Review of React-Services

- Most common issue was a desire to share state
 - Between server and client
 - But you shouldn't
- Common to feel confused about repetitiveness

An exception: Isometric/Universal Javascript

When a server and client share JS code

- Known as "isometric" or "universal" JS
- NOT state itself
 - MAYBE code about manipulating state
 - MOSTLY validation and "generic" code
- VERY RARE for many reasons
 - Tricky to get code running in both places
 - And update at same time
 - Shared needs not common enough

Why not share state between Front/Back?

- States are similar, not identical
 - Serving different needs
 - We are running simple projects
 - Fewer differences
- Most projects aren't both sides
 - Front/Back run different places
 - Usually developed different teams
 - Often Many:1/1:Many/Many:Many
- Even when full-stack
 - Shared state = coupling
 - Changes are harder, larger

Ends serve different needs

- Server: Totality of state for one or more purposes
- Client: State for a particular user for a purpose
 - Including incomplete changes
 - Including UI state (open/closed, etc)
- "Purpose" above likely not the same

Server and Client state WILL have different models

- Similar, but not identical
- Harder to see on simple applications

Not Single Purpose

- Most Services will have multiple clients
- Most Clients will have multiple services
 - And even multiple servers of services!
- Usually developed by different teams
 - May be at different workplaces! (SaaS)

Sharing state becomes

- Effectively impossible
- Somewhat meaningless

Full-Stack on a Single Purpose Web App?

- 1 Server, 1 Client, 1 Dev/Dev Team
- Confident this won't change
 - Why such confidence?

State still couples the code bases

- Code still runs on different platforms
- Changes become painful
 - Programmers need to expect change

Harder to see difference on simple apps

Let's consider some realistic apps

Github

Here are the docs for part of GitHub REST API:

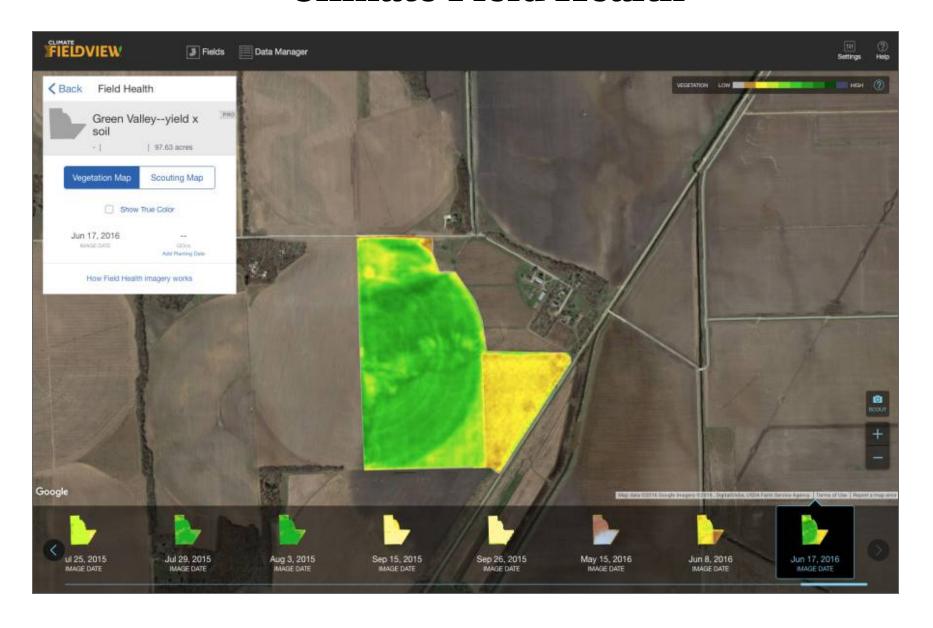
https://docs.github.com/en/rest/repos/repos

Each endpoint returns...a lot

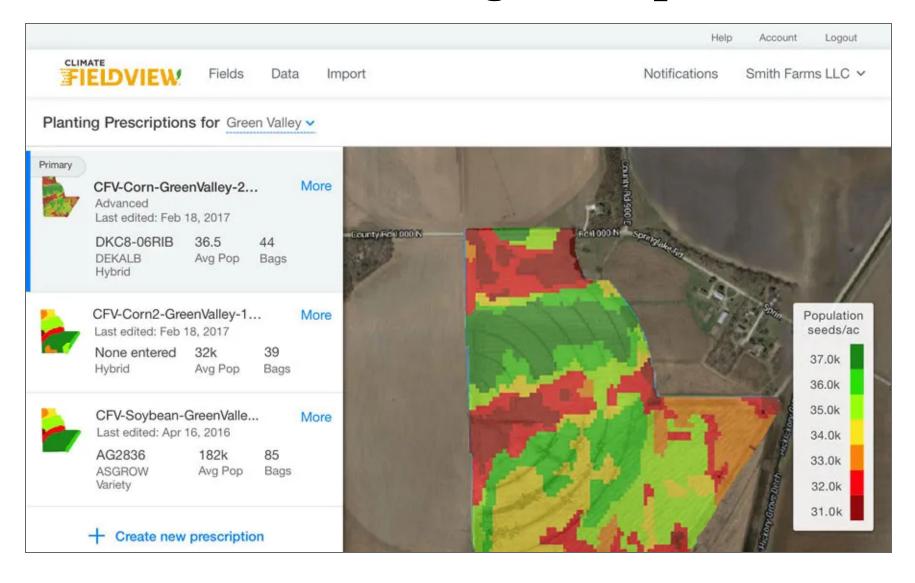
- Endpoints are CLEANED versions of state!
 - Remember our list of names from user object

This is just the Repositories section!

Climate Field Health



Climate Planting Prescriptions



Climate Web App Details

- Different web apps
 - Many shared services, some different
- Notice the different headers?
 - Expect change!
- Some services
 - Image service
 - Satellite Data services
 - User service
 - Farm service
 - Field service
 - Seed Data service

Okta is a SaaS company

- Has a handful of web apps
 - Most clients are customers
- A lot of server state is describing client
 - They already know those details
 - They don't care about that
- When Okta web apps update...
 - Old web apps work for a while
 - How share state when changing models?

Summary - Client/Server are separate

- Technical Reasons
- Practical Reasons
- Change and Maintenance Reasons

When you write both

• Imagine you are two separate people