

What I Learned About Node.js In the Last Ten Days

By Steve Litt

<http://www.troubleshooters.com>

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What We'll Cover

- Hello World
- HTML Hello World
- Node.js Installation
- Argument handling
- Modules
- Closure / Iterator
- 2 page ping-pong app
- Node.js/MongoDB Exerciser
- AJAX One Page Hello World
- Puzzle Game
- MongoDB troubleshooting tips

This is a Basic Intro

- I just started learning Node.js 10 days ago
- Same with MongoDB
- I haven't yet memorized it
- This is not idiomatic Node.js!

Hello World

```
console.log('Hello World!');
```

```
$ node hello.js
```

- Simple
- Writes to terminal
- `console.log()` great for debugging too.

HTML Hello World

- Simple
- `req.read()` sucks up the (moot) request
- `req.writeHead()` sets content-type
- `res.end()` completes the response
 - Can take a string argument
- `server.listen(portNumber)` runs it.
- Notice the anonymous callback!

Callback Functions

- “When you later see this, do that.”
- Used in event loops as event responses.
- Can “oopize” non-OOP languages (C, Lua)
- Node.js uses callbacks for async/non-blocking.
- Think of turning a garden hose inside out.
- Compare `htmlhello.js` and `htmlhello_explicit.js`

Node.js Installation

- Install Node.js as root.
 - I used ./configure;make/make install
- Install Node addons with npm install whatever
 - As normal user
- 2 part Mongo installation
 - Install Mongo as root, copy to /usr/local
 - Install Mongo Node.js driver:
 - npm install mongodb
 - As normal user

Argument Handling

- Use `process.argv[]`
- `var realArgs = process.argv.slice(2);`

See `argv`

Modules

- Keep files simple
- Preserve namespaces
- Conditional Execution
 - I made ismain()

See modular

Closure/Iterator

See closure_iter

- Function inside a function
 - Sees variables local to the outer function
 - Inner function gets returned by outer function

2 Page Ping Pong App

See upcase

- Cycles between HTML front and Node.js back
- Node.js serves the HTML template.

Node.js/MongoDB Exerciser

See mongohello

- Write, read and index through Node.js
- Troubleshoot through CLI interface
- Insert and index 17577 records in 5 seconds
- No SQL
- Rows needn't be structured the same
- Arrays are allowed and encouraged

AJAX One Page Hello World

See onepage

Browse onepage/form

- Front and back domain/port must be same
 - Except for exceptions
- Backend serves front end template
- Different URL paths = different functionalities

Puzzle Game

- Chicklet sorting kids game
- Click chicklet, move it toward the hole, with everything between
- I ran out of time and didn't make it multiuser
 - By saving user state in MongoDB

See puzz

Run puzz.js

Browse puzz/form

Node.js Troubleshooting Tips

- Errors sometimes silent
- Documentation is ambiguous, contradictory, and pathologically terse
- Make small changes, save often
- Make mini-implentations of confusing situations
- `console.log()` and `alert()` are your friends
- `ps ax | grep node`
- Until you go live, make fields to show crucial vars
- Conquer ambiguity with redundancy
- Step away during attitude violations
- Don't try to fix it, just try to narrow it down
- “How can I narrow it down just one more time?”

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