

A network graph with numerous green nodes and connecting lines, centered on a black background. The nodes are arranged in a complex, interconnected pattern, with some nodes having multiple connections. The lines are thin and light green, creating a web-like structure.

NodeJS/Express

6.148 • David Wong

<http://nodejs.org>

A Quick Experiment

```
//Javascript  
  
setTimeout(function() {  
    console.log("world")  
}, 2000);  
  
console.log("hello");
```

What is



What is NodeJS

- Platform built on Google's V8 Javascript engine
- Fast and scalable
- Event-driven and non-blocking

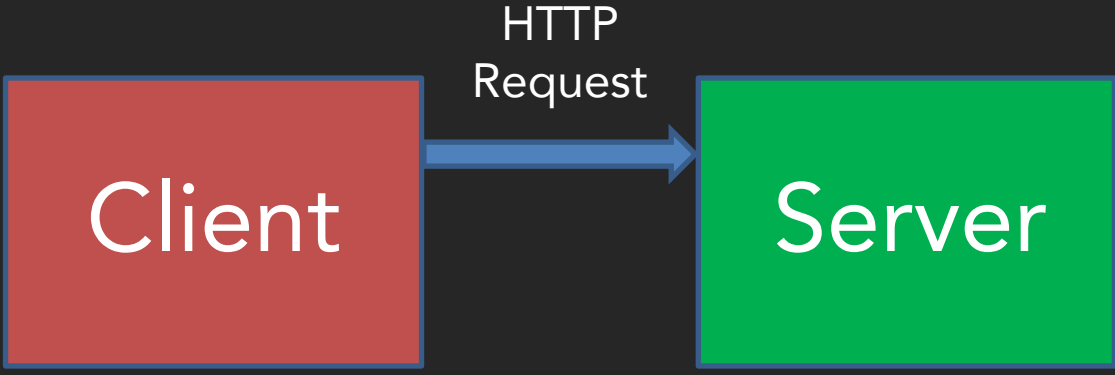
NodeJS is Javascript

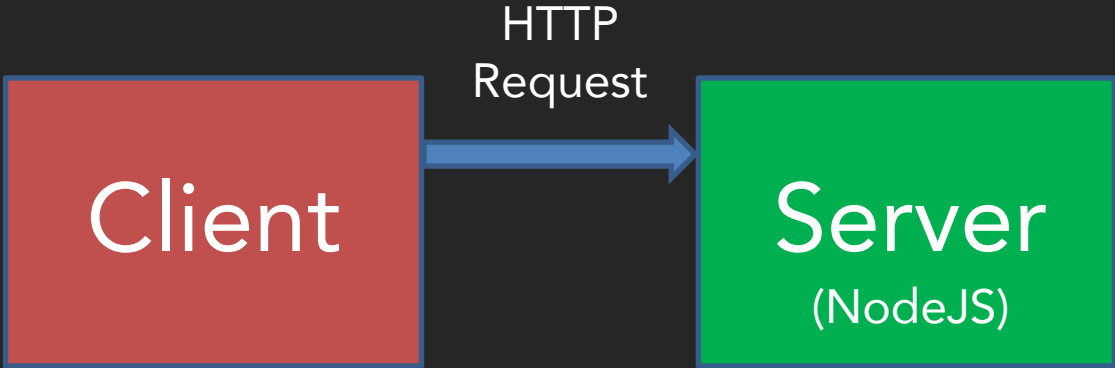
NodeJS is Javascript
(on the server!)

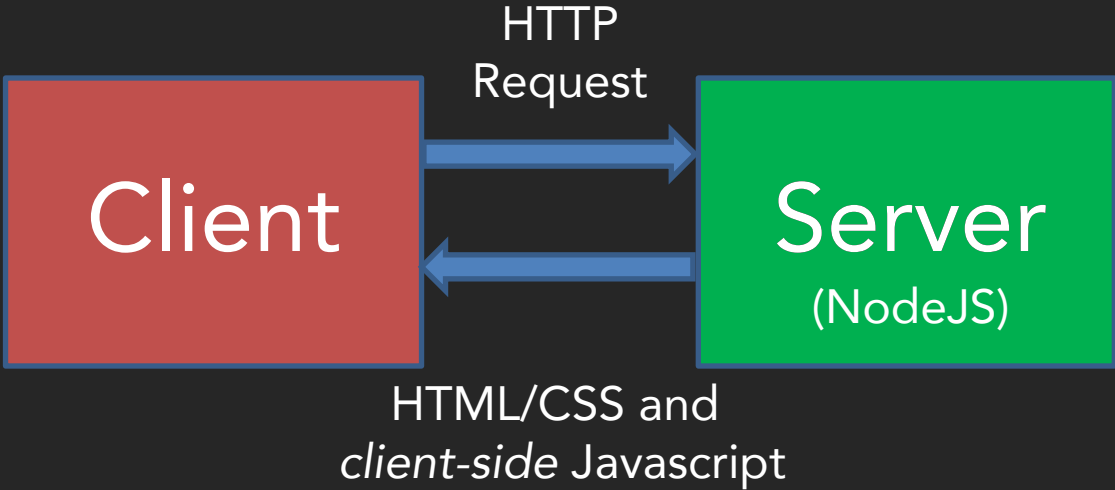


Client

Server







client-side Javascript

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server-side Javascript

```
// app.js
var http = require('http');
helloServer = http.createServer(function (req, res) {
  res.writeHead(200, {'Content-Type': 'text/plain'});
  res.end('Hello World');
})
helloServer.listen(8000);
```

```
$ node app.js
```

localhost:8000



localhost:8000



Apps For quick access, place your bookmarks

Hello World

```
// app.js
var http = require('http');
helloServer = http.createServer(function (req, res) {
  res.writeHead(200, {'Content-Type': 'text/plain'});
  res.end('Hello World');
})
helloServer.listen(8000);
```

```
$ node app.js
```

```
// app.js
var http = require('http');
helloServer = http.createServer(function (req, res) {
  res.writeHead(200, {'Content-Type': 'text/plain'});
  res.write('some text');
  res.end('Hello World');
})
helloServer.listen(8000);
```



```
// app.js
var http = require('http');
helloServer = http.createServer(function (req, res) {
  res.writeHead(200, {'Content-Type': 'text/plain'});
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```

Express!

Express?

NPM (Node Package Manager)

- Check if NPM is installed
 - Windows: open command prompt
 - Mac: open terminal
 - type `npm`
- Install Express
 - `npm install -g express`
 - Windows: may need to right click run as admin
 - Mac: may need to type `sudo npm install -g express`

Package.json

```
{  
  "name": "helloexpress",  
  "version": "0.0.0",  
  "private": true,  
  "scripts": {  
    "start": "node ./bin/www"  
  },  
  "dependencies": {  
    "express": "~4.9.0",  
  }  
}
```

```
graph TD; Express[Express] --- Server["Server (NodeJS)"]
```

Express

Server
(NodeJS)

express helloexpress

```
graph TD; Express[Express] --- Server["Server (NodeJS)"]
```

Express

Server
(NodeJS)

The diagram consists of two rectangular boxes. The top box is blue and contains the text 'Express' in white, with 'app.js' written in white in the bottom-left corner. The bottom box is green and contains the text 'Server' in white, with '(NodeJS)' written in white below it. The green box is centered under the blue box.

Express

app.js

Server

(NodeJS)

Express

app.js package.json

Server

(NodeJS)

Express

app.js package.json Routes

Server

(NodeJS)

Express

app.js package.json Routes Views

Server

(NodeJS)

Don't forget to `npm install`!

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package.json

```
"scripts": {  
  "start": "node ./bin/www"  
},
```

/bin/www

```
var debug = require('debug')('helloexpress');  
var app = require('../app');  
  
app.set('port', process.env.PORT || 3000);  
  
var server = app.listen(app.get('port'), function() {  
  debug('Express server listening on port ' + server.address().port);  
});
```

Express



localhost:3000



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Express

Welcome to Express

localhost:3000/users x

localhost:3000/users

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respond with a resource

app.js

```
app.get('/users', function(req, res) {  
  res.send('respond with a resource');  
});
```

app.js

```
var routes = require('./routes/index');  
var users = require('./routes/users');  
  
app.use('/', routes);  
app.use('/users', users);
```

users.js

```
router.get('/users', function(req, res) {  
  res.send('respond with a resource');  
});
```

users.js

```
router.get('/users', function(req, res) {  
  res.render('index');  
});
```

Questions?