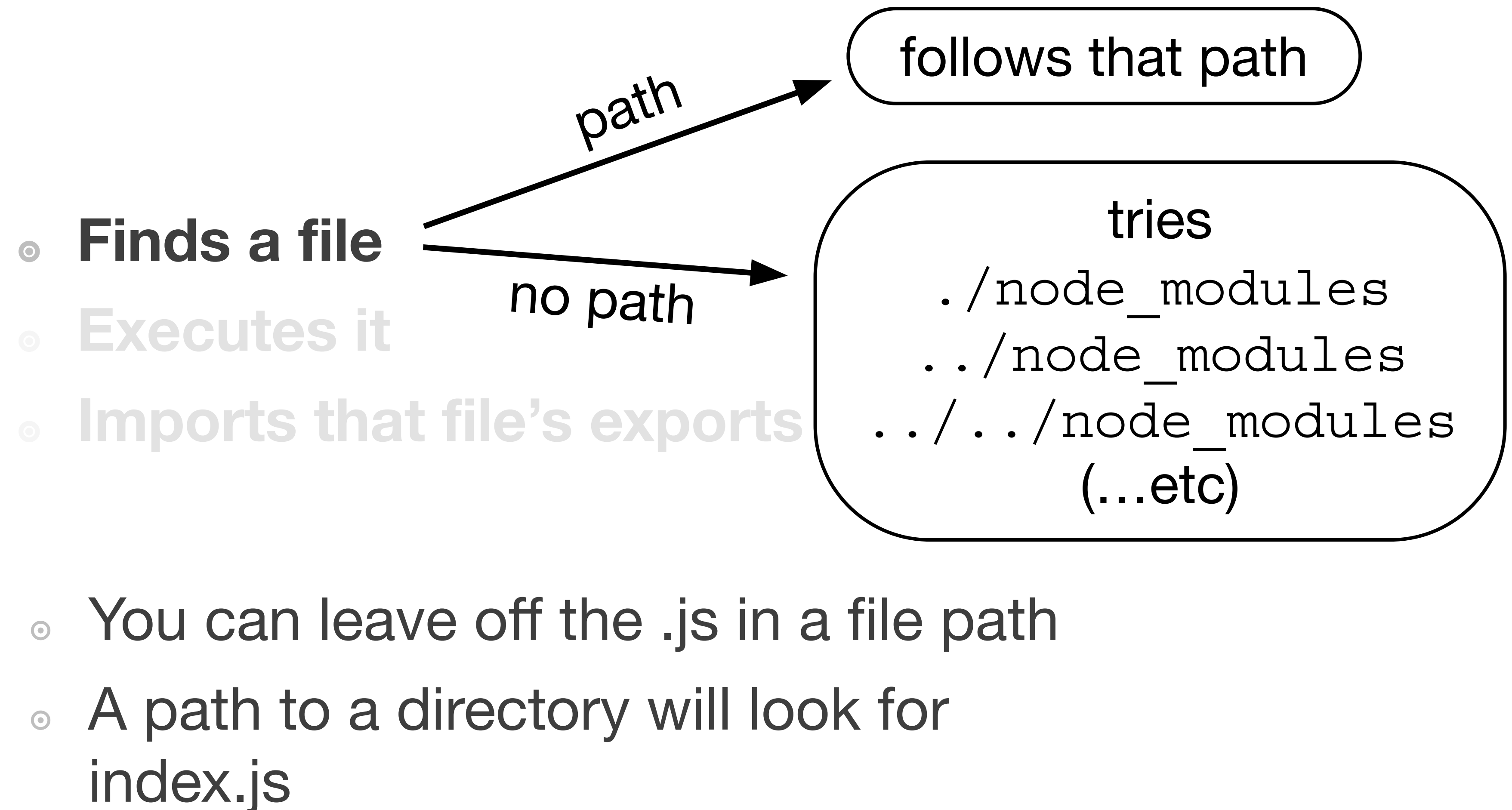


# `module.exports`

- ◉ **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**