

— WTF is —  
NEXT .JS

@colbyfayock

# Colby Fayock

Developer Advocate



@colbyfayock



# *The Great* Framework Wars



django



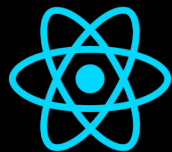






Gatsby

NEXT.js



React



ANGULAR



Vue.js



SVELTE

















**RedwoodJS**



**Blitz**



BRIDGETOWN



11ty







NEXT.js



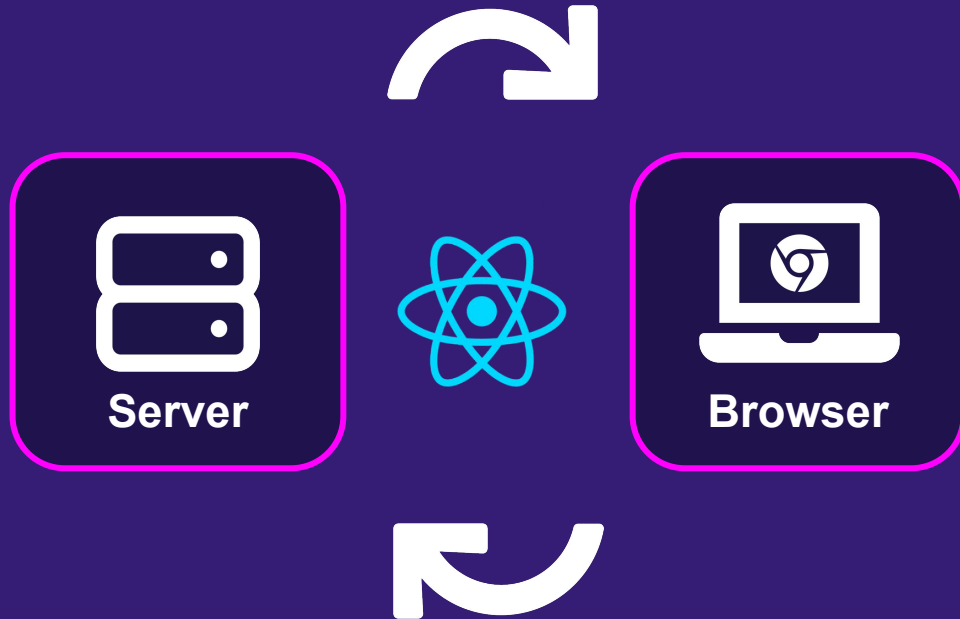
**October 25, 2016**



ZEIT



# Universal JavaScript Apps



# Universal JavaScript Apps



Server



Browser

# Universal JavaScript Apps



# Universal JavaScript Apps



Server

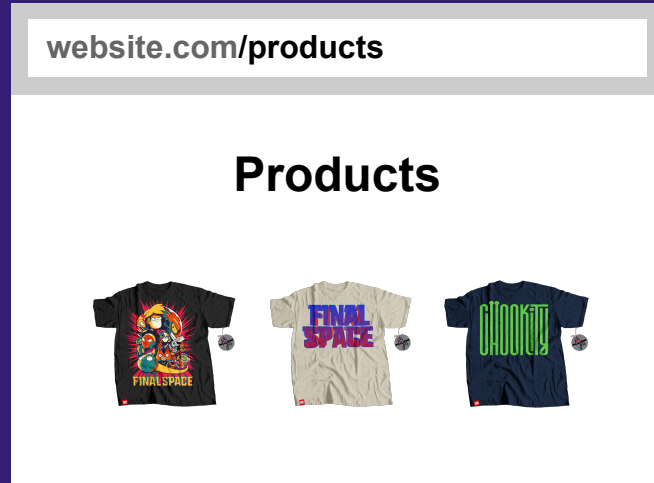


Browser



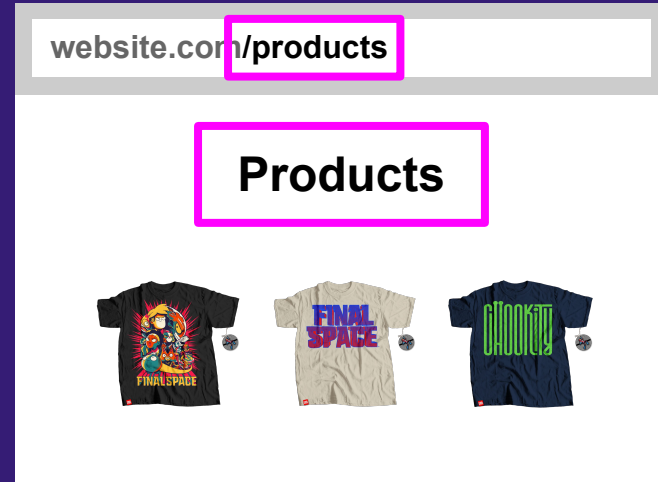
# File System Based Router

- pages
  - index.js
  - products.js
  - contact.js



# File System Based Router

- pages
  - index.js
  - **products.js**
  - contact.js



# Data Fetching

```
export default class extends React.Component {  
  static async getInitialProps () {  
    const res = await fetch('https://website.com/products/123')  
    const data = await res.json()  
    return {  
      products: data.products  
    }  
  }  
}
```

# Data Fetching

```
export default class extends React.Component {  
  static async getInitialProps() {  
    const res = await fetch('https://website.com/products/123')  
    const data = await res.json()  
    return {  
      products: data.products  
    }  
  }  
}
```

# Performance

**Automatic Server Rendering**

**Automatic Code Splitting**

**Prefetching**

**Service Workers**

# 4.5 Years Later

# Universal JavaScript Apps

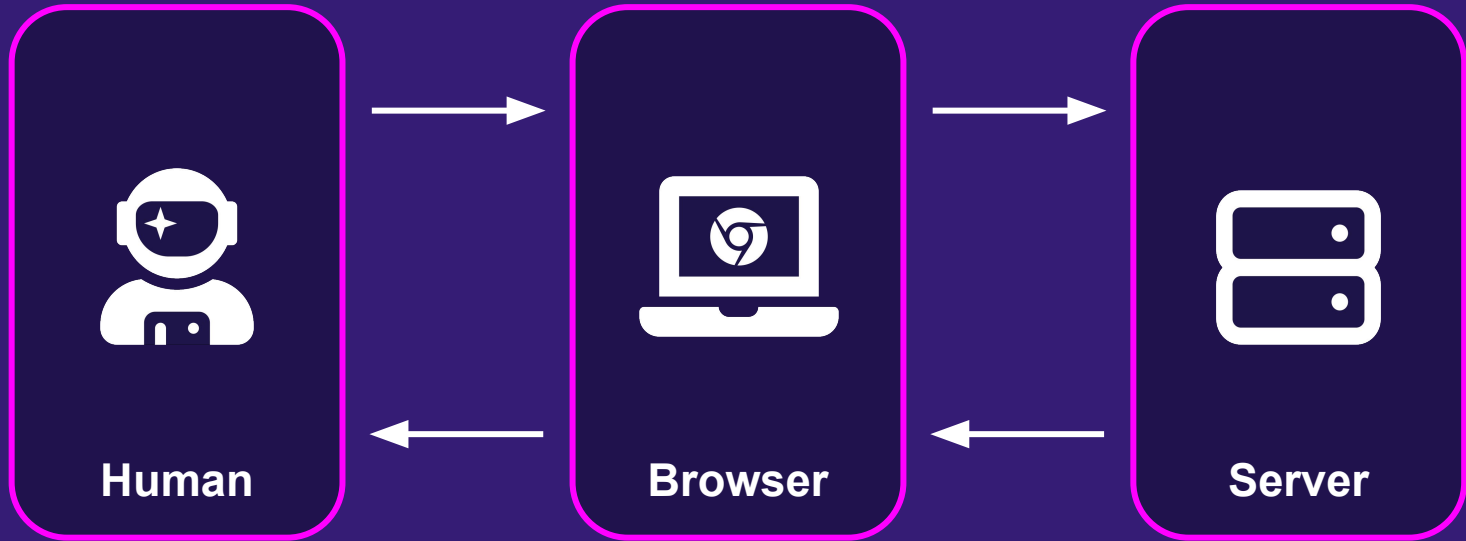


Server



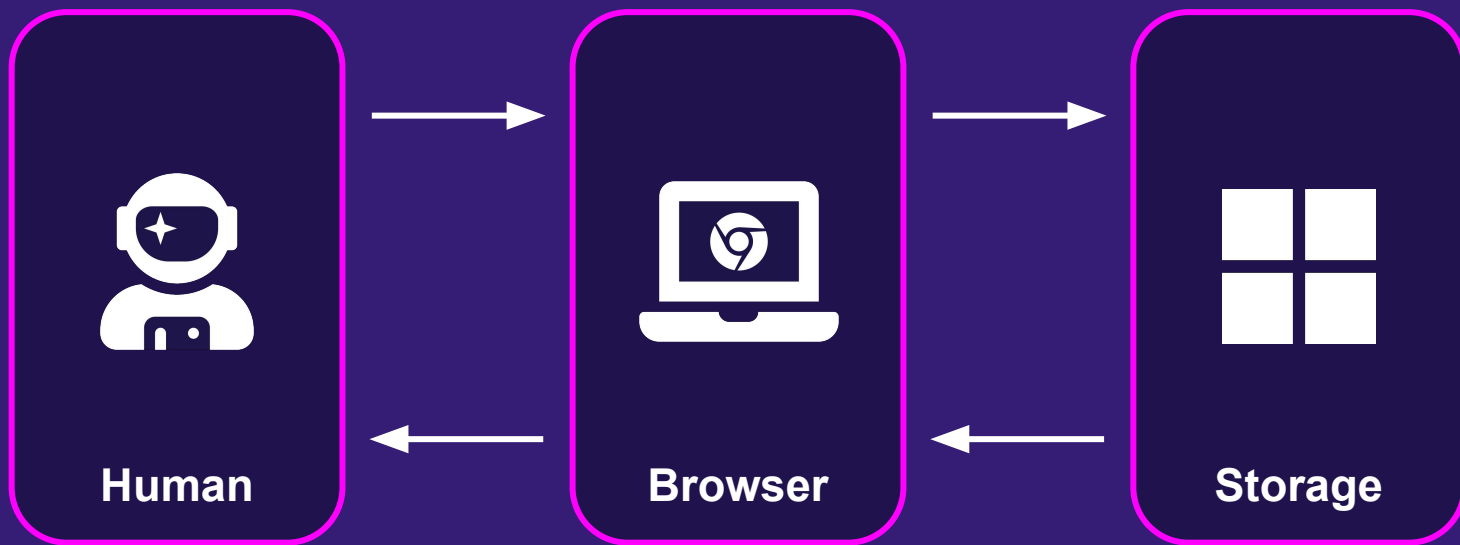
Browser

# Server Side Rendering (SSR)

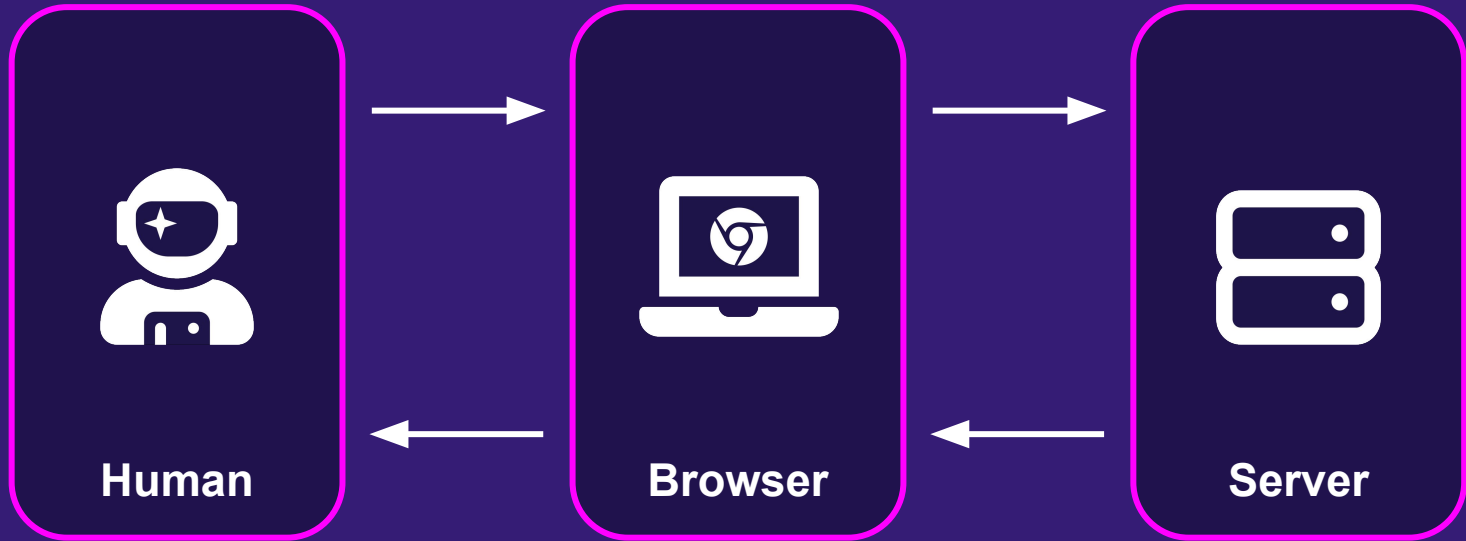




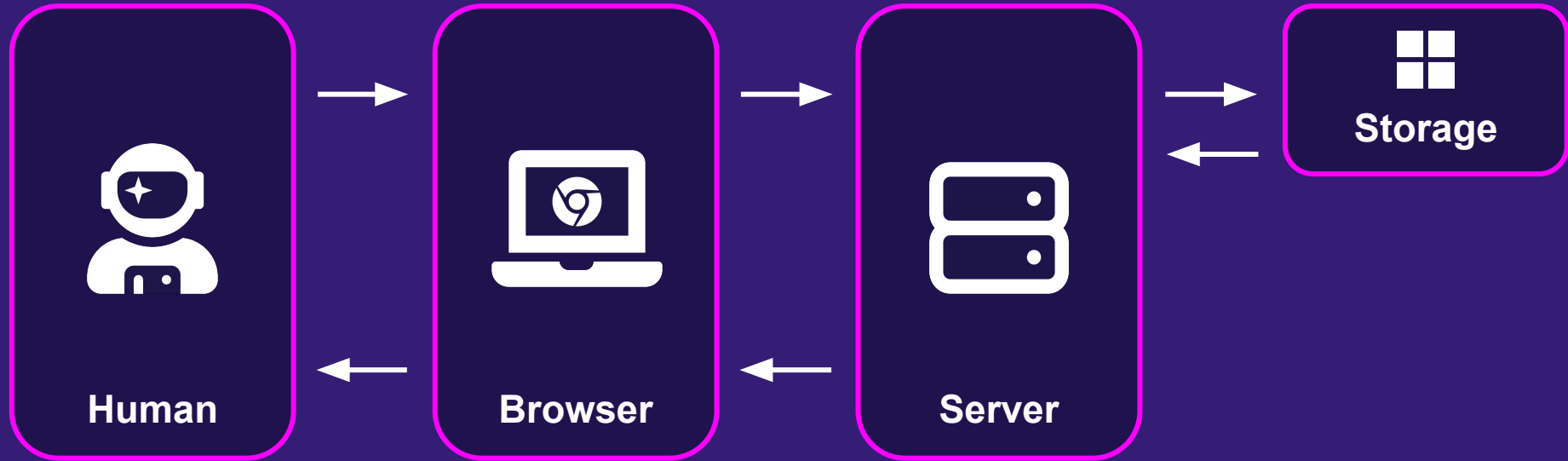
# Static Site Generation (SSG)



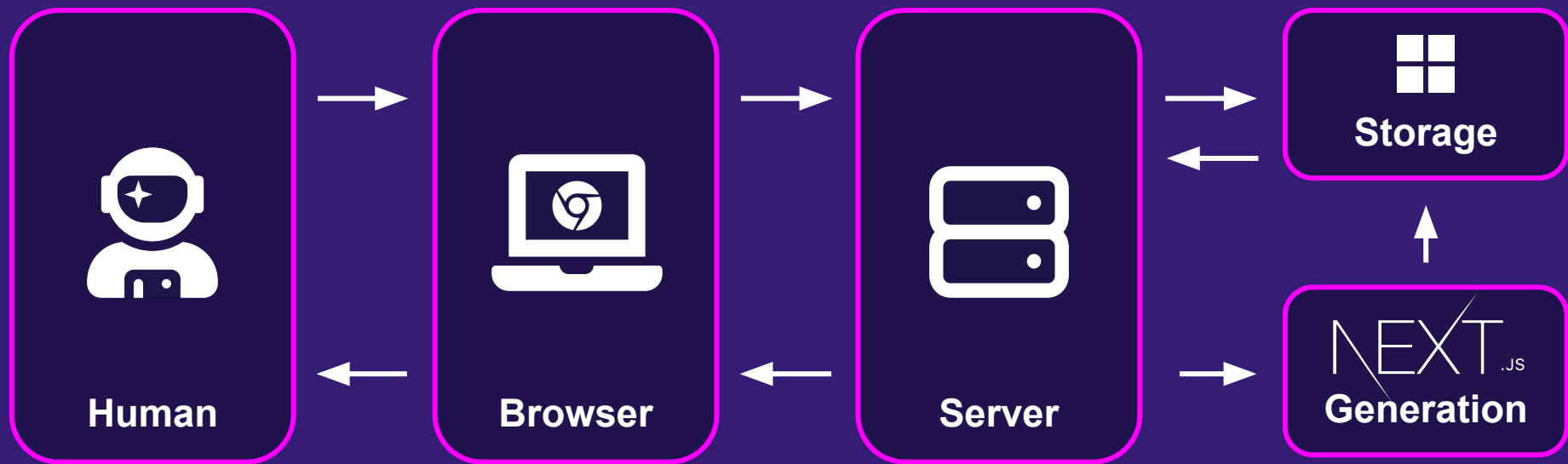
# Incremental Static Regeneration (ISR)



# Incremental Static Regeneration (ISR)

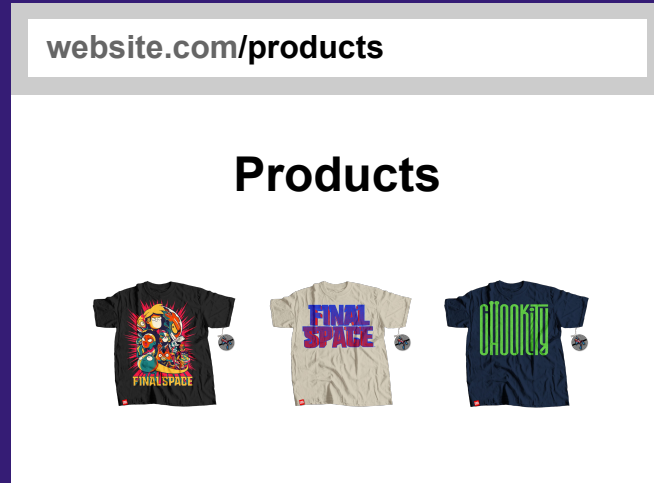


# Incremental Static Regeneration (ISR)



# File System Based Router

- pages
  - index.js
  - products.js
  - contact.js



# File System Based Router

- pages
  - index.js
  - products
    - [id].js



# File System Based Router

- pages
- index.js
- products
- [...params].js



# Data Fetching

**getServerSideProps**

**getStaticProps**

**getStaticPaths**



# Server Side Rendering (SSR)

```
export async function getServerSideProps() {  
  const res = await fetch('https://website.com/products/123')  
  const data = await res.json()  
  return {  
    props: {  
      products: data.products  
    }  
  }  
}
```

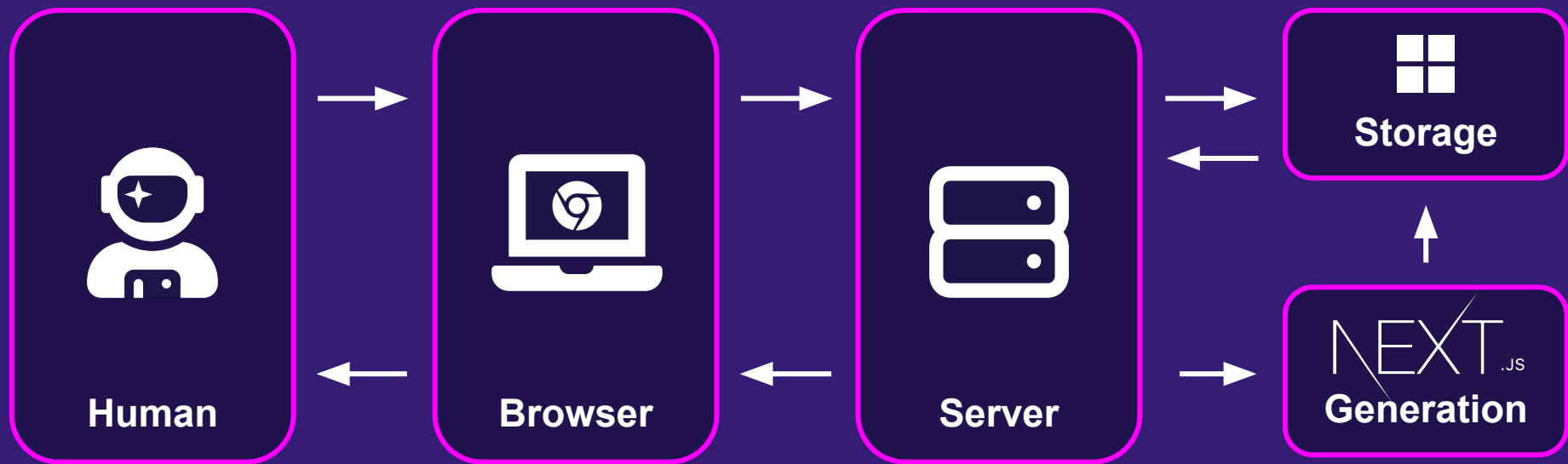
# Static Site Generation (SSG)

```
export async function getStaticProps() {  
  const res = await fetch('https://website.com/products/123')  
  const data = await res.json()  
  return {  
    products: data.products  
  }  
}
```

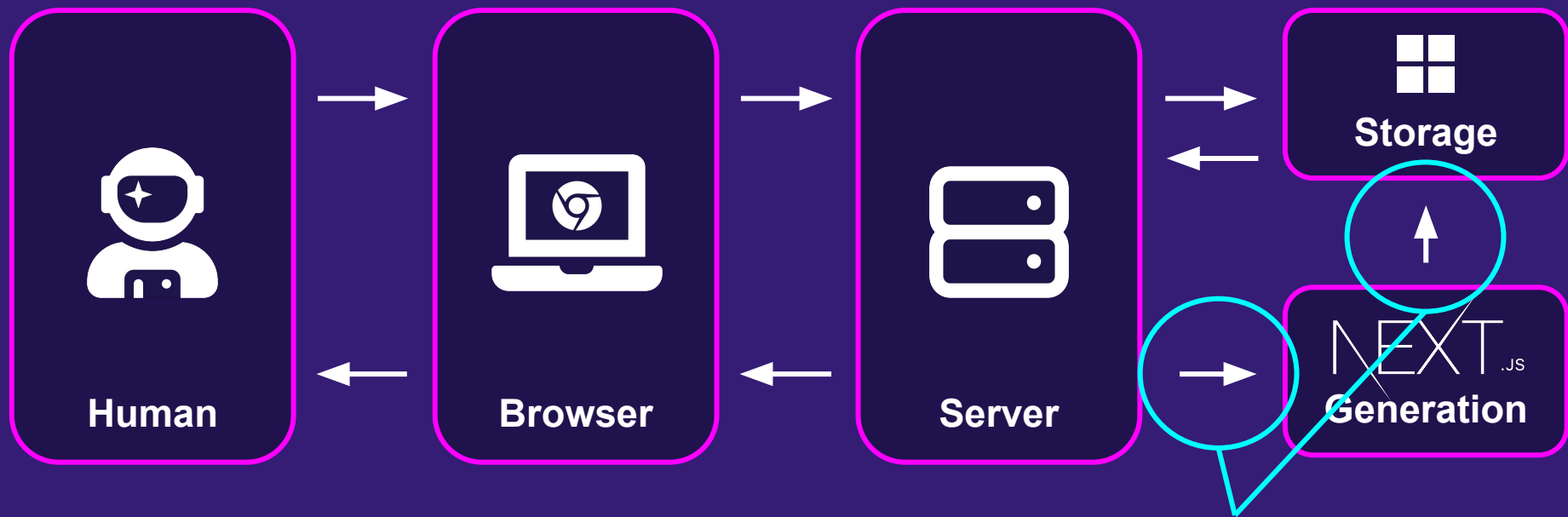
# Incremental Static Regeneration (ISR)

```
export async function getStaticProps() {  
  const res = await fetch('https://website.com/products/123')  
  const data = await res.json()  
  return {  
    props: {  
      products: data.products  
    },  
    revalidate: 1  
  }  
}
```

# Incremental Static Regeneration (ISR)



# Incremental Static Regeneration (ISR)



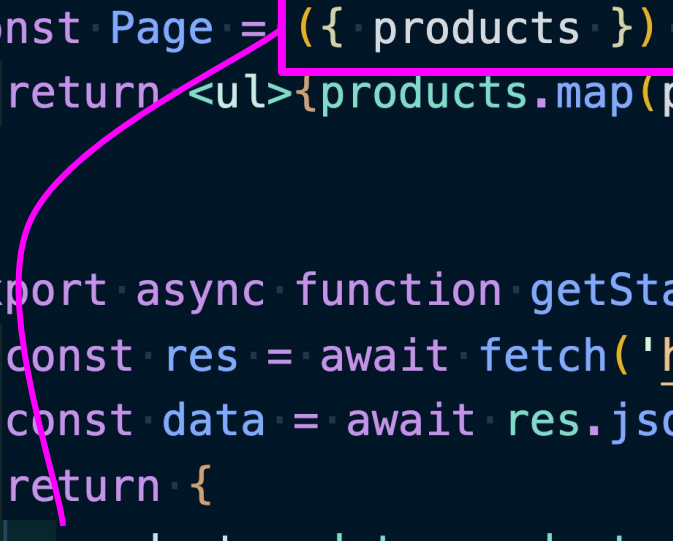
In the Background!

# Incremental Static Regeneration (ISR)

```
export async function getStaticProps() {  
  const res = await fetch('https://website.com/products/123')  
  const data = await res.json()  
  return {  
    props: {  
      products: data.products  
    },  
    revalidate: 1  
  }  
}
```

# Data Fetching

```
const Page = ({ products }) => {  
  return <ul>{products.map(p => <li>{ p.title }</li>)}</ul>  
}  
  
export async function getStaticProps() {  
  const res = await fetch('https://website.com/products/123');  
  const data = await res.json();  
  return {  
    products: data.products  
  }  
}
```



```

yarn run v1.22.10
$ next build
info - Creating an optimized production build
info - Compiled successfully
info - Collecting page data
info - Generating static pages (2/2)
info - Finalizing page optimization

```

<u>Page</u>	<u>Size</u>	<u>First Load JS</u>
○ /	3.14 kB	66 kB
├─┬ css/bde919bbfb8319e266c6.css	473 B	
├─┬ /_app	0 B	62.8 kB
├─○ /404	3.46 kB	66.3 kB
└─λ /api/hello	0 B	62.8 kB
+ First Load JS shared by all	62.8 kB	
├─ chunks/f6078781a05fe1bcb0902d23dbbb2662c8d200b3.5a1e72.js	13.2 kB	
├─ chunks/framework.e2fe4a.js	41.8 kB	
├─ chunks/main.deff5c.js	6.62 kB	
├─ chunks/pages/_app.7ce2b5.js	527 B	
├─ chunks/webpack.50bee0.js	751 B	
└─ css/730705b13d10203ad198.css	204 B	


- λ (Server) server-side renders at runtime (uses `getInitialProps` or `getServerSideProps`)
- (Static) automatically rendered as static HTML (uses no initial props)
- (SSG) automatically generated as static HTML + JSON (uses `getStaticProps`)
- (ISR) incremental static regeneration (uses `revalidate` in `getStaticProps`)

✨ Done in 7.44s.



```
yarn run v1.22.10
$ next build
info - Creating an optimized production build
info - Compiled successfully
info - Collecting page data
info - Generating static pages (2/2)
info - Finalizing page optimization
```

<u>Page</u>	<u>Size</u>	<u>First Load JS</u>
○ /	3.14 kB	66 kB
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/_app	0 B	62.8 kB
○ /404	3.46 kB	66.3 kB
λ /api/hello	0 B	62.8 kB
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└─ chunks/f6078781a05fe1bcb0902d23dbbb2662c8d200b3.5a1e72.js	13.2 kB	
chunks/framework.e2fe4a.js	41.8 kB	
chunks/main.deff5c.js	6.62 kB	
chunks/pages/_app.7ce2b5.js	527 B	
chunks/webpack.50bee0.js	751 B	
css/730705b13d10203ad198.css	204 B	



λ	(Server)	server-side renders at runtime (uses <code>getInitialProps</code> or <code>getServerSideProps</code> )
○	(Static)	automatically rendered as static HTML (uses no initial props)
●	(SSG)	automatically generated as static HTML + JSON (uses <code>getStaticProps</code> )
	(ISR)	incremental static regeneration (uses <code>revalidate</code> in <code>getStaticProps</code> )

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yarn run v1.22.10
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<u>Page</u>	<u>Size</u>	<u>First Load JS</u>
○ /	3.14 kB	66 kB
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○ /404	3.46 kB	66.3 kB
λ /api/hello	0 B	62.8 kB
+ First Load JS shared by all	62.8 kB	
├─ chunks/f6078781a05fe1bcb0902d23dbbb2662c8d200b3.5a1e72.js	13.2 kB	
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├─ chunks/main.deff5c.js	6.62 kB	
├─ chunks/pages/_app.7ce2b5.js	527 B	
├─ chunks/webpack.50bee0.js	751 B	
└─ css/730705b13d10203ad198.css	204 B	

λ (Server)	server-side renders at runtime (uses <code>getInitialProps</code> or <code>getServerSideProps</code> )
○ (Static)	automatically rendered as static HTML (uses no initial props)
● (SSG)	automatically generated as static HTML + JSON (uses <code>getStaticProps</code> )
(ISR)	incremental static regeneration (uses <code>revalidate</code> in <code>getStaticProps</code> )

✨ Done in 7.44s.

# What else?

# Serverless Functions

- pages
- api
- checkout.js
- **products.js**

GET website.com/products

```
{
  "items": [
    {
      "id": "1234"
      "title": "Cool T-Shirt",
    }
  ]
}
```

# Serverless Functions

GET website.com/products

```
{
  "items": [
    {
      "id": "1234"
      "title": "Cool T-Shirt",
    }
  ]
}
```

```
export default function handler(req, res) {
  const products = await getAllProducts();

  const data = {
    items: products
  }

  res.status(200).json(data);
}
```

# Components & Plug-Ins

```
import Image from 'next/image';  
  
<Image src="/tshirt.png" />
```



## Next Image

- Modern Formats
- Optimization
- Responsive
- Prioritization

# Components & Plug-Ins

```
import Head from 'next/head'
```

```
<Head>
```

```
  <title>Products | Space Jelly</title>
```

```
</Head>
```

```
<!DOCTYPE html>
```

```
<html lang="en">
```

```
  <head>
```

```
    <meta name="viewport" content="width=device-width, initial-scale=1">
```

```
    <meta charset="utf-8">
```

```
    <title>Products | Space Jelly</title>
```

```
    <link rel="icon" href="/favicon.ico">
```

## Next Head

- Title
- Meta
- Open Graph
- Custom Assets

# Other Features

**Built-in CSS Support**

**TypeScript**

**Fetch**

**Dynamic Imports**



🔍 Search...

# next.config.js

## ▼ next.config.js

- **Introduction**
- Environment Variables
- Base Path
- Rewrites
- Redirects
- Custom Headers
- Custom Page Extensions
- CDN Support with Asset Prefix
- Custom Webpack Config
- Compression
- Runtime Configuration

For custom advanced behavior of Next.js, you can create a `next.config.js` in the root of your project directory (next to `package.json`).

`next.config.js` is a regular Node.js module, not a JSON file. It gets used by the Next.js server and build phases, and it's not included in the browser build.

Take a look at the following `next.config.js` example:

```
module.exports = {  
  /* config options here */  
}
```

You can also use a function:

```
module.exports = (phase, { defaultConfig }) => {  
  return {  
    /* config options here */  
  }  
}
```

# How does it compare?

---



# Page Building & Routing

NEXT.js



Gatsby

# Page Building & Routing



Gatsby

# Page Building & Routing



**Gatsby**

# Data Layer

NEXT.js



Gatsby

# Data Layer

NEXT.js



Gatsby

# Data Layer



**Gatsby**



# Plugins & Community



**Gatsby**

# Plugins & Community

NEXT.js



Gatsby

# Plugins & Community



**Gatsby**



**Server Side Rendering**  
**Serverless Functions**  
**Automatic Static Optimization**



# Gatsby

**Themes**

**Integrations**

**Easy to Deploy**

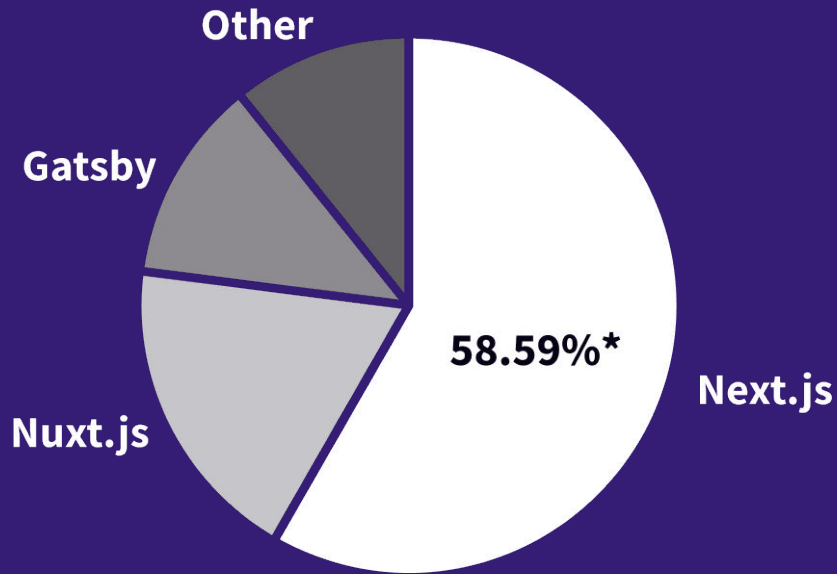
NEXT.js



Gatsby


# Who's using this thing?

# Adoption



<https://almanac.httparchive.org/en/2020/jamstack>



STREAM WANDA VISION EXCLUSIVELY ON 

MARVEL TV

# PREMIERING MAY 21

His plan? World domination! Watch 'Marvel's M.O.D.O.K.', streaming on Hulu May 21.

LEARN MORE



Episode 8 Now  
Streaming

**M.O.D.O.K. Premieres**  
May 21

Spider-Man: No Way  
Home

Streaming June 11

Listen Now!



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# hulu

Watch thousands of shows and movies, with plans starting at  
\$5.99/month.

HBO Max™, SHOWTIME®, CINEMAX® and STARZ® available as add-ons.

START YOUR FREE TRIAL

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Get Hulu, Disney+, and ESPN+ starting at \$12.99/month.\*

[Details](#)

GET BUNDLE

[Terms apply](#)

<https://nextjs.org/case-studies/hulu>

INCLUDED IN ALL PLANS

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## FEATURED COURSE

# Accessible Cross-Browser CSS Form Styling



Stephanie Eckles

Stephanie Eckles has prepared several lessons that work through the creation of a complete form demo featuring the most common controls with a variety of attributes. You'll create semantic fieldsets, add responsive styles without media queries, and prepare styles for accessible validation. The demo is built with Sass and Eleventy.



React



JavaScript



CSS



Angular



Node



TypeScript





GraphQL



AWS

<https://egghead.io/>

@colbyfayock



laurosilvacom and zacjones93 Add Video Analysis App cours... 2 5eb5bf3 20 hours ago 1,252 commits

.github/workflows	some url fixeroos	last month
.storybook	sanity updates	21 days ago
.vscode	add more analytics	2 months ago
@types	sanity powered blog with mdx support	4 days ago
config/jest	Jh/auth (#4)	7 months ago
cypress	Course dependency fix (#158)	4 months ago
jest	fix broken footer link	6 months ago
public	sanity powered blog with mdx support	4 days ago
src	Add Video Analysis App course to home page (#478)	20 hours ago
studio	use Sanity with cdn true	3 days ago
.babelrc	fix some lesson page bits	4 months ago
.env.development	flip env var (#435)	12 days ago

About










The frontend for egghead.io.

- egghead.io
- react
  - typescript
  - jest
  - nextjs
  - egghead
  - mdx
  - cypress
  - tailwindcss

Readme

View license

Contributors 25



+ 14 contributors

# How do I get started?



# Create Next App

```
npx create-next-app  
# or  
yarn create next-app
```

## Create Next App

The easiest way to get started with Next.js is by using `create-next-app`. This simple CLI tool enables you to quickly start building a new Next.js application, with everything set up for you. You can create a new app using the default Next.js template, or by using one of the [official Next.js examples](#). To get started, use the following command:

```
npx create-next-app  
# or  
yarn create next-app
```

### Options

`create-next-app` comes with the following options:

- **-e, --example [name][github-url]** - An example to bootstrap the app with. You can use an example name from the [Next.js repo](#) or a GitHub URL. The URL must be a valid GitHub repository URL.

# Create Next App

EXPLORER

...

JS index.js

×

OPEN EDITORS

×

JS index.js pages

TEST

>

.next

>

node\_modules

>

pages

>

api

JS

\_app.js

JS

index.js

>

public

>

styles

🔍

.gitignore

{ }

package.json

📖

README.md

1

import Head from 'next/head' 4.2K (gzipped: 1.6K)

2

import styles from '../styles/Home.module.css'

3

4

export default function Home() {

5

return (

6

<div className={styles.container}>

7

<Head>

8

<title>Create Next App</title>

9

<link rel="icon" href="/favicon.ico" />

10

</Head>

11

12

<main className={styles.main}>

13

<h1 className={styles.title}>

14

Welcome to <a href="https://nextjs.org">Next.js!</a>

15

</h1>

16

17

<p className={styles.description}>

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# Create Next App

## Welcome to Next.js!

Get started by editing `pages/index.js`

### Documentation →

Find in-depth information about Next.js features and API.

### Learn →

Learn about Next.js in an interactive course with quizzes!

### Examples →

Discover and deploy boilerplate example Next.js projects.

### Deploy →

Instantly deploy your Next.js site to a public URL with Vercel.



# Create Next App

```
yarn create next-app -e ...  
# or  
npx create-next-app -e ...
```

## Next.js WordPress Starter

all contributors 8

netlify Success

Scaling WordPress with the power of [Next.js](#) and the static web!

### ⚡ Quick Start

#### Requirements

- [WordPress](#)
- [WPGraphQL](#)

```
yarn create next-app -e https://github.com/colbyfayock/next-wordpress-starter  
# or  
npx create-next-app -e https://github.com/colbyfayock/next-wordpress-starter
```

Add an `.env.local` file to the root with the following:

```
WORDPRESS_GRAPHQL_ENDPOINT="http://wordpressite.com/graphql"
```

@colbyfayock

# Next.js Starters

EXPLORER

...

JS index.js

×



...

✓ OPEN EDITORS

✕ JS index.js src/pages

✓ TEST-WORDPRESS

> models

✓ pages

> [slugParent]

> authors

> categories

> posts

JS \_app.js

JS \_document.js

JS 404.js

JS categories.js

JS index.js

```
16 export default function Home({ posts }) {
17   const { metadata = {} } = useSite();
18   const { title, description } = metadata;
19
20   return (
21     <Layout>
22       <WebsiteJsonLd siteTitle={title} />
23       <Header>
24         <h1
25           className={styles.title}
26           dangerouslySetInnerHTML={{
27             __html: title,
28           }}
29       />
30
31     <p
```

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# Next.js Starters

EXPLORER

...

JS posts.js

×



...

✓ OPEN EDITORS

× JS posts.js src/data

✓ TEST-WORDPRESS

✓ data

JS categories.js

JS pages.js

JS posts.js

JS site.js

JS users.js

> hooks

> lib

> models

✓ pages

> [slugParent]

```
1  import { gql } from '@apollo/client'; 103.8K (gzipped: 29.8K)
2
3  export const QUERY_ALL_POSTS = gql`
4    {
5      posts(first: 10000) {
6        edges {
7          node {
8            author {
9              node {
10               avatar {
11                 height
12                 url
13                 width
14               }
15               id
16               name
17               slug
```

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# Next.js Starters

Next.js WordPress Starter

Docs

About



## Next.js WordPress Starter

Scaling WordPress to the static web!

Omnis vero possimus qui fugiat



By Colby Fayock

July 15th, 2020

Dolor sit Amet and more

Amet cumque qui omnis sed laborum quis fugiat eius adipisci eos necessitatibus quasi et autem ad labore minus eligendi nobis laudantium est iure aperiam id porro unde impedit dolores impedit voluptas quis commodi natus sit sint doloribus incidunt quia praesentium et aut dolore quia cumque maxime

@colbyfayock

# Moar Next.js!

## Documentation

- **Getting Started**

- ▼ Basic Features

- Pages
- Data Fetching
- Built-in CSS Support
- Image Optimization
- Static File Serving
- Fast Refresh
- TypeScript
- Environment Variables
- Supported Browsers and Features

- Routing

# Getting Started

Welcome to the Next.js documentation!

If you're new to Next.js we recommend that you start with the [learn course](#).

The interactive course with quizzes will guide you through everything you need to know to use Next.js.

If you have questions about anything related to Next.js, you're always welcome to ask our community on [GitHub Discussions](#).

## System Requirements

- [Node.js 10.13](#) or later
- MacOS, Windows (including WSL), and Linux are supported

## Setup

We recommend creating a new Next.js app using `create-next-app`, which sets up everything automatically for you. To create a project, run:



colbyfayock.com/ecommerce



## Space Jelly Shop



### Space Jelly Stickers

Add some flare to your laptop with a sticker of Cosmo the Space Jellyfish.

\$10.00

Add to Cart

### Space Jelly T-shirt

Show your love for Space Jelly with a t-shirt.

\$25.00

Add to Cart



Or pay with card

Email

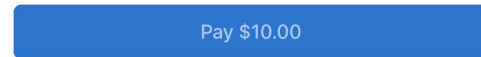
Card information


1234 1234 1234 1234		VISA	MasterCard	AMERICAN EXPRESS	Discover
MM / YY	CVC				

Name on card

Country or region

United States	▼
ZIP	



 Jamstack Handbook will contribute 5% of your purchase to remove CO<sub>2</sub> from the atmosphere.

@colbyfayock

# Colby Fayock

Developer Advocate



@colbyfayock



# Thank You

[colbyfayock.com/snipcart-nextjs](https://colbyfayock.com/snipcart-nextjs)