Node.js

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Outline

- Introductions

- Server Side JS

- What is Node.js

- Getting Started with Node

- Frameworks

  - Connect

  - Express

  - Socket.IO

- Q & A

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Flex and AIR Trainer
CF/Java/Ruby/Node/Javascript
Spoon Foundation Board
Apache Flex Committer

Javascript

- Everybody here has some experience with JS

- Supports many programming styles

- Once upon a time browser differences where a challenge

- Amazing applications have been built in JS

- Many teams have separate front end and backend dev teams

- What if those teams could share one language?

Common JS

- http://www.commonjs.org
- Creates Common API for non browser implementations
- Defines Specifications for
    - Modules
        - Class Libraries
        - "Export" functionality
    - System
        - Standard I/O
        - Environmental Variables
        - Command Line Arguments
    - Packages
        - Distribution
        - Dependency Definition
        - Product Documentation
    - Over 30 Different Implementations

Node.js

- http://nodejs.org

- Node.js is a non-blocking event driven javascript platform

- Started by Ryan Dahl of Joyent

- Focuses on making http and networking first class parts of the development environment

- Runs on Linux, Solaris, OS X and Windows

- Even release numbers stable, Odd are development releases

Node.js

- Asynchronous

- Event Driven

- Built on top of Google V8 Engine (Chrome's JS engine)

- Its Fast

Basic Node.js Demo

- Build a HTTP web server

```
var http = require('http');

http.createServer(function (req, res) {

  res.writeHead(200, {'Content-Type': 'text/plain'});
  res.end('Hello World\n');

}).listen(3000, "127.0.0.1");

console.log('Server running at http://127.0.0.1:3000/');
```

- Build a Socket Server

```
var net = require('net');

var server = net.createServer(function( socket ) {

    socket.write("Echo server\r\n");
    socket.pipe(socket);

});

server.listen(8080);
```

NPM - Node Package Manager

- http://npmjs.org

- Dependency and Distribution Tool

- Install packages

  - Local to projects - `npm install <package-name>`

  - Globally `npm install -g <package-name>`

- Also has helper for creating package.json

Connect

- http://www.senchalabs.org/connect/

- Adds the normal HTTP server functionality we are used to

  - Logging

  - Session

  - Cookies

  - Body Parser

  - Static File Provider

  - Directory Listing

  - Virtual Hosts

  - Favicon

  - ...

Connect Demo

- Build a static file server

- Often when building JS applications, files need to be loaded from a web server to function correctly

    - npm init

    - Add connect as a dependency

    - npm install

```
var connect = require('connect');

var server = connect()
  .use(connect.logger('dev'))
  .use(connect.static('public'))
  .use(function(req, res){
    res.end('hello world\n');
  })
  .listen(3000);
```

Express

- http://expressjs.com

- Developed by LearnBoost

- Extends Connect to add developer friendly functionality

  - Robust routing

  - Redirection helpers

  - Dynamic view helpers

  - Application level view options

  - Content negotiation

  - Application mounting

  - Focus on high performance

  - View rendering and partials support

  - Environment based configuration

  - Session based flash notifications

Express Demo

- Create Express Application

  - npm init

    - Add Express as a dependency

  - npm install .

- Generate and Express Application Template

  - npm install -g express

  - express new expressgenapp && cd expressgenapp && npm install

Socket.IO

- http://socket.io

- Developed by LearnBoost

- Allows for real time push communication in Node.js applications

- Supports WebSockets in browsers that support them

  - Implements automatic failover to flash and polling

- Socket.IO is more than just sockets

  - Heartbeat

  - Multiple Channels

  - Set Properties

  - Rooms

  - Broadcast

Socket.IO Demo

- Build simple chat server using Socket.IO

Q & A

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- https://github.com/SimbCo/
  NodeJSAtcf.Objective

Call Us For Help With Your Project!

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