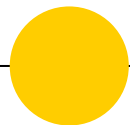


# CS4220 Node.js & Vue.js

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**Intro to Node.js with File System & HTTP**



## **What is Node.js ?**

Node.js is a platform. The creators of Node.js took JavaScript and allowed it to run on your machine. It's built on Chrome's V8 JavaScript runtime.

The main idea is that Node.js uses an event-driven, non-blocking I/O model to remain lightweight and efficient



## What Node Achieves

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One of the more difficult problems in writing systems that communicate over a network is managing input and output – that is, the reading and writing of data to and from the network, the hard drive, DBs and other such devices.

Node was initially conceived for the purpose of making ***asynchronous*** I/O easy and convenient.



## Where Node Excels

Any place where we can perform asynchronous I/O - reading and writing to network connections, reading/writing to the filesystem, and reading/writing to the database.

All of these are common tasks in web apps and execute very fast in Node.

- JSON APIs
- Web Apps
- Command Line Utilities/Apps
- Chat Apps



## **Node Modules & require**

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Node.js puts little functionality in the global scope.

If you want to access other built-in functionality, you have to ask the module system for it.

Node.js follows the CommonJS module system, and the built in require function is the easiest way to include modules that exist in separate files.

The basic functionality of require is that it reads a javascript file, executes the file, and then proceeds to return the exports object.



# Node Core Modules

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## File System

- Handles File I/O

```
const fs = require('fs')
```

## HTTP/HTTPS

- Interfaces designed to support features of the http or https protocol.

```
const http = require('http')
```

```
const https = require('https')
```



## Event Loop

JavaScript engines are built on the concept of a single-threaded event loop (one piece of code is ever executed at a time). Java or C++ can allow multiple different pieces of code to execute at the same time.

The event loop is a process inside the JavaScript engine that monitors code execution and manages the jobs.

<https://www.youtube.com/watch?v=8aGhZOkoFbO>



# References & Readings

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## Nodejs.org

<https://nodejs.org/api/http.html> - HTTP

<https://nodejs.org/api/fs.html> - File System

## Eloquent Javascript

[https://eloquentjavascript.net/20\\_node.html](https://eloquentjavascript.net/20_node.html)

## Event Loop

<https://developer.mozilla.org/en-US/docs/Web/JavaScript/EventLoop>