

6.470 Day 4

Node.js

If you have not installed Node, do it now!

<http://nodejs.org>

Ask a staff member if you need help!

Parsnip

Quick Node.js demo



Node.js is a platform built on Chrome's JavaScript runtime
for easily building fast, scalable network applications

JavaScript

JavaScript
Everywhere!

TODAY
IS
JAVASCRIPT

Node.js Example

Write your own server

```
// 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);
```

Running the server

```
$> node app.js
```

You!

You!

Node.js
Server

You!

request a page



Node.js
Server

You!

request a page



HERE IS SOME HTML

Node.js
Server

```
<html>
  <head>
    <title>
  ... etc
</html>
```

Be Careful!

Client Side JavaScript is ***NOT***
Server Side JavaScript

You!

request a page



HERE IS SOME HTML

Node.js
Server

```
<html>  
  <head>  
    <title>  
  
    ...  
  </html>
```

You!

request a page



HERE IS SOME HTML

Node.js
Server

```
<html>
  <head>
    <title>
      ...
    <script>
      var i = 1;
      i ++;
    </script>
  </html>
```

Why use Node? Part 1.

Write Less Code

Node Package Manager (NPM)

Node Package Manager

Bunch of fancy libraries for you to use

Try it! Make sure it's installed!

Windows: Open Node Command Prompt

Mac: Open Terminal

Type `npm`. You should see a bunch of commands

Now try `npm install -g express`

Windows: You may need to run as administrator (reopen Node Command Prompt except right click run as admin)

Mac, you may need to do `sudo npm install -g express`

Package.json

A set of 'instructions' that assist your app

```
{
  "name": "helloworldapp",
  "description": "this is my new app",
  "version": "0.0.1",
  "private": true,
  "dependencies": {
    "express": ">= 3.4.0",
    "hbs": "*"
  }
}
```

Package.json

`npm install` will look in package.json to make sure you have what you need.

Whenever you have a potentially new/different package.json, always `npm install`

Package.json

`npm install` will look in package.json to make sure you have what you need.

Why use Node? Part 2.

JavaScript & all its quirks

JavaScript is Asynchronous

```
//PHP
```

```
echo "hello";  
sleep(2);  
echo "world";
```

```
//JavaScript
```

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

Why use Node? Part 3.

Sitting on a comfortable cloud. A Google cloud

A comfy layer on Google's JavaScript Engine -
Reliable and Supported

Express.js

Express.js

A Web Framework Built On Node.js

Express.js

Let's Try it Out

Type `express helloexpress`

Express.js

You!

request a page



Here is your HTML

Node.js
Server

Express.js

You!

request a page



Here is your HTML

Express.js

node.js
Server

Express.js

You!

request a page

Here is your HTML

Express.js

app.js

Routes

Views

etc...

node.js
Server

Express.js

You!

request a page

Here is your HTML

Express.js

I got this, guys

app.js

Routes

Views

etc...

node.js
Server

Express.js

Demo: A Simple Web Counter

Express.js

What happens when I restart the server?

Database

MySQL

Database

MySQL

MongoDB

Database

MySQL

MongoDB

Firebase

Database

MySQL

```
npm install mysql
```

MongoDB

Firestore

Database

MySQL

```
npm install mysql
```

MongoDB

```
npm install mongodb
```

Firestore

Database

MySQL

```
npm install mysql
```

MongoDB

```
npm install mongodb
```

Firestore

```
npm install firebase
```

Firestore

Firestore

Data is stored as standard JSON

Firestore

Data is stored as standard JSON

```
{  
  movingbox1: 'books',  
  movingbox2: 'clothes'  
}
```

Firestore

Data is stored as standard JSON

```
{  
  movingbox1: 'books',  
  movingbox2: 'clothes',  
  movingbox3: {  
    shoebox1: 'sandals',  
    shoebox2: 'boots'  
  },  
}
```

Firestore

Demo: A better web counter

Holy, that was a lot.

Node.js is Tricky

But not impossible