

# MONOREPOS

THE GOOD  
THE BAD  
AND THE UGLY

# The plan

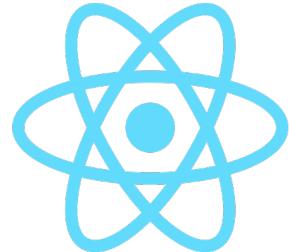
- The Good – why would I want one?
- The Bad – what's the catch?
- The Ugly – how do I get one?

**What is a  
monorepo?**

**Contains multiple  
packages or projects**

# Examples

# React



Branch: master ▾	react / packages /	Create new file	Upload files	Find file	History
	gaearon Split ReactDOM entry point (#17331) ...				● Latest commit b8f8258 2 hours ago
	..				
	<a href="#">babel-plugin-react-jsx</a> Modify Babel React JSX Duplicate Children Fix (#17101)				26 days ago
	<a href="#">create-subscription</a> Update local package versions for 16.10 release				19 days ago
	<a href="#">eslint-plugin-react-hooks</a> Update local package versions for 16.10 release				19 days ago
	<a href="#">jest-mock-scheduler</a> chore: upgrade to jest 24 (#15778)				last month
	<a href="#">jest-react</a> Update local package versions for 16.10 release				19 days ago
	<a href="#">legacy-events</a> Move eventSystemFlags to last argument in event plugin extractors (#1...				last month
	<a href="#">react-art</a> Update local package versions for 16.10 release				19 days ago
	<a href="#">react-cache</a> Prefix mock Scheduler APIs with _unstable (#15999)				5 months ago
	<a href="#">react-debug-tools</a> Rename createSyncRoot to createBlockingRoot (#17165)				18 days ago
	<a href="#">react-devtools-core</a> DevTools standalone shell changes: (#17213)				10 days ago
	<a href="#">react-devtools-extensions</a> docs: Fixed a typo in readme.md (#17119)				18 days ago

# Babel

**BABEL**

Branch: master ▾ babel / packages /		Create new file	Upload files	Find file	History
	chrishinrichs and existentialism Fix: Don't call Object.keys on non-objects (#10482) (#10683)		✓ Latest commit 70c0ed5	2 days ago	
..					
	<a href="#">babel-cli</a>	v7.7.0		5 days ago	
	<a href="#">babel-code-frame</a>	v7.5.5		4 months ago	
	<a href="#">babel-core</a>	v7.7.2		4 days ago	
	<a href="#">babel-generator</a>	v7.7.2		4 days ago	
	<a href="#">babel-helper-annotate-as-pure</a>	v7.7.0		5 days ago	
	<a href="#">babel-helper-bindify-decorators</a>	v7.7.0		5 days ago	
	<a href="#">babel-helper-builder-binary-assignm...</a>	v7.7.0		5 days ago	
	<a href="#">babel-helper-builder-react-jsx</a>	v7.7.0		5 days ago	
	<a href="#">babel-helper-call-delegate</a>	v7.7.0		5 days ago	
	<a href="#">babel-helper-create-class-features-p...</a>	v7.7.0		5 days ago	
	<a href="#">babel-helper-create-regexp-features...</a>	v7.7.2		4 days ago	
	<a href="#">babel-helper-define-map</a>	v7.7.0		5 days ago	

**“Juggling a multimodule  
project over multiple repos is  
like trying to teach a newborn  
baby how to ride a bike”**

# Alternatives

- Monolith
- Multirepo

A photograph of a desert landscape at sunset. The sky is filled with warm orange and yellow hues. In the foreground, there are silhouettes of bare branches and small birds. The middle ground shows rolling hills and mountains. The text "THE GOOD" is overlaid in large, white, bold letters.

# THE GOOD

# Why would I **want** one?

- One development environment
- Cross package changes
- Single culture

# One development environment

- Everything in one place
- Common configuration
- Backend and frontend
- Easy to get started

# Cross package changes

- One pull request for features spanning multiple packages
- One review

# **Single culture**

- Software is easy
- People are hard

A wide-angle photograph of a desert landscape at sunset. The sky is filled with warm, orange and yellow clouds. In the foreground, there are dry, brown grasses and shrubs. A range of mountains is visible in the middle ground, their peaks silhouetted against the bright sky. On the right side, several tall saguaro cacti stand against the horizon.

THE BAD

# What's the **catch**?

- Bigger repository
- Longer build times
- Tooling less mature
- Fewer resources
- Incompatible culture

# Bigger repository



# Bigger repository

## Example: VFS for Git and the Windows repository

Here's a comparison of some common Git actions on the Windows repository with Azure DevOps.

Action	Without VFS for Git	With VFS for Git
Clone (Bare)	12+ hours	4-5 minutes
Checkout	3 hours	30 seconds
Status	10 minutes	3 seconds
Commit	30 minutes	6 seconds

# Longer build times



# Tooling **less** mature

- Tools assume things that don't hold for monorepos
- Continuous Integration tools are tricky

# **Fewer resources**

- Sometimes you're on your own

# Incompatible culture

- Requires trust
- Having your own repository can free you from bureaucracy
- Quality of code reviews
- Shared ownership

A photograph of a desert landscape at sunset. The sky is filled with warm orange and red hues, with darker clouds on the horizon. In the foreground, there's a large, dead, leafless tree with many branches. The ground is covered in dry, brown vegetation and some fallen leaves. The overall atmosphere is somber and desolate.

# THE UGLY

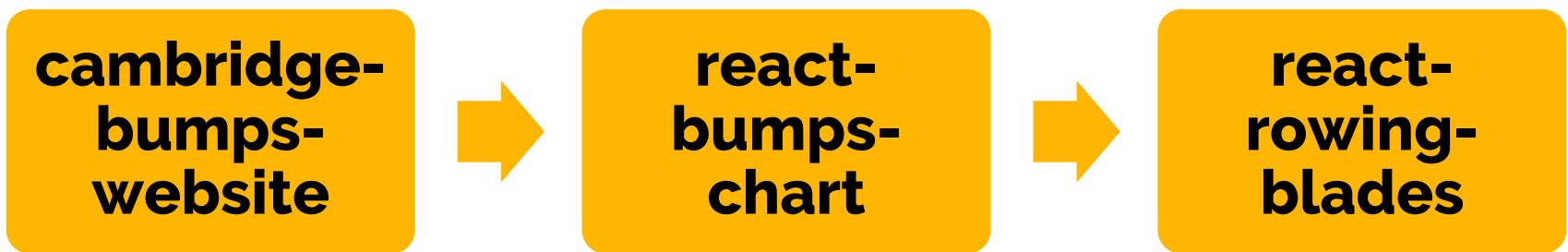
# How do I get a monorepo?



# Incremental migration



# Demo





# Yarn workspaces

- Run `yarn install` once to install dependencies for multiple packages



yarn

# Why would you want to do this?

- Your dependencies can be linked together
- More latitude to optimize dependencies
- Single lockfile



# Lerna

- Optimizes managing multi-package repositories with git and npm



# Lerna

- Manages
  - Testing
  - Building
  - Versioning
  - Releasing

# Lerna

- To make this really useful we create top level scripts

# Lerna

- Lerna import
- Lerna version
- Lerna publish

**In conclusion**

**Is it right for me or  
my team?**

# Technical

```
69
70     . . .
71     . . .
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86     . . .
87     . . .
88     . . .
```

**TOOLING**

# Cultural



**SHARED  
OWNERSHIP**

# THANKS

@DoWhatIMean

[github.com/johnwalley/monorepo-talk](https://github.com/johnwalley/monorepo-talk)

[www.remarkablecharts.com](http://www.remarkablecharts.com)