



Waterford Institute *of* Technology

INSTITIÚID TEICNEOLAÍOCHTA PHORT LÁIRGE

MSc. Enterprise Software Systems

Module: Enterprise Web Development

URL: <https://tutors-design.netlify.com/course/ewd-2020-wit.netlify.com>

Overview

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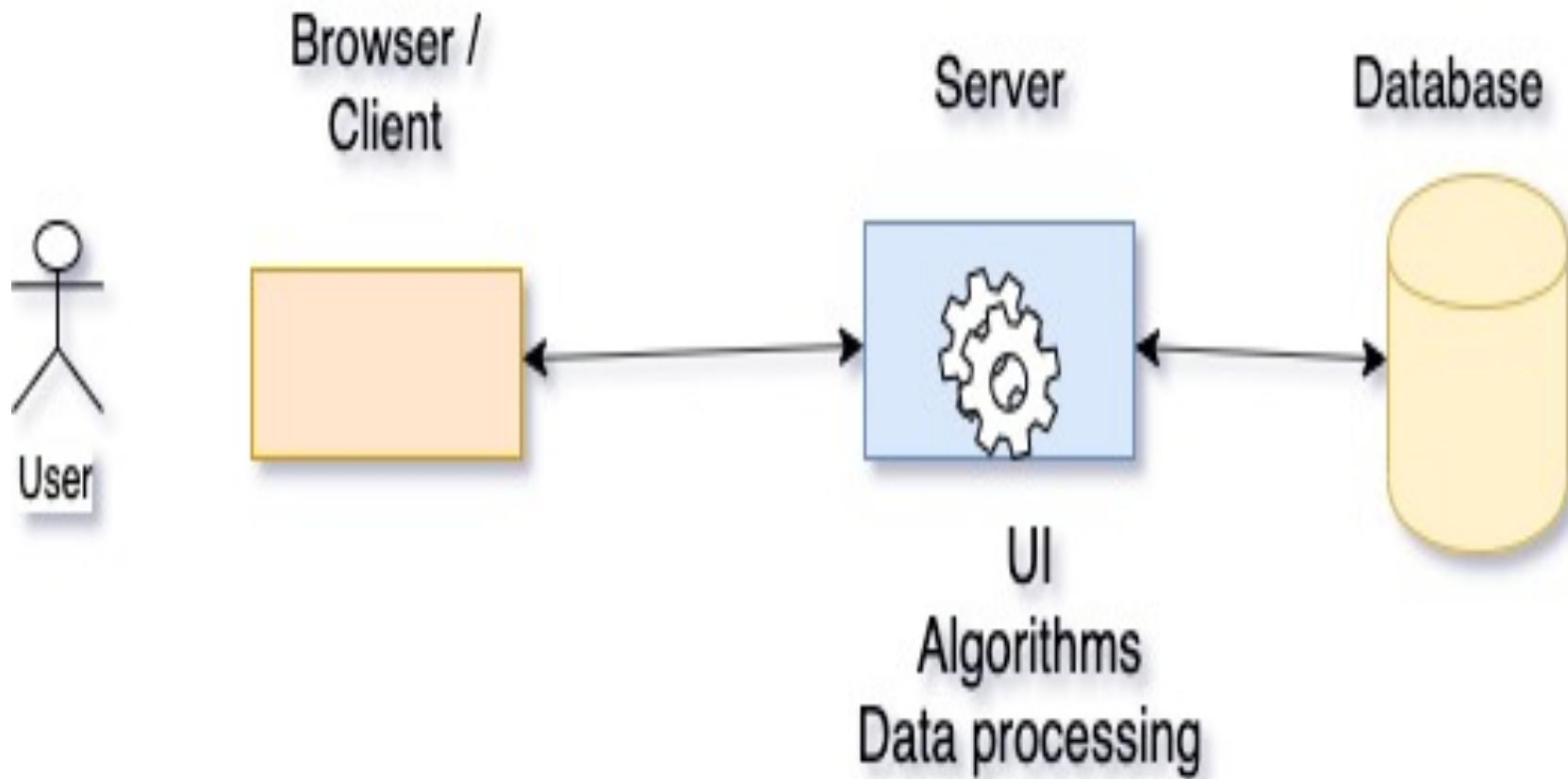
TL;DR

**Design, implement, test and deploy
modern, secure Web apps using
industry-standard frameworks and
tools and leveraging agile practices.**

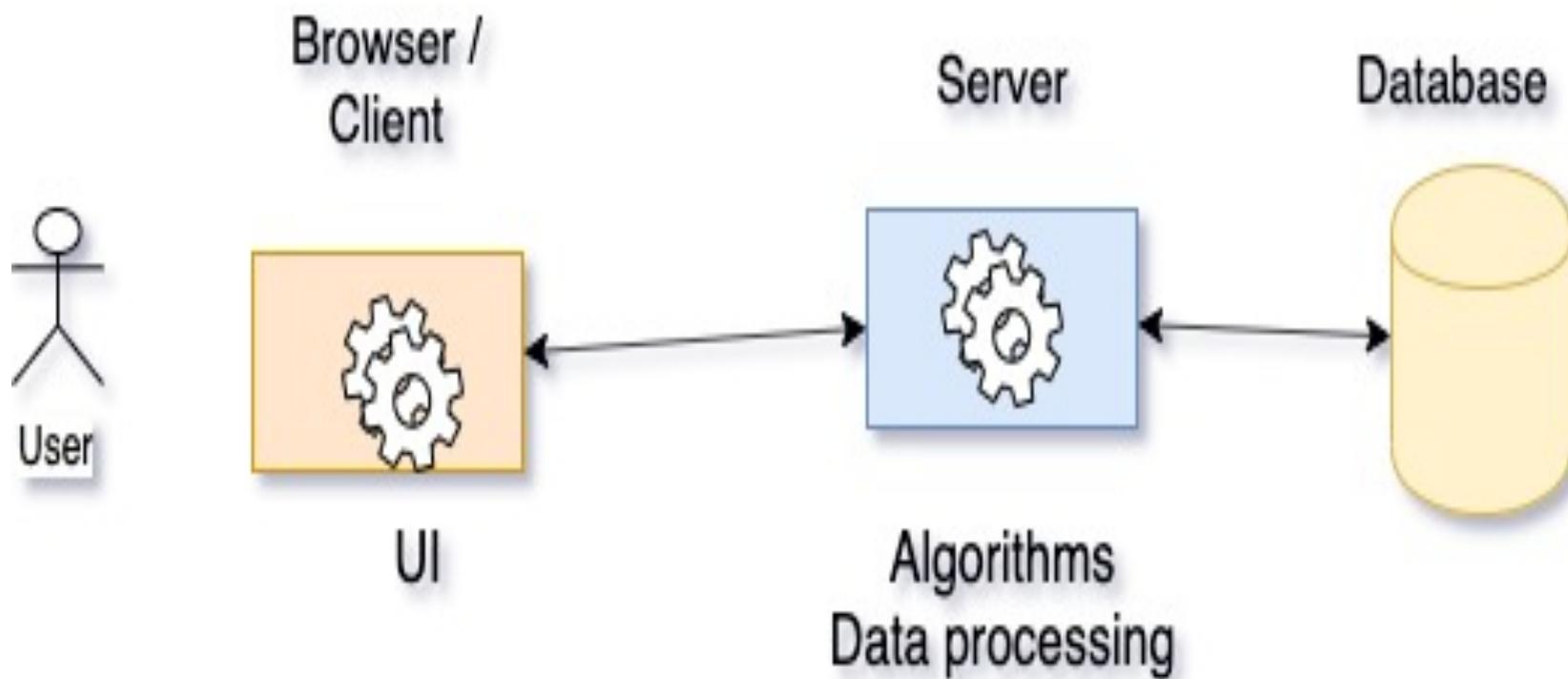
Agenda

- Context
- This module's focus
- Software installation requirements

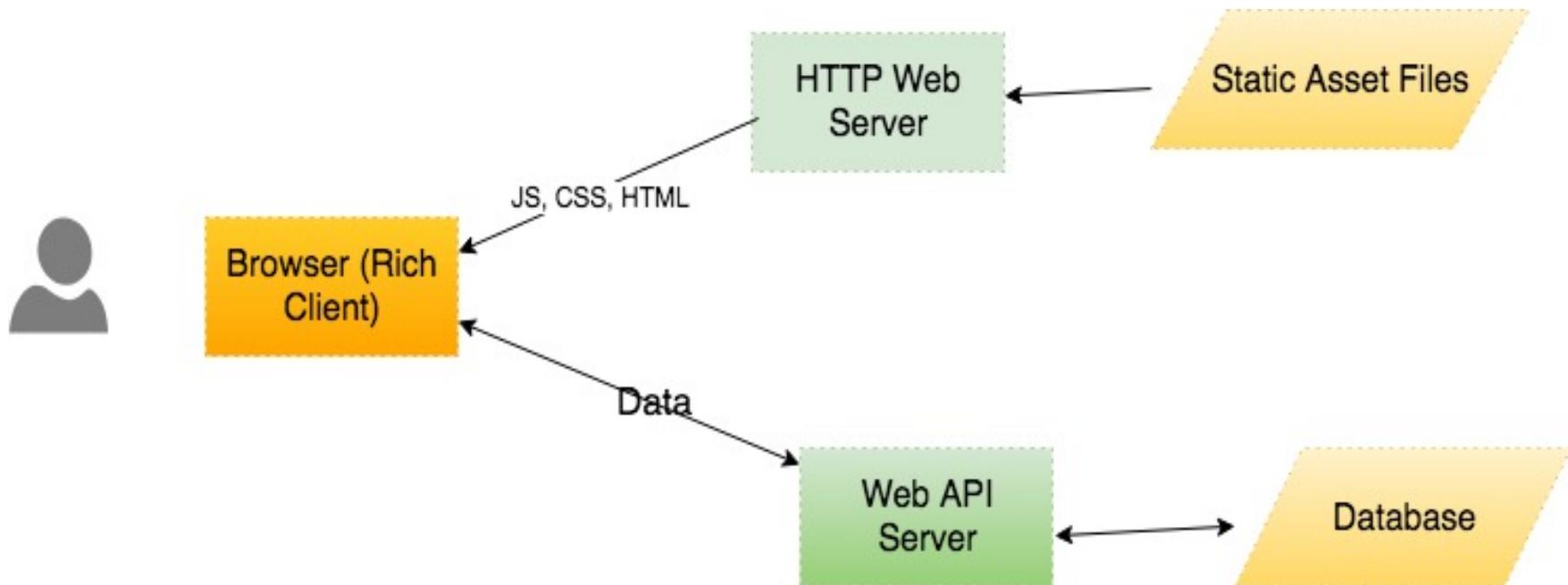
Web Apps Architecture – Server-Side Rendering (SSR)



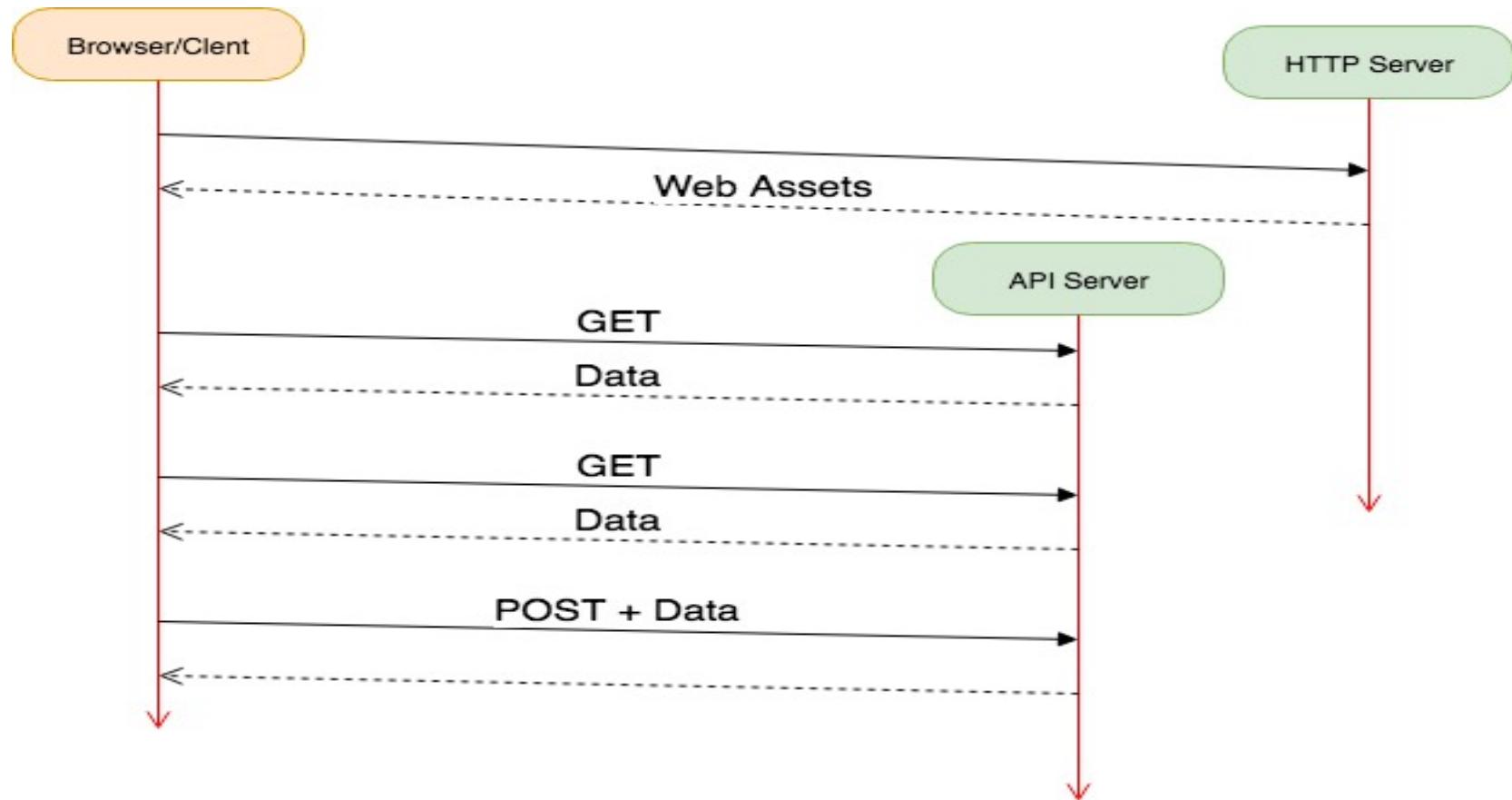
Web Apps Architecture – Client-Side Rendering (CSR)



Modern (CSR) Web Apps - Architecture



Modern Web Apps – HTTP Communications flow



Modern Web Apps.

1. Early Examples: Gmail (2004), YouTube (1st generation)

- Disadvantage:

- Poor developer experience (DX) – code bloat; poor maintainability; browser inconsistencies.
- Lacked addressability (Key principle of the web).

2. Jquery – A cross-platform JavaScript library to simplify the client-side scripting of HTML pages. (2006)

- Adv.: Better developer productivity; reduced code bloat

- Disadvantages –

- Lacked Addressability.
- Poor code maintainability (spaghetti code).

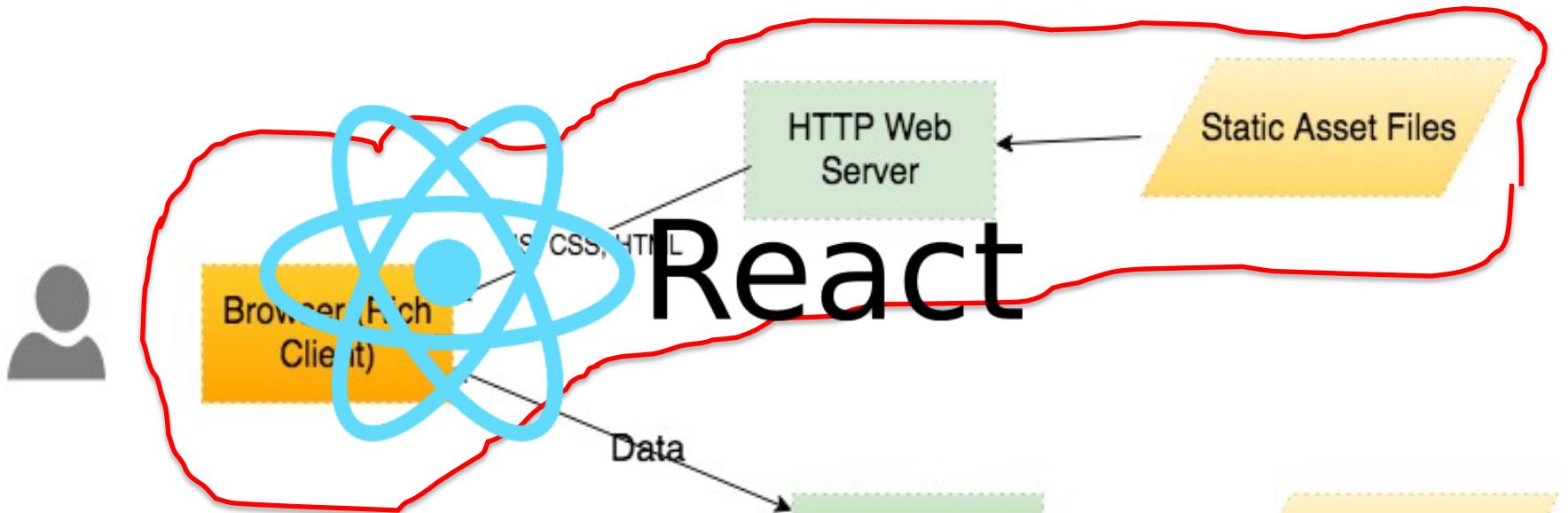
3. Single Page App (SPA) frameworks. (2010 ish)

- Support addressability; Improved DX; Improved maintainability.

Agenda

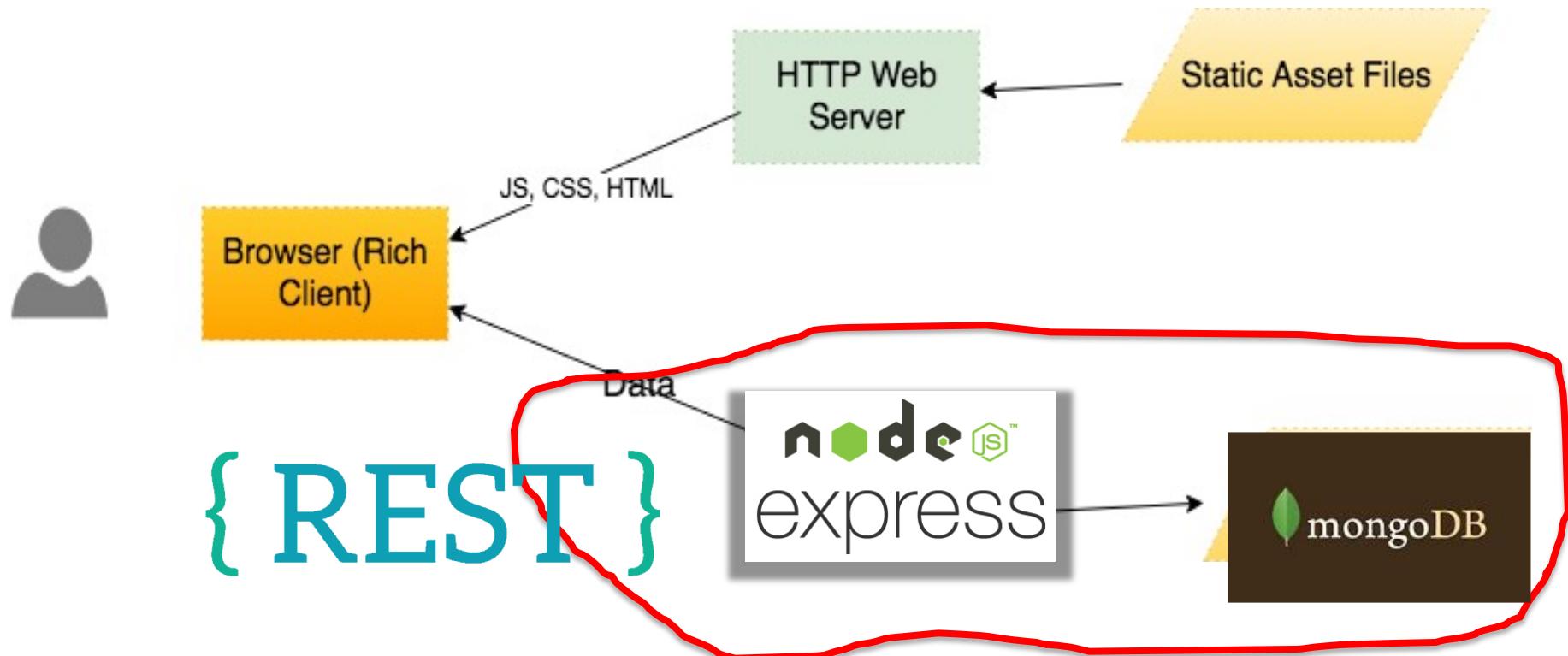
- Context.
- This module's focus

Modern Web Apps



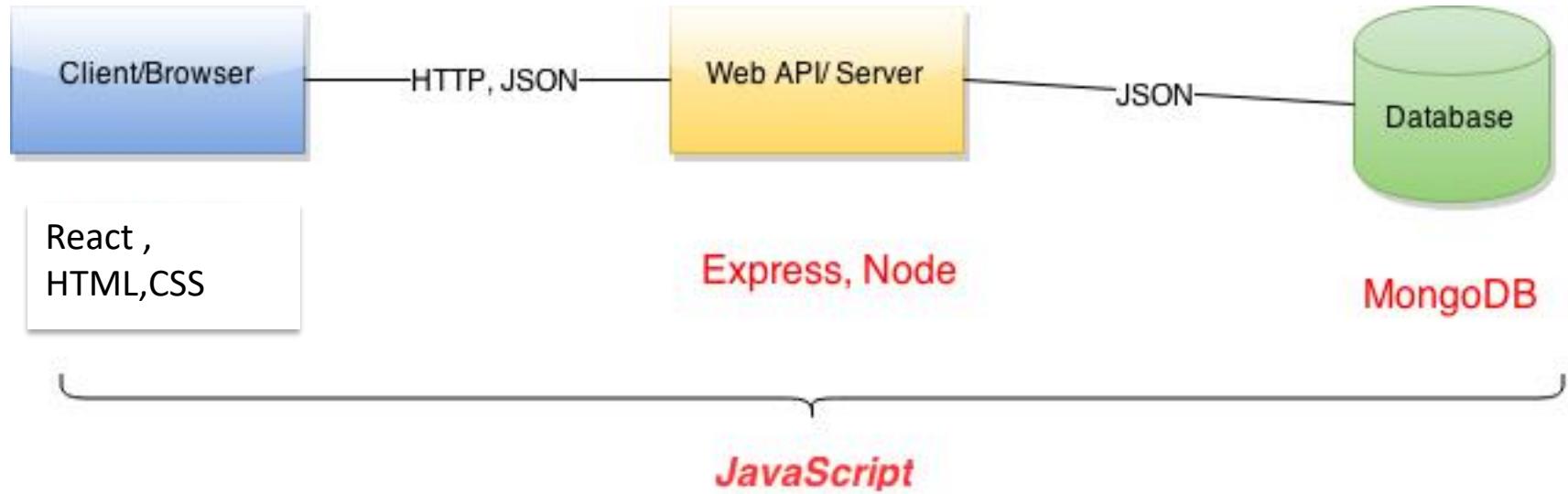
A JavaScript library for building user interfaces

Modern Web Apps



Modern Web App architecture.

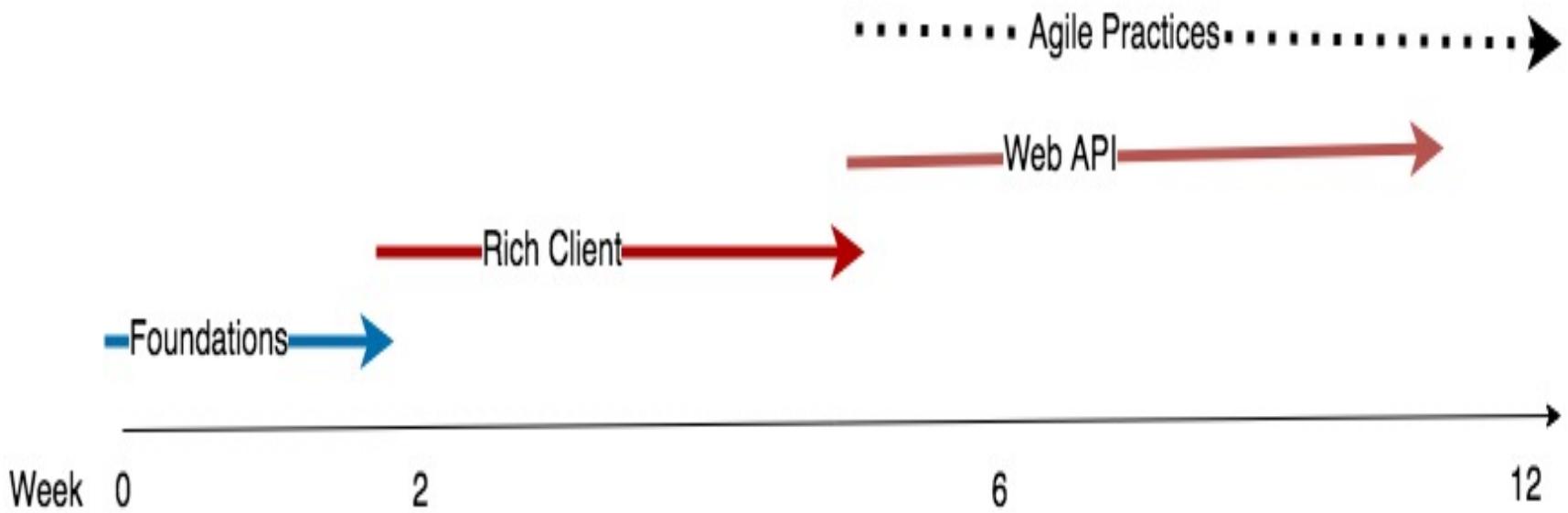
(Mongo, Express, React, Node)



Agenda

- Context.
- This module's focus
 - Single Page Apps, using React
 - Web APIs, using Node and MongoDB
 - Related Agile support tasks:
 - E.g. Automated testing, Source Control, Continuous Integration
- Software Installation Requirements

Outline schedule

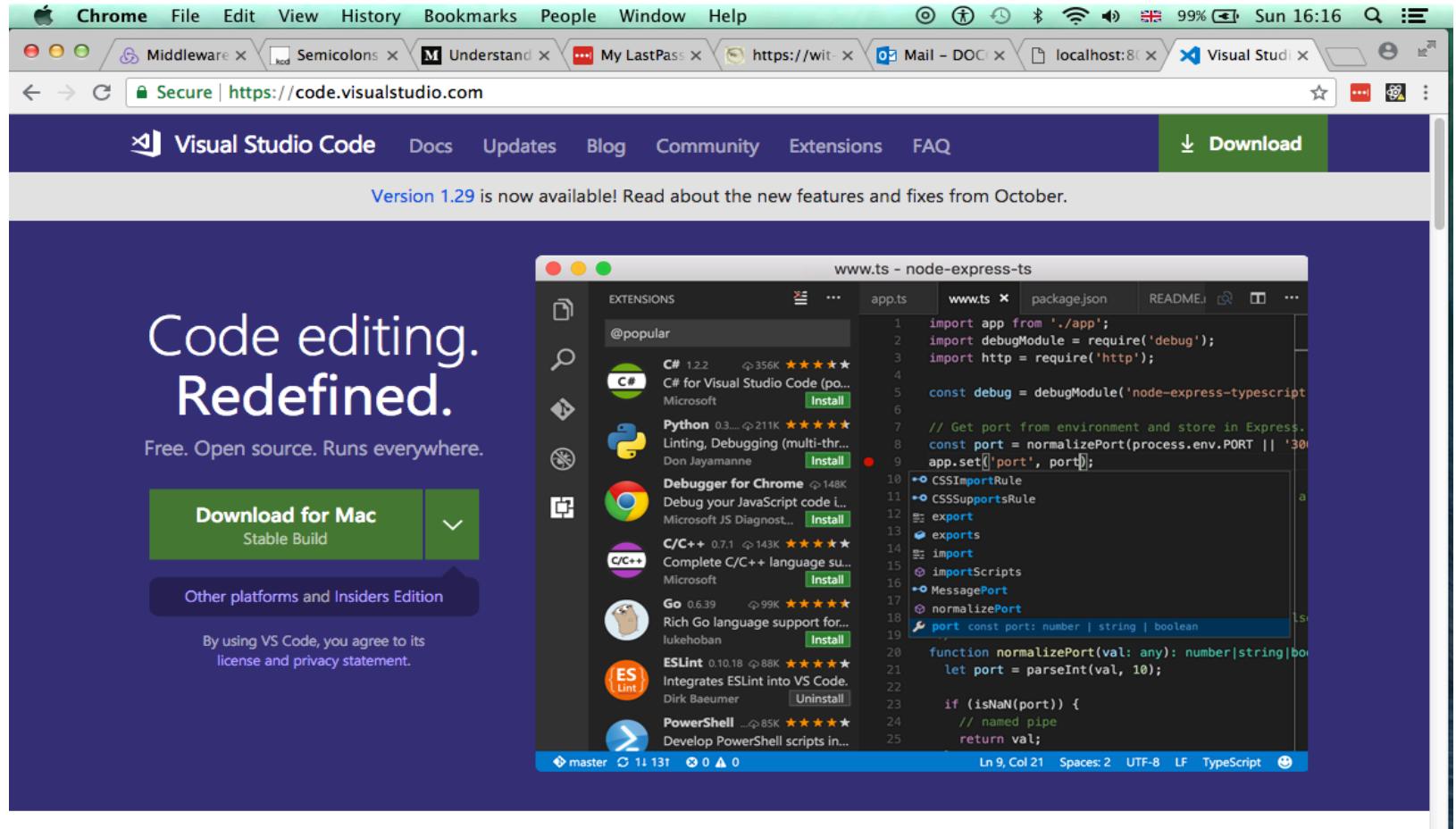


Agenda

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Text Editor

(Not a heavyweight IDE, thankfully)



Node.js

(A JavaScript runtime platform)

The screenshot shows a browser window displaying the Node.js website at nodejs.org/en/. The page features the Node.js logo and navigation links for HOME, ABOUT, DOWNLOADS, DOCS, GET INVOLVED, SECURITY, and NEWS. A large heading states: "Node.js® is a JavaScript runtime built on Chrome's V8 JavaScript engine." Below this, there are two download buttons for macOS (x64). The first button, "12.14.1 LTS", is highlighted with a red border and labeled "Recommended For Most Users". The second button, "13.6.0 Candidate", is crossed out with a large orange X. Both buttons have links to "Other Downloads", "Changelog", and "API Docs". A call-to-action below the downloads encourages users to look at the "Long Term Support (LTS) schedule". Further down, there is a link to sign up for the "Node.js Everywhere" newsletter. The footer includes the OpenJS Foundation logo, links to report issues, and a note about the site's copyright.

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← → C 🔒 nodejs.org/en/

node

HOME | ABOUT | DOWNLOADS | DOCS | GET INVOLVED | SECURITY | NEWS

Node.js® is a JavaScript runtime built on Chrome's V8 JavaScript engine.

Download for macOS (x64)

12.14.1 LTS
Recommended For Most Users

13.6.0 Candidate

Other Downloads | Changelog | API Docs Other Downloads | Changelog | API Docs

Or have a look at the [Long Term Support \(LTS\) schedule](#).

Sign up for [Node.js Everywhere](#), the official Node.js Monthly Newsletter.

OpenJS Foundation

Report Node.js issue | Report website issue | Get Help

https://nodejs.org/dist/v13.6.0/node-v13.6.0.pkg © Reserved. Portions of this site originally © Joyent.

sfw0002-01-R....png node-express.png WebDev_assig....ht... Show All X

Git

Chrome File Edit View History Bookmarks People Window Help

Git Secure | https://git-scm.com

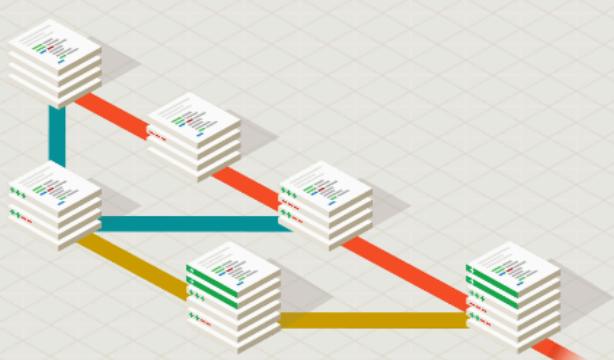
git --distributed-even-if-your-workflow-isnt

Search entire site...

Git is a **free and open source** distributed version control system designed to handle everything from small to very large projects with speed and efficiency.

Git is **easy to learn** and has a **tiny footprint with lightning fast performance**. It outclasses SCM tools like Subversion, CVS, Perforce, and ClearCase with features like **cheap local branching**, convenient staging areas, and **multiple workflows**.

 Learn Git in your browser for free with **Try Git**.



About
The advantages of Git compared to other source control systems

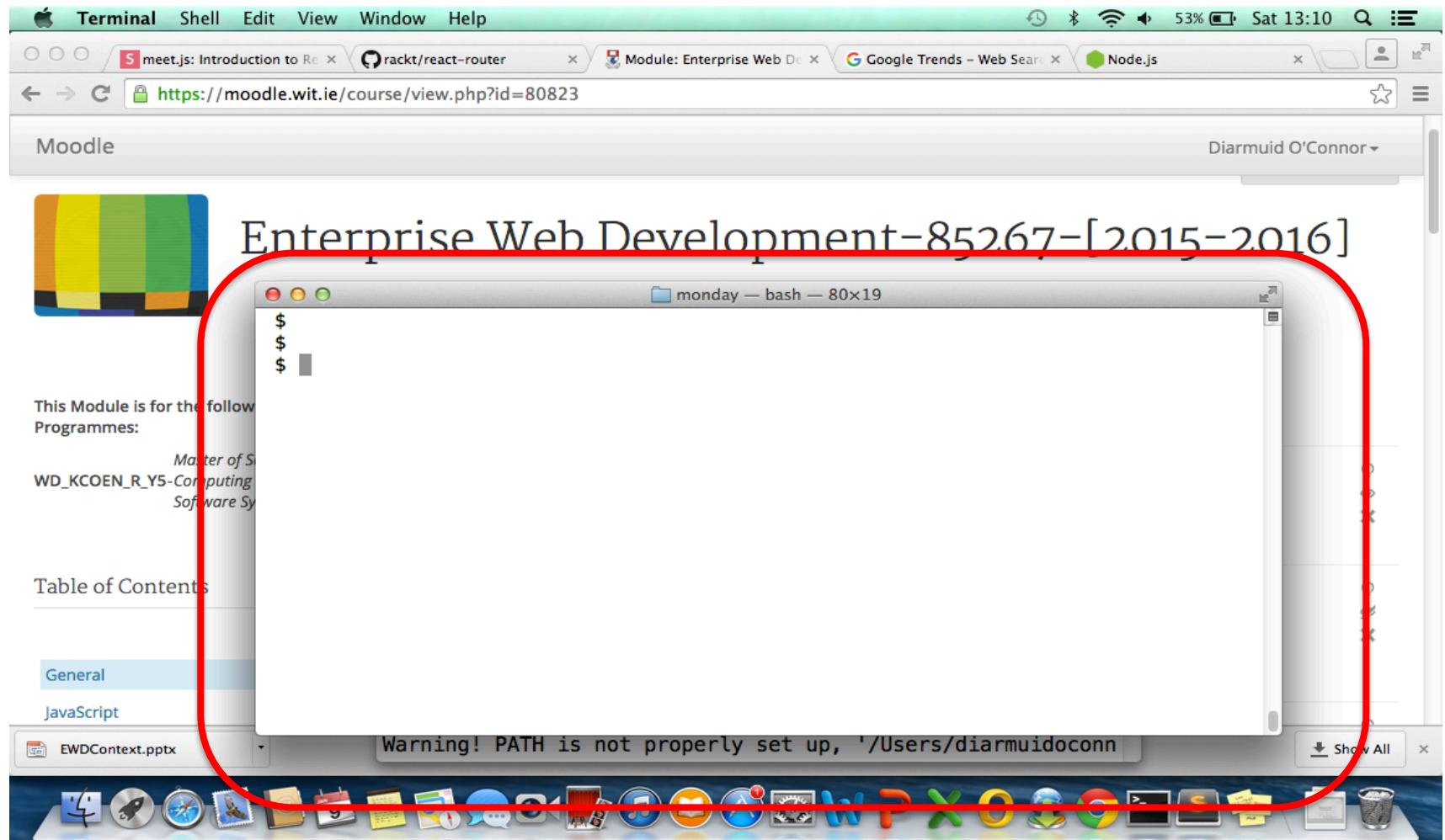
Documentation
Command reference pages, Pro Git book content, videos and more

Latest source Release
2.15.1

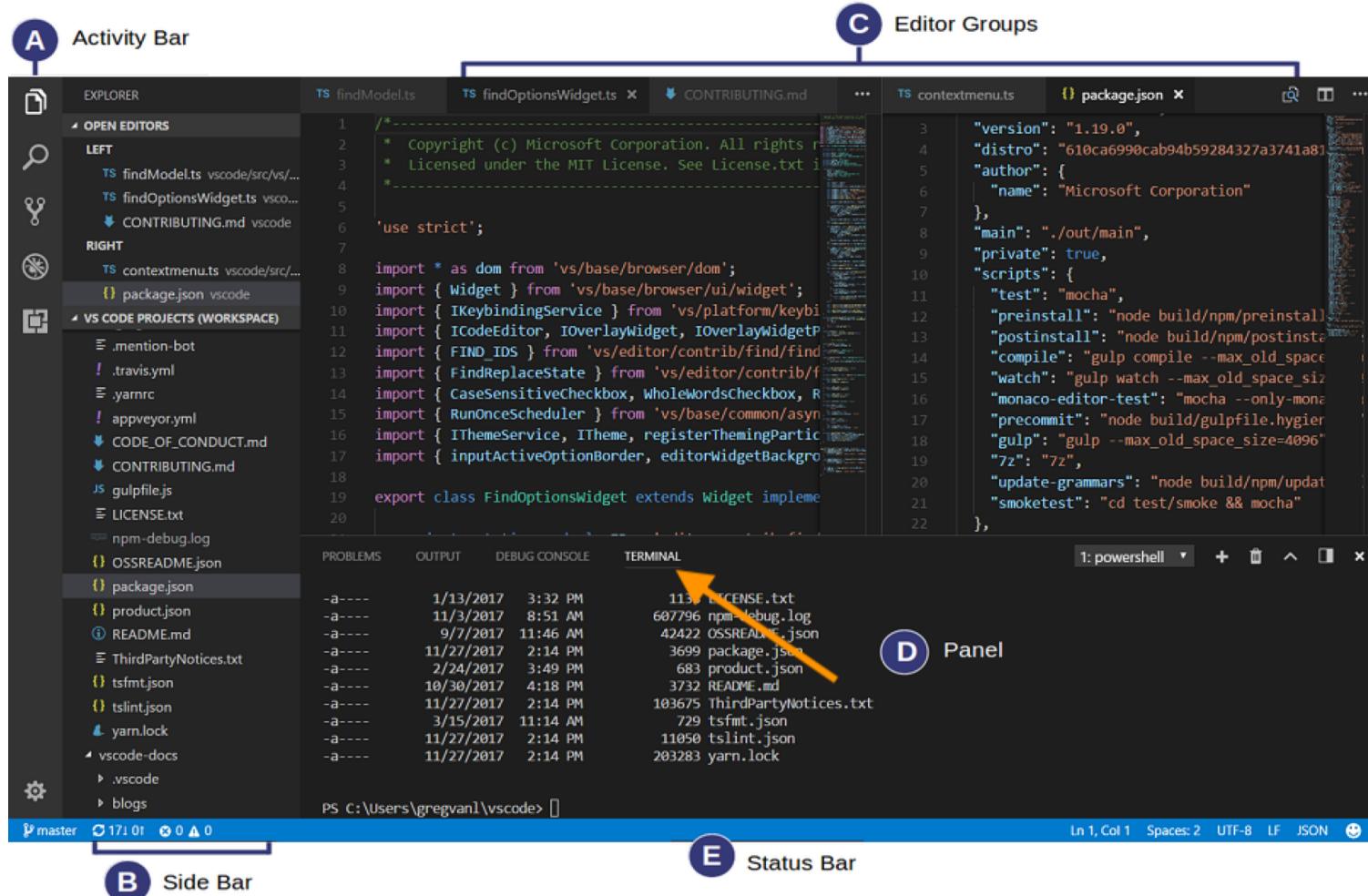
Line 33, Column 76
51 52
GUI clients and binary releases for all major platforms.
console.log(localStorage.getItem('drives') + ' drives are available.' + localStorage.getItem('type'));

35 misspelled words Spaces: 4 Markdown

DOS/Terminal window.



VS Code's Integrated Terminal.



Terminal command – Folder navigation

- The cd command (Change directory)

\$ cd *(Show pathname of my current directory)*

c:\Users\diarmuid

\$ cd webdev *(Relative pathname)*

\$ cd c:\Users\diarmuid\webdev *(Absolute pathname)*

\$ cd .. *(c:\Users\diarmuid)*

\$ cd webdev\lab01 *(c:\Users\diarmuid\webdev\lab01)*

\$ cd ..\lab02 *(c:\Users\diarmuid\webdev\lab02)*

\$ cd ..\.. *(c:\Users\diarmuid\)*

\$ represents the terminal prompt – not part of command.

Summary.

- **Two models of web apps:**
 - Traditional – Server Side Rendering (SSR)
 - Modern – Client Side Rendering (CSR)
- **CSR model has evolved:**
 - Unmaintainable JS codebase to SPA framework based codebase
 - No addressability to addressable
- **Server-side**
 - From SSR web applications to Web APIs
 - REST style interface.
- **NoSQL databases.**
- **Agile development processes.**

Web Evolution - AJAX.

Navigation Bar - 20%

Menu -
20%

Toolbar - 10%

Content - 40%



Footer - 10%

Static

Dynamic