



Gatekeepers to Gardeners

Design Systems for Every Developer

Maryann M. Bell

Senior Engineering Manager @ Adobe

Our platform, Ethos, serves all of Adobe

3K

developers using Ethos
across Adobe

3.5K

services on Ethos
from across Adobe

18K

deployments to production
in the last 3 months

Goals of every developer

1. Make cool stuff
2. Deliver quickly
3. Work well together

We were working with limited resources

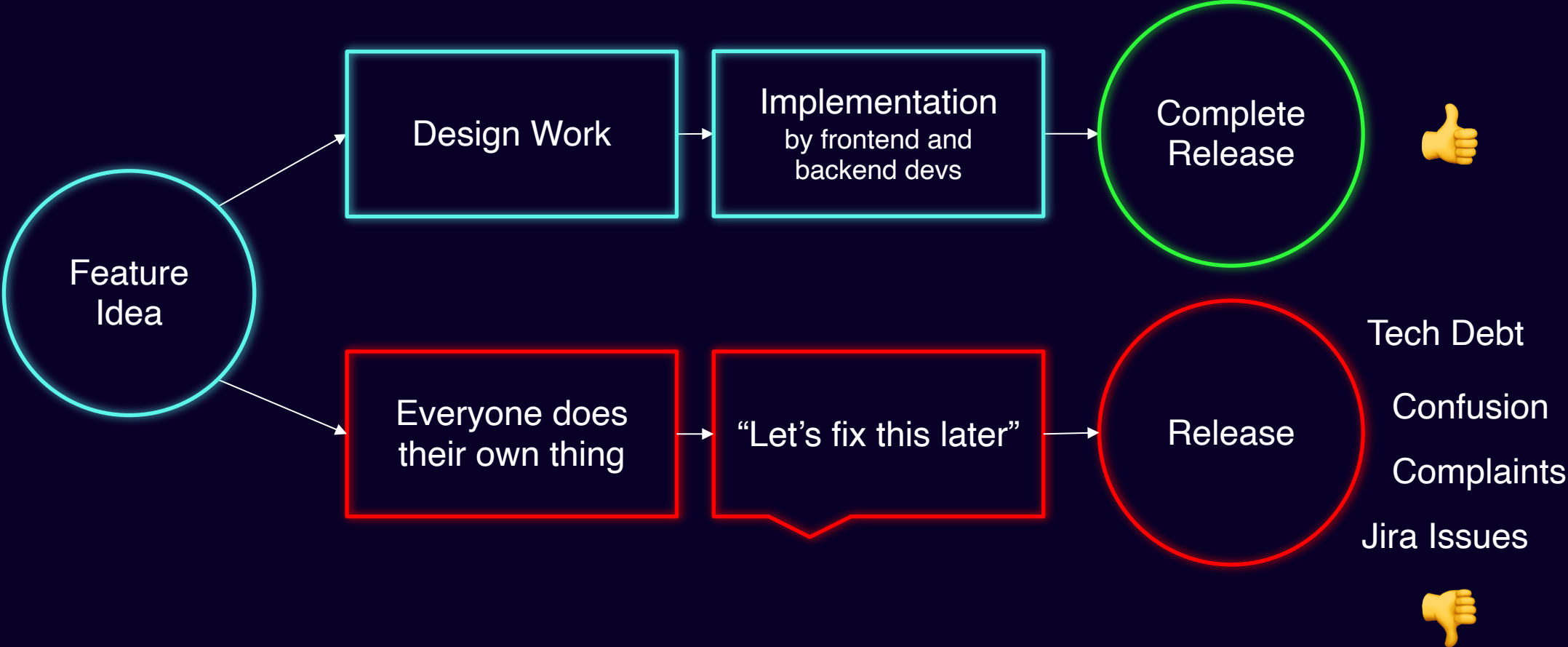


Backend & systems
developers

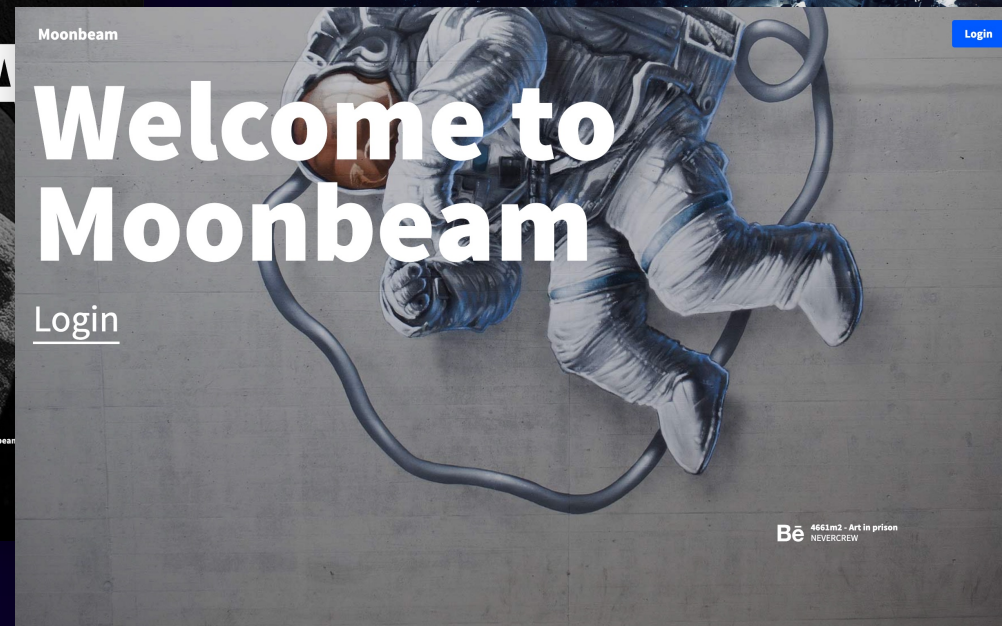
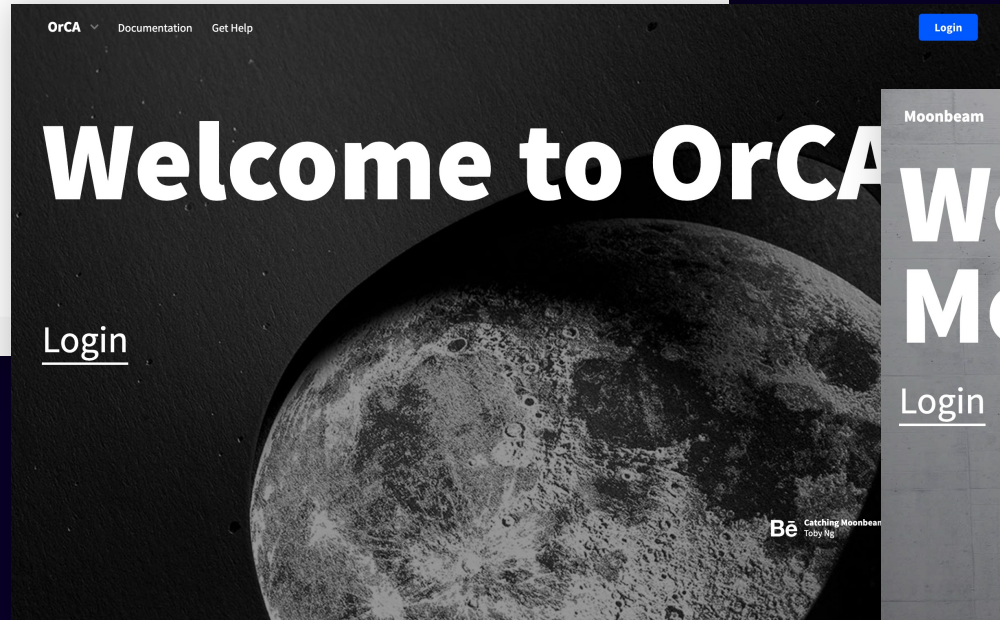
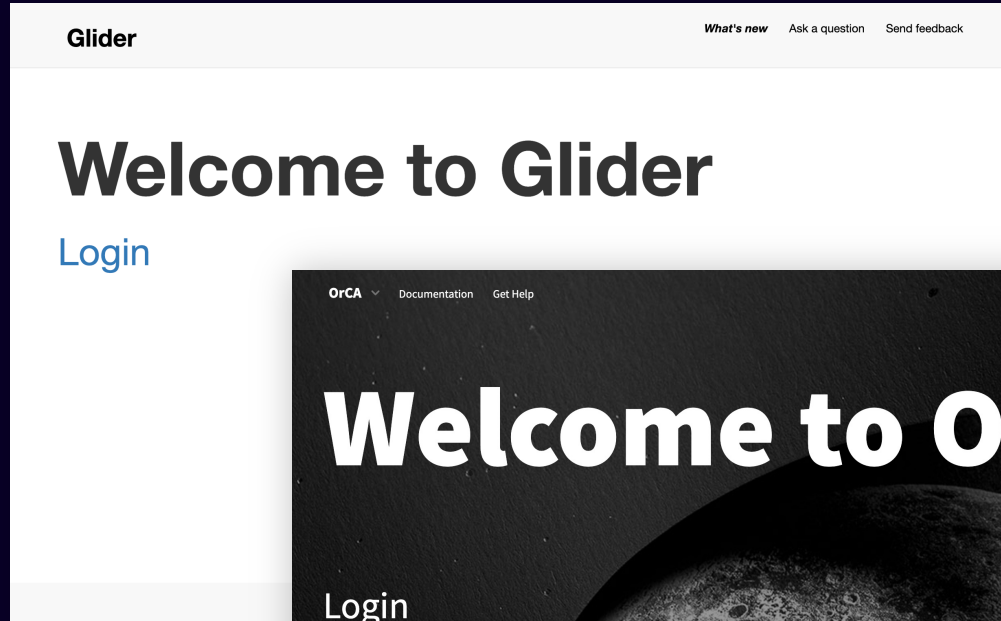


Frontend
developers / designers

Feature development was a problem



The problems were showing up in our product



Goals of every developer

- ~~1. Make cool stuff~~
- ~~2. Deliver quickly~~
- ~~3. Work well together~~





A design system is...

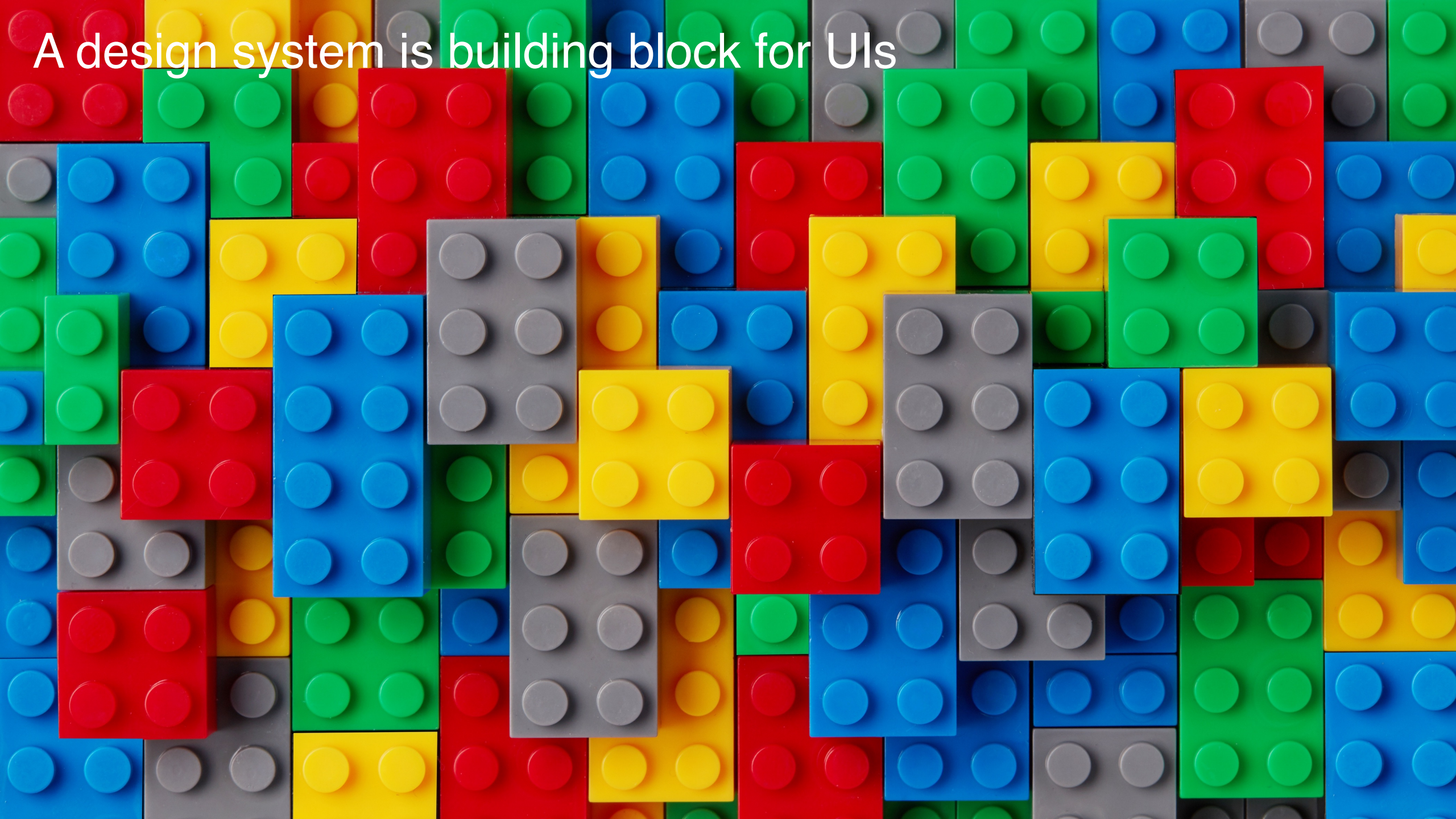
A design system is a collection of

**reusable functional elements—
components and patterns—**

guided by clear standards that product teams use to create a consistent experience across a range of products.

<https://xd.adobe.com/ideas/principles/design-systems/>

A design system is building block for UIs



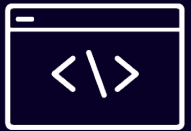
4 parts of a design system



Principles & Guidelines



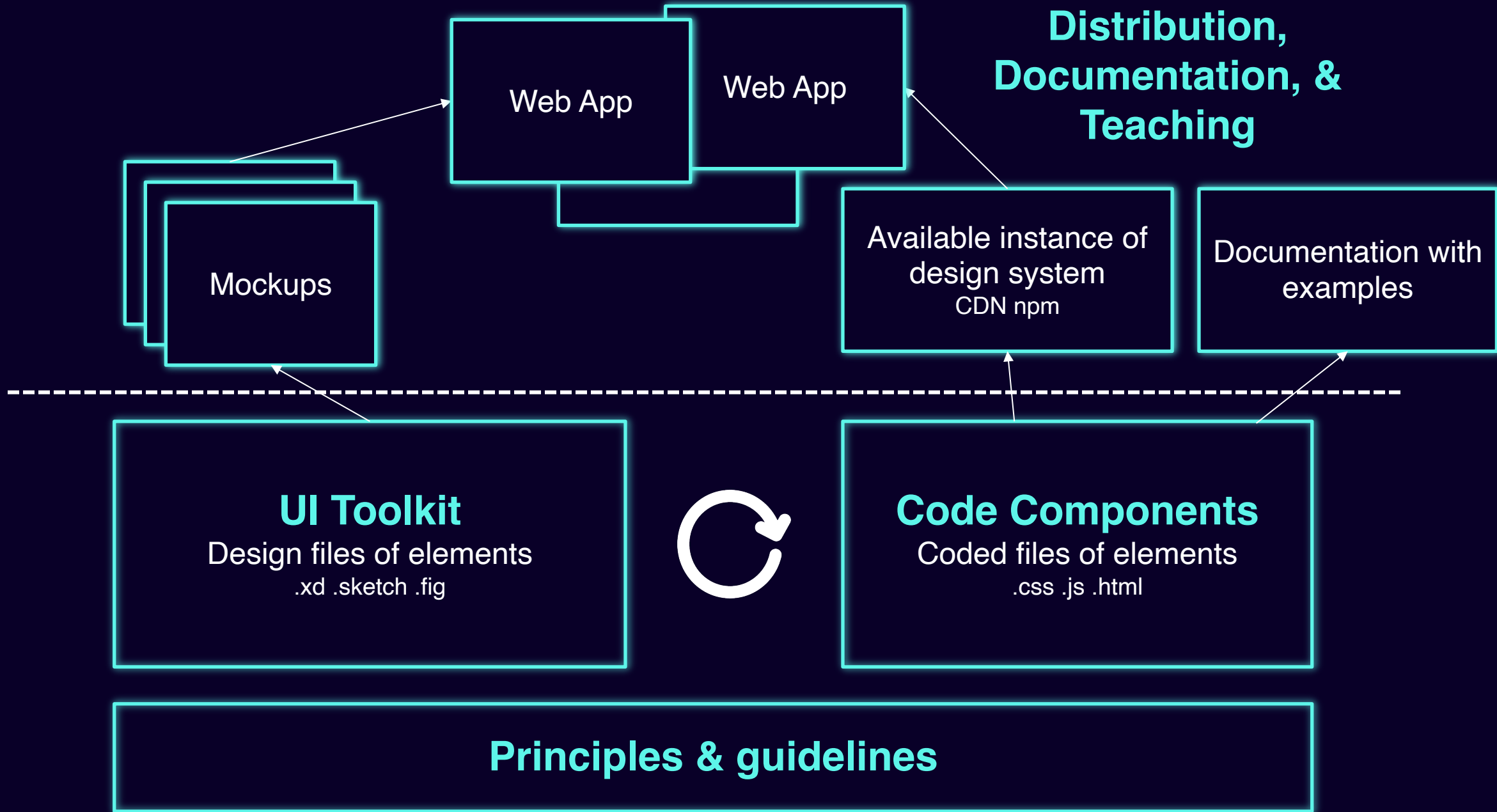
UI Toolkit



Coded Components



Distribution, Documentation,
& Teaching



A seed was planted for an Ethos design system



Adopting a **design system mindset** will help scale the impact of your frontend work while empowering and unblocking every developer.

Gatekeeper to gardener mindset

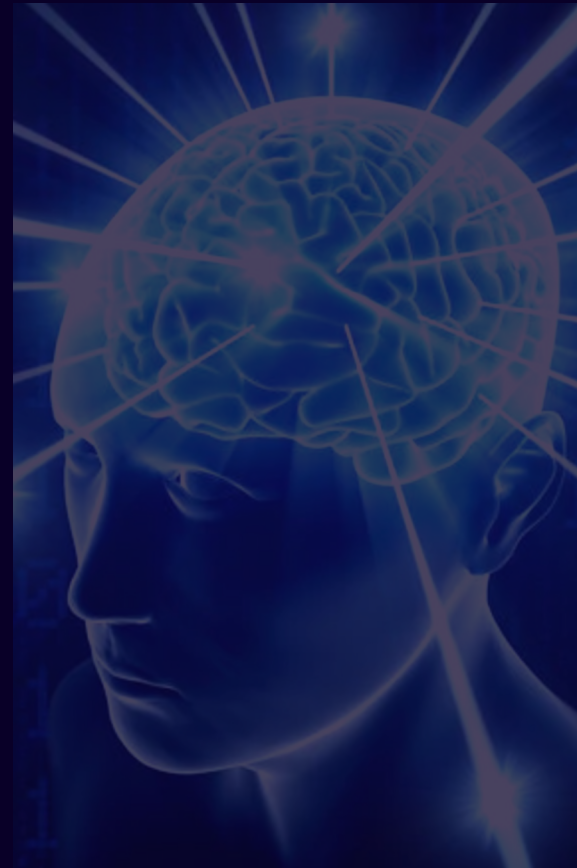
Let people into the garden.



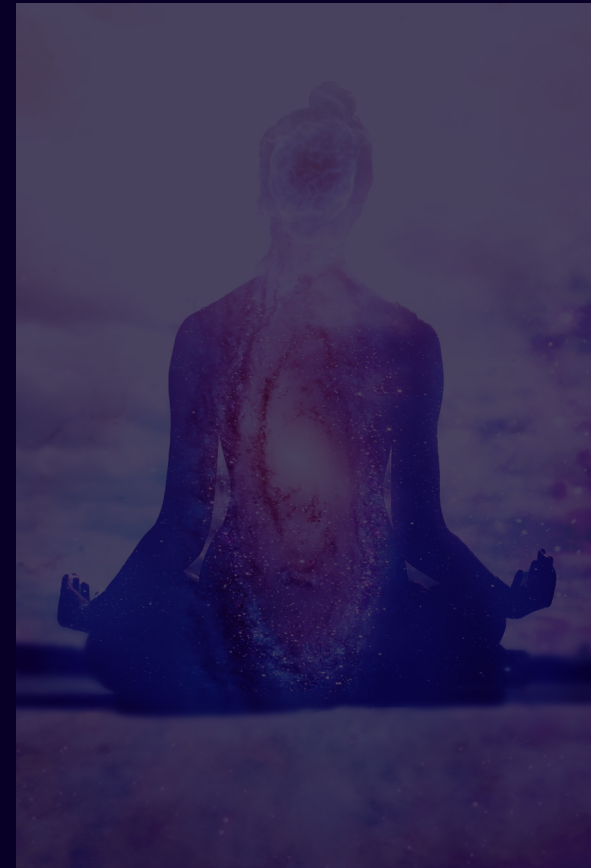
Give people the tools to do what they want.



Think beyond your own plot of land.



Remove the walls.



Gatekeeper to gardener mindset

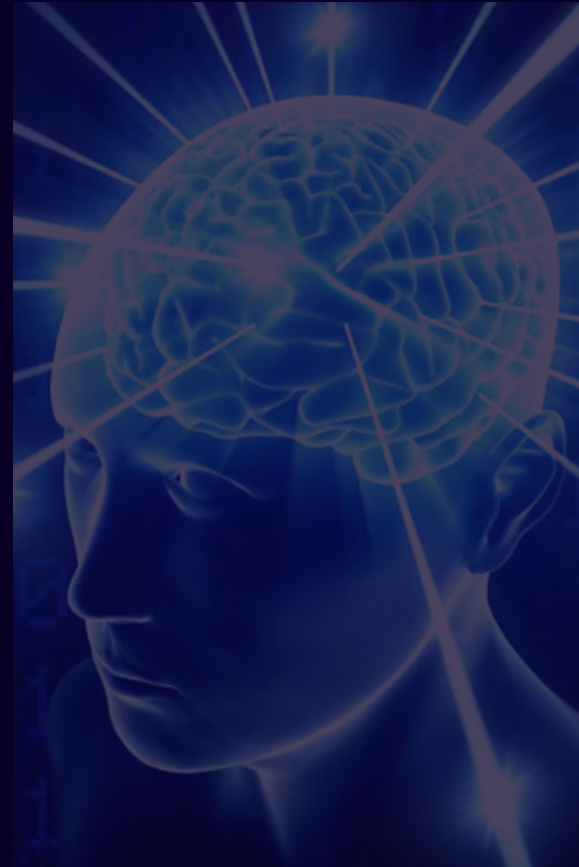
Let people into the garden.



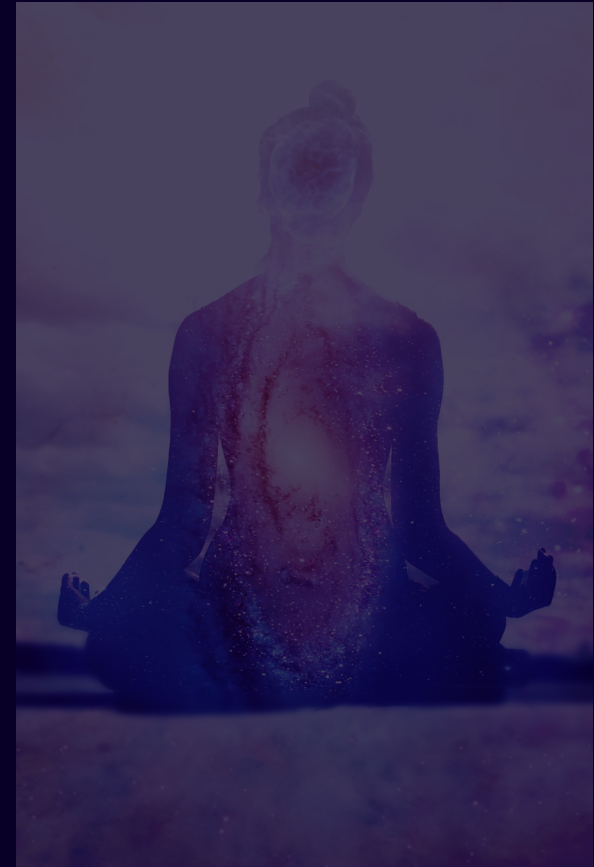
Give people the tools to do what they want.



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Remove the walls.



A list of benefits if you'd like to convince someone

1. **Scale** the impact of frontend work
2. Only solve problems once – **don't duplicate** work
3. Create **consistent** user experiences
4. Make UI development **quicker and easier**
5. **Democratize** UI design and development

A list of benefits if you'd like to convince someone

1. **Scale** the impact of frontend work
2. Only solve problems once – **don't duplicate** work
3. Create **consistent** user experiences
4. Make UI development **quicker and easier**
5. **Democratize** UI design and development

Caveat: Is it the right time?

Introducing ...



Stardust

Take an iterative approach

- You can start today
- You can start on your own
- Start taking small steps now
- Plan to iterate

Gatekeeper to gardener mindset

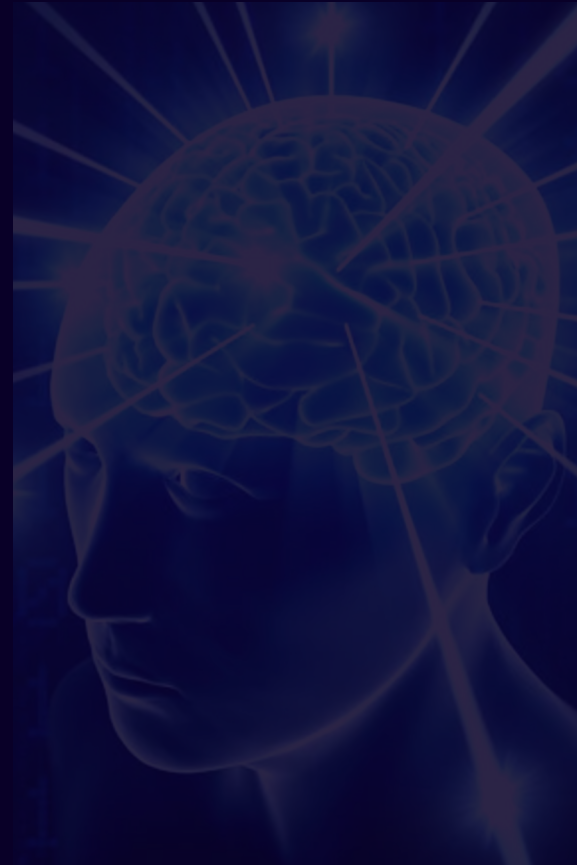
Let people into the garden.



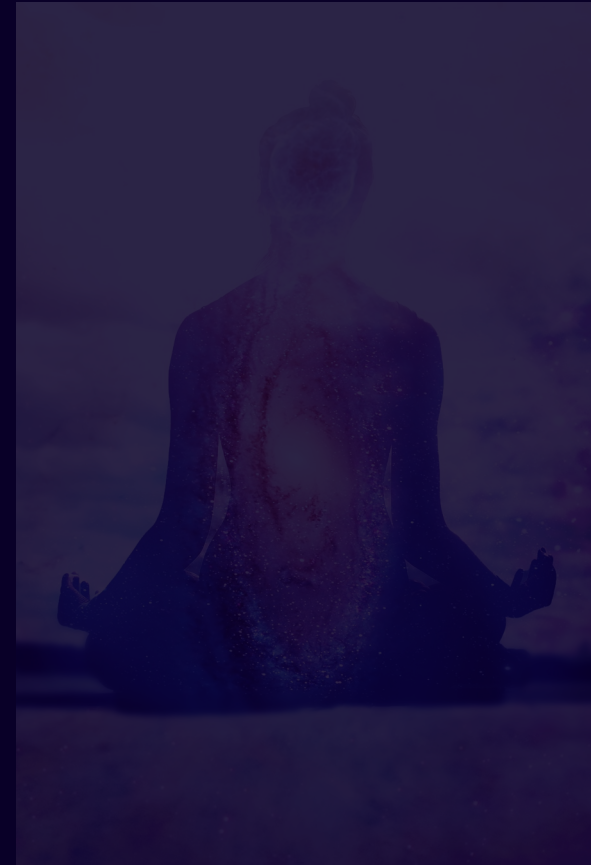
Give people the tools to do what they want.



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Principles & Guidelines



UI Toolkit



Coded Components



Distribution, Documentation,
& Teaching

Make key decisions at the beginning

- What matters? What doesn't?
- Methodologies like BEM
- How many components to start with
- Flexible vs opinionated
- Tools and languages to use

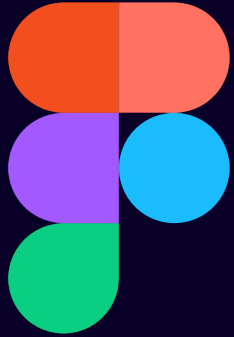
Choose the parts of your system

Design tool
for the UI toolkit

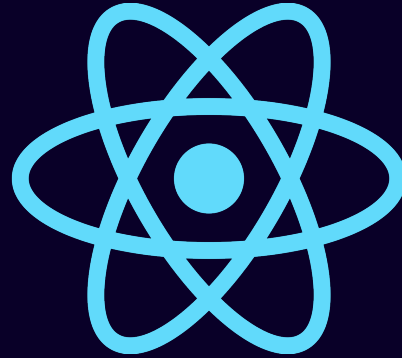
Primary language
for coded components

Documentation tool
to showcase components

The standard I recommend now



Figma



React



Storybook



COMPONENTS



- ▶ ActionList
- ▶ ActionMenu
- AvatarStack
- ▶ AvatarToken
- ▶ Button
 - Default Button
 - Primary Button**
 - Danger Button
 - Invisible Button
 - Outline Button
 - Icon Before Button
 - Icon Button
 - Watch Counter Button
 - Watch Icon Button
 - Caret Button
 - Block Button
 - Disabled Button
 - Link Button

Primary

Controls (2)

Actions

Story

Interactions

Accessibility

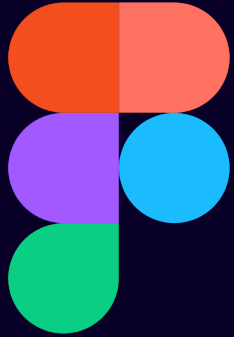
Performance



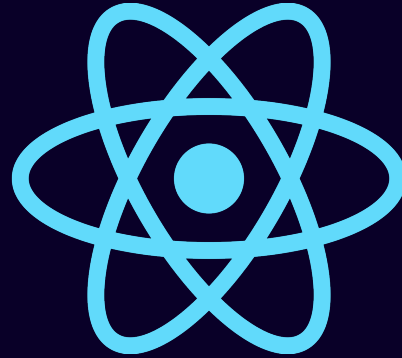
```
1 (args: ButtonProps) => {
2   return (
3     <Button {...args} variant="primary">
4       Primary
5     </Button>
6   )
7 }
```



The standard I recommend now



Figma



React



Storybook

What we went with at the time



Sketch



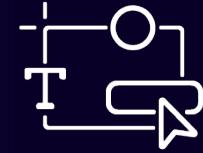
CSS



**Custom
PHP**



Principles & Guidelines



UI Toolkit



Coded Components



Distribution, Documentation,
& Teaching

Audit the existing code & design

Moonbeam | adobe-platform/ethos-homepage | Services Admin Documentation Stats Pulls History Currently Deployed | Create a Trouble Ticket | mabell

Deploy to adobe-platform/ethos-homepage?

Join the deploy queue | Skip the queue

Deploy Branch | BUILD | IMAGE SCAN | STAGE | FARGATE-DEV | PRODUCTION | FARGATE-PROD

Recent Builds

Herm Wong's session ended in a successful merge! **SUCCESS** 4 days ago

Deploy #899860: Ethos 40646 cgv kibana links

FARGATE-PROD

deploy-Production-us-west-2-web #6942334

FARGATE-DEV

deploy-Dev-us-west-2-web #6942334

IMAGE SCAN

image-scan #6942334

Deploy Queue

No one is in the queue

Moonbeam | moonbeam-test/moonbeam-4-show | Services Admin Documentation Stats Pulls History Currently Deployed | Create a Trouble Ticket | mabell

Successfully added to Build Queue

You are in the queue for moonbeam-test/moonbeam-4-show

Deploy Branch | BUILD | IMAGE SCAN | DEV | STAGE | PRODUCTION

Recent Builds

Nina Berg left control and the session was rolled back. **ROLLBACK**

Deploy #14423: Update my-new-file

build-makefile #60569

Nina Berg left control and the session was rolled back. **ROLLBACK**

Deploy #14269: Update my-new-file

Nina Berg did an emergency rollback. **EMERGENCY**

Deploy #13069: There are no pull requests in this deploy.

Deploy Queue

1. Nina Berg is not currently building. **IN CONTROL** 9 months

2. Maryann Bell Leave **NEXT UP** a few seconds

Join again | Jump

Moonbeam | moonbeam-test/moonbeam-4-show | Services Admin Documentation Stats Pulls History Currently Deployed | Create a Trouble Ticket | mabell

Successfully added to Build Queue

You are in the queue for moonbeam-test/moonbeam-4-show

Deploy Branch | BUILD | IMAGE SCAN | DEV | STAGE | PRODUCTION

Recent Builds

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Deploy #14269: Update my-new-file

Nina Berg did an emergency rollback. **EMERGENCY**

Deploy #13069: There are no pull requests in this deploy.

Are you sure you want to cancel this user's deploy?

This may take some time.

Cancel | **OK**

moonbeam-4-show | Services Admin Documentation Stats Pulls History Currently Deployed | Create a Trouble Ticket | mabell

You are in control of moonbeam-test/moonbeam-4-show

Current pulls below | Leave Control

Autoplay

MERGEABLE	TESTS	APPROVALS	Info	Deploy
✓	✓	⊕	Info	Deploy
✓	✓	⊕	Info	Deploy
✓	⊕	⊕	Info	Deploy
✓	⊕	⊕	Info	Deploy

Moonbeam | moonbeam-test/moonbeam-4-show | Services Admin Documentation Stats Pulls History Currently Deployed | Create a Trouble Ticket | mabell

You are in control of moonbeam-test/moonbeam-4-show

Select pull requests | Leave Control

Autoplay

Recent Builds

Nina Berg left control and the session was rolled back. **ROLLBACK**

Deploy #14423: Update my-new-file

build-makefile #60569

Nina Berg left control and the session was rolled back. **ROLLBACK**

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Deploy Queue

1. Maryann Bell is not currently building. **IN CONTROL** a few seconds

Join again | Jump

Moonbeam | moonbeam-test/moonbeam-4-show | Services Admin Documentation Stats Pulls History Currently Deployed | Create a Trouble Ticket | mabell

You are in control of moonbeam-test/moonbeam-4-show

Current deploy below | **Leave Control**

Autoplay

Deploy #15779 will merge PRs into master branch upon Mark as Good.

Thoughts on PRs (#8) Open GitHub commit 61661846

Created deploy branch.

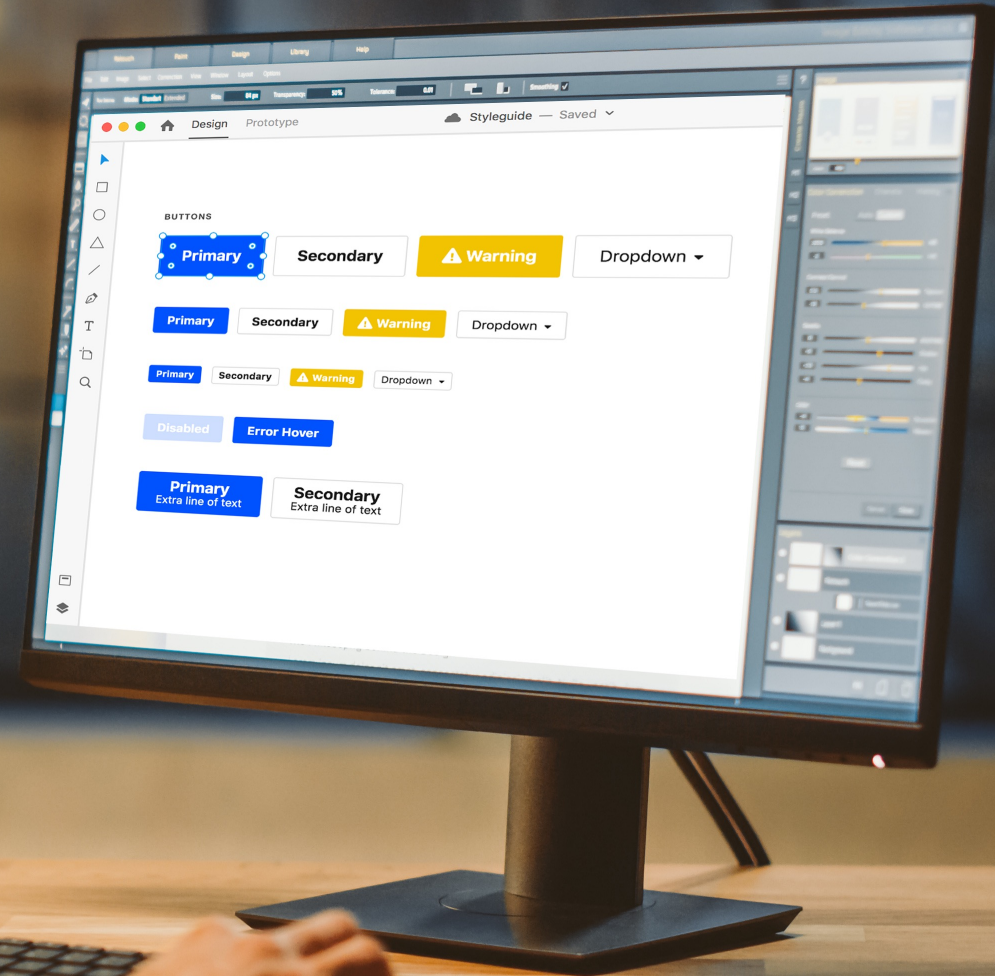
NEXT Environment: BUILD

Projects to build on BUILD Deselect all

build-makefile

Restart entire process | Rollback BUILD | **Proceed to BUILD**

Create the UI toolkit using your design tool





Principles & Guidelines



UI Toolkit



Coded Components



Distribution, Documentation,
& Teaching

Create the coded components

Enterprise Search or jump to... Pull requests Issues Explore

adobe-platform / stardust Public Watch 4 Fork 6

Code Issues Pull requests 2 Projects Wiki Security Insights Settings

master stardust / app / assets / stylesheets / components / Go to file Add file

achough Changed error color 654658f on Oct 7, 2020

..	
_avatars.scss	adding avatars to stardust
_base.scss	Edits for PR feedback
_blurbs.scss	Re-adding some missing Stardust styles
_buttons.scss	adding spacing b/w buttons
_checks.scss	Re-adding some missing Stardust styles
_forms.scss	Edits for PR feedback
_grid.scss	Edits for PR feedback
_highlights.scss	Edits for PR feedback
_icons.scss	Re-adding some missing Stardust styles
_links.scss	Re-adding some missing Stardust styles
_list-groups.scss	Added table partial styling & example

326 lines (255 sloc) | 4.97 KB

```
1 //
2 // Buttons
3 //
4
5 $btn-padding-y: 8px;
6 $btn-padding-x: $btn-padding-y * 1.8;
7
8 .rf-btn,
9 .rf-btn[type="button"],
10 %rf-btn {
11   -webkit-appearance: initial;
12   border: 1px solid transparent;
13   border-radius: $border-radius;
14   cursor: pointer;
15   display: inline-block;
16   font-weight: bold;
17   height: auto;
18   line-height: 1.1em;
19   padding: $btn-padding-y $btn-padding-x;
20   position: relative;
21   text-align: center;
22   text-decoration: none !important;
23   touch-action: manipulation;
24   vertical-align: middle;
25   white-space: nowrap;
26   user-select: none;
27
28   @include hocus {
29     outline: none;
30     text-decoration: none !important;
31   }
32 }
```

As you expand coverage, track with CSS namespace

```
[class^="rf-"],  
[class*=" rf-"] {  
  outline: 5px solid #ff00ff;  
}
```

The screenshot shows the Moonbeam deployment dashboard. At the top, there's a navigation bar with 'Moonbeam', a dropdown menu for 'moonbeam/moonbeam', and links for 'Admin', 'Documentation', 'Stats', 'Currently Deployed', 'Pulls', 'History', and a 'Logout' button. The main heading is 'Deploy to moonbeam/moonbeam?'. Below this are two buttons: 'Join the deploy queue' (blue) and 'Skip the queue' (white with pink border). A progress bar shows the deployment stages: Deploy Branch, CONTAINER-BUILD, IMAGE SCAN (with a warning icon), DEV-ENVS, INTEGRATION TEST, SELF-DEPLOY, and PROD-ENVS. Below the progress bar are two sections: 'Recent Builds' and 'Deploy Queue'. 'Recent Builds' shows a list of deployments, including 'Deploy #7153' (ONGOING) by 'berg' and 'Deploy #7152' (SUCCESS) by 'Kevin Ran'. 'Deploy Queue' shows a list of pending deployments, including 'Deploy #7154' (IN CONTROL) by 'Devyn Krevat' and 'Deploy #7153' (SECONDARY) by 'berg'. The 'Deploy Queue' section also includes links to 'Remove From Control' and 'Open commit in Github'.

Gatekeeper to gardener mindset

Let people into the garden.



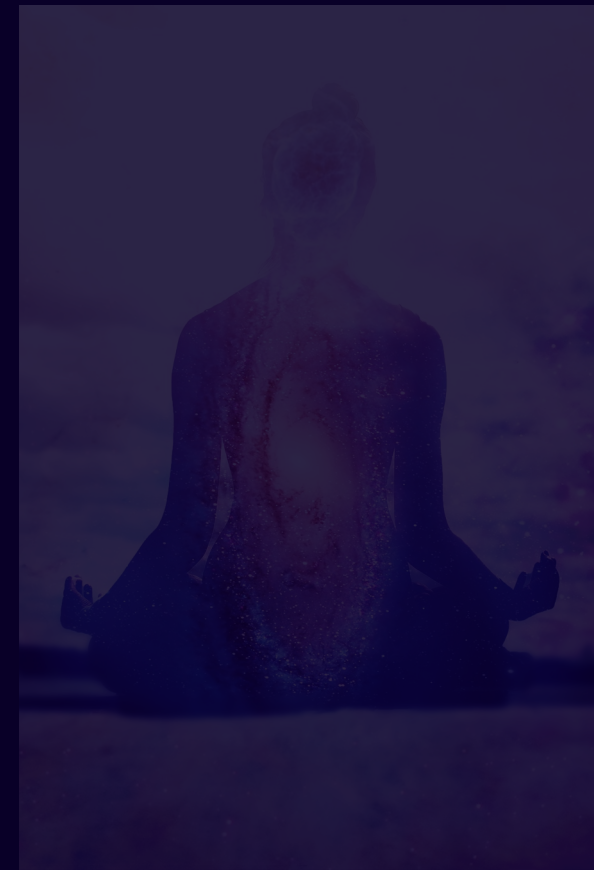
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Think beyond your own plot of land.



Remove the walls.





Principles & Guidelines



UI Toolkit




Coded Components



Distribution, Documentation,
& Teaching

Document & Distribute



The image shows a woman in profile, looking at a large computer monitor. The monitor displays a web component library for buttons, titled "Stardust". The page has a sidebar on the left with a navigation menu. The main content area is titled "Buttons" and is divided into several sections: "Button Types", "Button Sizes", and "Types + sizes". Each section shows visual examples of the buttons and the corresponding HTML code snippets. The "Button Types" section shows buttons with classes like "rf-btn--primary", "rf-btn--secondary", "rf-btn--link", "rf-btn--dropdown", "rf-btn--warning", and "rf-btn--error". The "Button Sizes" section shows buttons with classes "rf-btn--small" and "rf-btn--large". The "Types + sizes" section shows a grid of buttons combining different types and sizes. At the bottom, there is a section for "Type + size usage" with a code snippet: `<a href="#" class="rf-btn rf-btn--<type> rf-btn--<size>"> Button `.

Stardust
Stardust Github Repository

- Avatars
- Blurbs
- Buttons
- Checkboxes
- Forms
- Grid
- Icons
- Links
- List Groups
- Logs
- Messaging
- Modals
- Notes
- Notices
- Panels
- Pills
- Tables
- Tooltips

Buttons

Button Types

Primary Secondary Link Dropdown Warning Error

```
<a href="#" class="rf-btn rf-btn--primary">Primary</a>  
<a href="#" class="rf-btn rf-btn--secondary">Secondary</a>  
<a href="#" class="rf-btn rf-btn--link">Link</a>  
<a href="#" class="rf-btn rf-btn--dropdown">Dropdown</a>  
<a href="#" class="rf-btn rf-btn--warning">Warning</a>  
<a href="#" class="rf-btn rf-btn--error">Error</a>
```

Button Sizes

Button Button

```
<a href="#" class="rf-btn rf-btn--small">Button</a>  
<a href="#" class="rf-btn rf-btn--large">Button</a>
```

Types + sizes

Primary Warning Secondary

Link Dropdown Error

Primary Secondary Warning Link Dropdown Error

Type + size usage:


```
<a href="#" class="rf-btn rf-btn--<type> rf-btn--<size>"> Button </a>
```

adobe-platform / stardust Public

Watch 4 Fork 6 Star 2

Code Issues Pull requests 2 Projects Wiki Security Insights Settings

master 19 branches 0 tags Go to file Add file Code

 moonbeam Merged 1 PR(s): ...	2925183 on Oct 12, 2020	🕒 138 commits
📁 .glider	Revert "Glider : save user inputs for orca-onbo...	4 years ago
📁 app	Add link for reference	2 years ago
📁 lib	Bump to the right version	4 years ago
📄 .gitignore	Revert "Glider generated service code"	4 years ago
📄 Dockerfile	Add 1.0.0 CDN	3 years ago
📄 Gemfile	Revert "Glider generated service code"	4 years ago
📄 Makefile	First PR - Updating README	4 years ago
📄 README.md	Change stardust service links from http to https	3 years ago
📄 Rakefile	Initial commit	5 years ago
📄 docker-compose.yml	Adding docker-compose file for onbaording	4 years ago
📄 ethosstyles.gemspec	use sassc 2.0	4 years ago
📄 new_http_headers.conf	Add 1.0.0 CDN	3 years ago
📄 service_spec.yml	Merge pull request #31 from krevat/dns-good	3 years ago

About ⚙️

Ethos's design system

📖 [Readme](#)

☆ 2 stars

👁 4 watching

🍴 6 forks

Releases

No releases published
[Create a new release](#)

Contributors 7



Languages



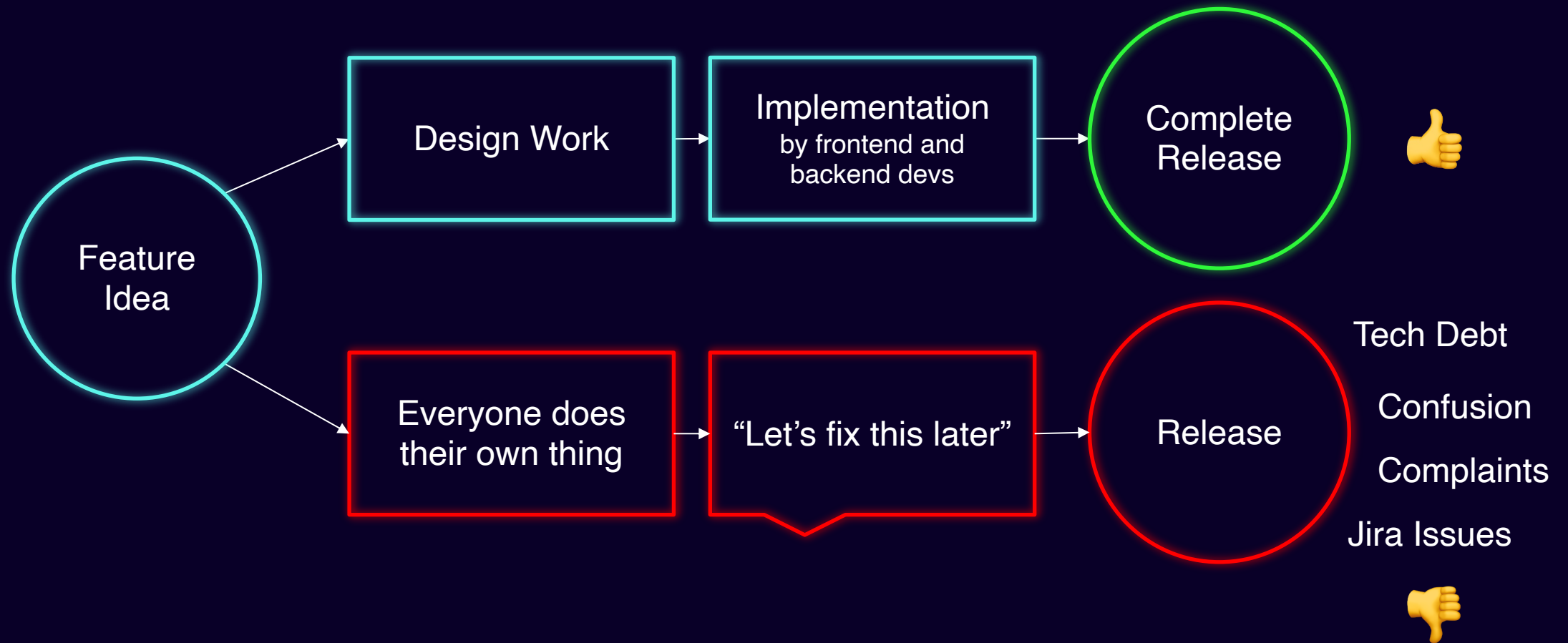
- CSS 87.6%
- Hack 4.7%
- Ruby 0.2%
- PHP 6.7%
- JavaScript 0.6%
- Dockerfile 0.1%

Use the community playbook to expand knowledge

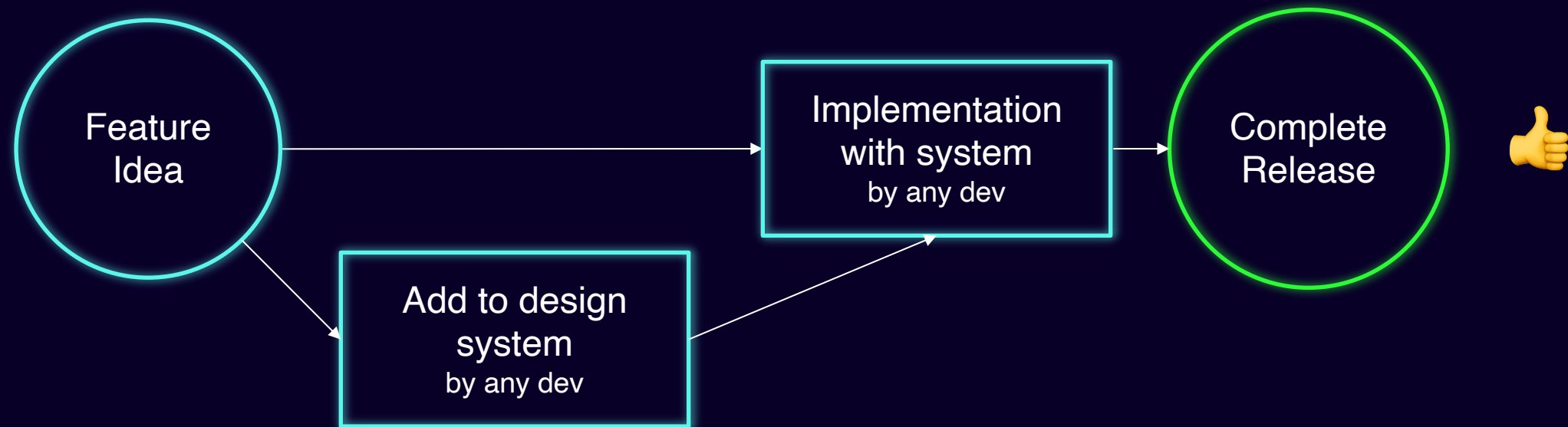
- Slack channel
- In-person training sessions / bootcamps
- Office hours
- Community sessions / brown bags
- 1:1 screenshares
- Don't forget to record!

What were the results?

Old development lifecycle



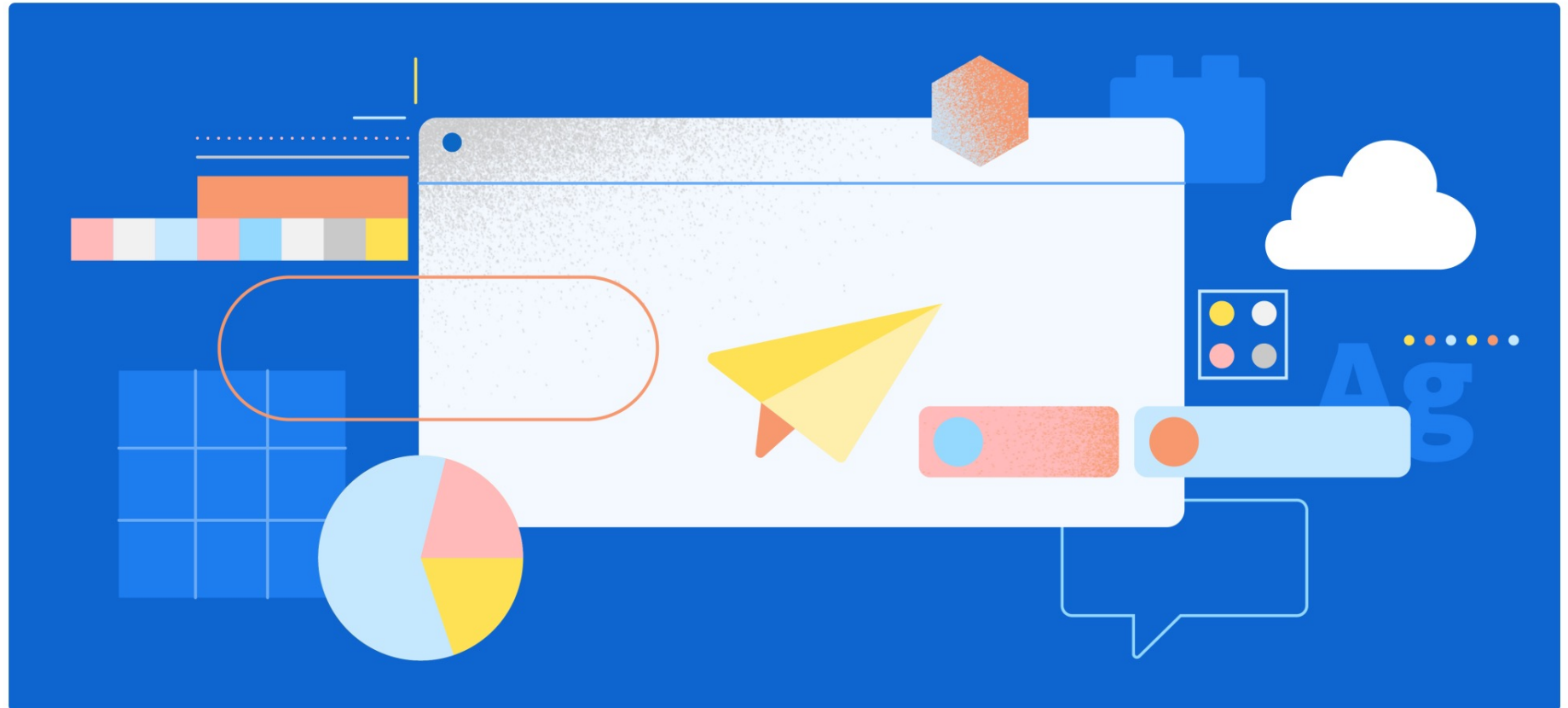
New feature lifecycle



Just when things were turning
around...

Spectrum, Adobe's design system

Spectrum provides components and tools to help product teams work more efficiently, and to make Adobe's applications more cohesive.



Gatekeeper to gardener mindset

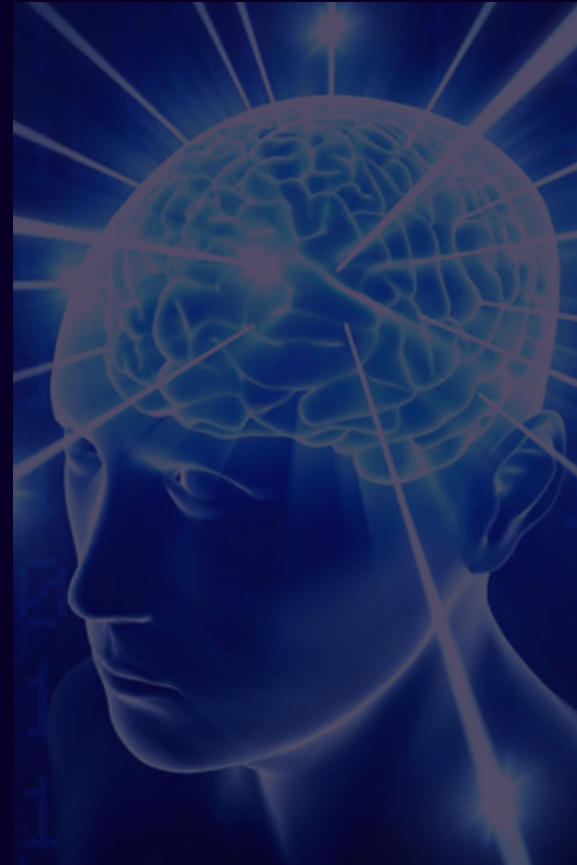
Let people into the garden.



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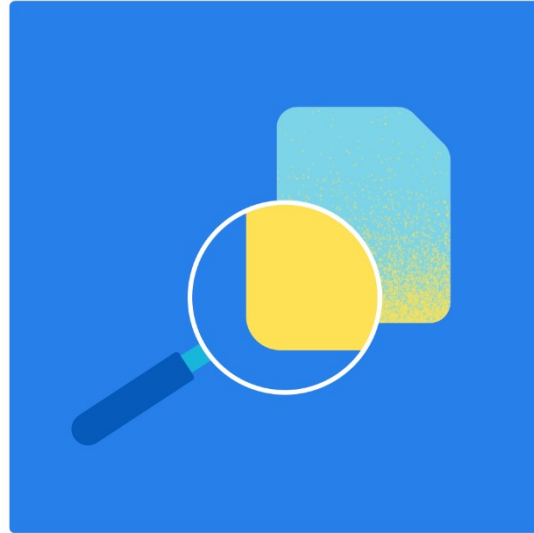
Think beyond your own plot of land.



Remove the walls.

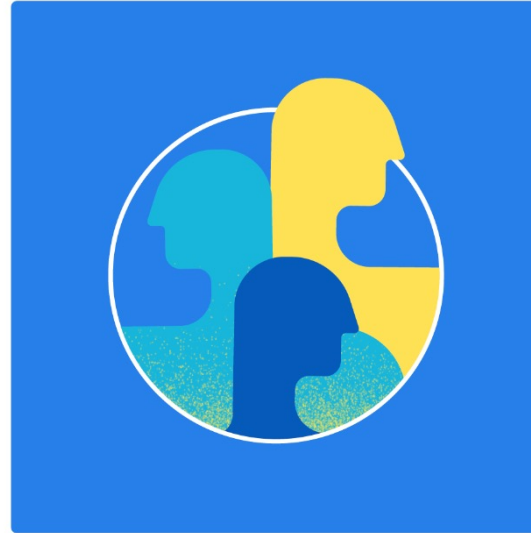


Principles



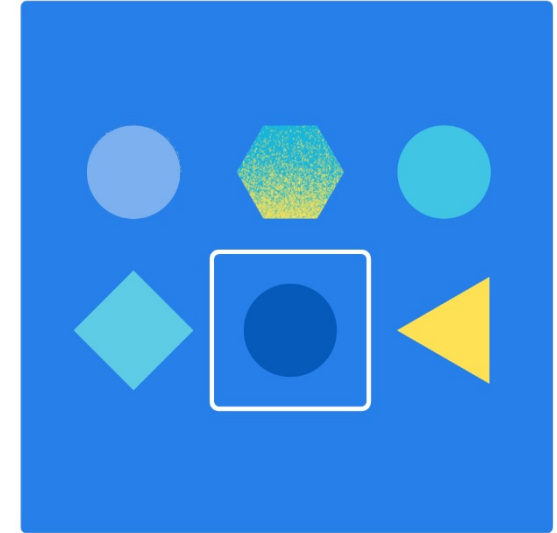
Rational

Spectrum is based on real-world situations. Every component, pattern, and principle is informed by research and thoughtful testing.



Human

Spectrum places customer needs first. It's deeply committed to a high standard of accessibility, honesty, and respect for user attention.



Focused

Spectrum strives to deliver what's needed, when it's needed. No unnecessary decoration or irrelevant content.



Principles & Guidelines

All Items

CANVAS

Group 1297

Button - Spectrum - light theme - UWP desktop (Windows) / macOS / web desktop

	Default	Hover	Down / touch	Keyboard focus	Disabled
ACCENT FILL	Action	Action	Action	Action	Action
ACCENT OUTLINE	Action	Action	Action	Action	Action
ACCENT FILL (ICON)	Share	Share	Share	Share	Share
ACCENT OUTLINE (ICON)	Share	Share	Share	Share	Share
NEGATIVE FILL	Action	Action	Action	Action	Action
NEGATIVE OUTLINE	Action	Action	Action	Action	Action
NEGATIVE FILL (ICON)	Share	Share	Share	Share	Share
PRIMARY OUTLINE	Action	Action	Action	Action	Action

Repeat Grid

COMPONENT

TRANSFORM

W 0 X 0

H 0 Y 0

LAYOUT

Responsive Resize

APPEARANCE

0%



main react-spectrum / packages / @react-spectrum / button / src / Button.tsx / <> Jump to

Go to file



devongovett Button and ActionButton design updates (#3650) ✓

Latest commit d264e8e 2 days ago History

9 contributors



106 lines (101 sloc) | 3.7 KB

Raw

Blame



```

1  /*
2   * Copyright 2020 Adobe. All rights reserved.
3   * This file is licensed to you under the Apache License, Version 2.0 (the "License");
4   * you may not use this file except in compliance with the License. You may obtain a copy
5   * of the License at http://www.apache.org/licenses/LICENSE-2.0
6   *
7   * Unless required by applicable law or agreed to in writing, software distributed under
8   * the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR REPRESENTATIONS
9   * OF ANY KIND, either express or implied. See the License for the specific language
10  * governing permissions and limitations under the License.
11  */

```

```

13  import {
14    classNames,
15    SlotProvider,
16    useFocusableRef,
17    useHasChild,
18    useSlotProps,
19    useStyleProps
20  } from '@react-spectrum/utilities';

```



Coded Components



INTRODUCTION

Getting Started

Versioning

CONCEPTS

Layout

Styling

Testing

Theming

Server Side Rendering

Drag and Drop



APPLICATION

Provider

LAYOUT




Flex

Grid

Button

Buttons allow users to perform an action or to navigate to another page. They have multiple styles for various needs, and are ideal for calling attention to where a user needs to do something in order to move forward in a flow.

```
install    yarn add @adobe/react-spectrum
added     3.0.0
usage     import {Button} from '@adobe/react-spectrum'
```

 View guidelines Spectrum	 View repository GitHub	 View package NPM
---	---	---

Contents

Example

Content

Accessibility

Internationalization

Events

Props

Visual options

Call to action

Primary

Quiet primary

Secondary

Quiet secondary

Example

```
<Button variant="cta">Save</Button>
```



Distribution,
Documentation & Teaching

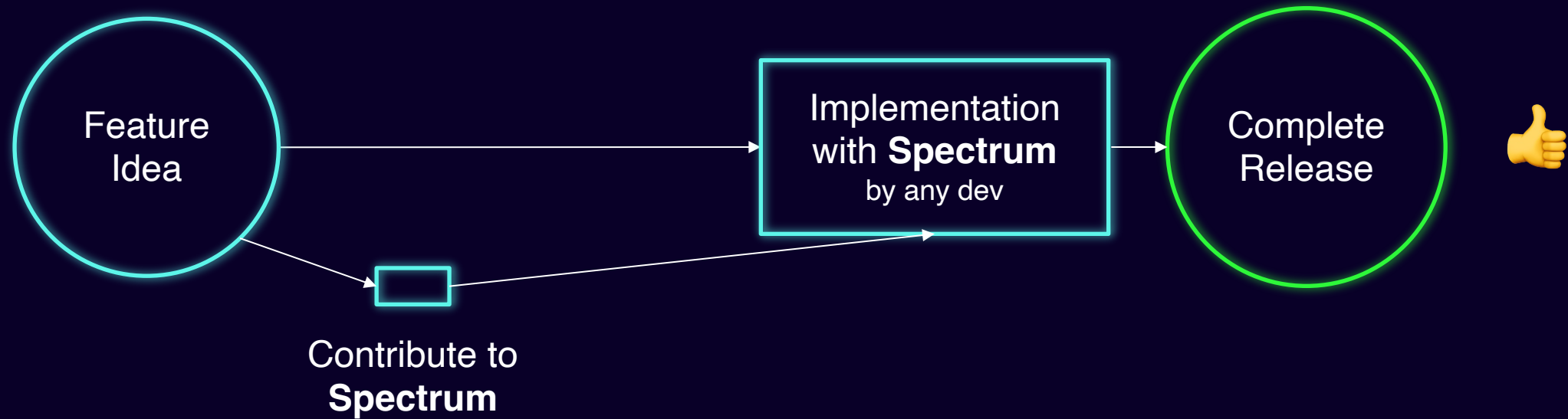
Icon only

We decided to shift to using Spectrum

- Stop duplicating work
- Become contributors to a wider system
- Expand past Adobe through OSS

What's it like now?

Team is enabled with easiest workflow yet



State of the product

The screenshot shows the 'Ethos Home' dashboard for the 'adobe-platform/ethos-homepage' service. The service is currently locked, as indicated by a padlock icon and the text 'This service is currently locked.' with an 'Unlock service' button. Below this, there are two main sections: 'Service details' and 'Environment variables & secrets'. The 'Delete this service' section is highlighted with a red border and contains a warning: 'Services cannot be deleted when locked. Unlock the service first and try deleting your service again.' with a 'Delete service' button.

The screenshot shows the Ethos homepage with a promotional banner that reads: "Launch your code on Ethos." Below the banner, it says: "Get to production in minutes, not months. Ethos delivers self-service provisioning, pipelines, tooling, compliance, and security controls 'as-a-service.'" There is also an 'Onboard here' button.

Cluster Availability

Providers: AWS, Azure

Filters	PROVI...	CLUSTER	ENV	REGION	OWNER	TEST	OCT 30	OCT 29	OCT 28	OCT 27	OCT 26	OCT 25	OCT 24
Providers	aws	Ethos01	PROD	JPN3	CT	Canary	✓	✓	✓	✓	✓	✓	✓
Clusters	aws	Ethos01	PROD	IRL1	CT	Canary	✓	✓	✓	✓	✓	✓	✓
Environments	aws	Ethos01	PROD	OR2	CT	Canary	✓	✓	✓	✓	✓	✓	✓
Regions	aws	Ethos02	PROD	IRL1	CT	Canary	✓	✓	✓	✓	✓	✓	✓
Owners	aws	Ethos02	PROD	OR2	CT	Canary	✓	✓	✓	✓	✓	✓	✓
Measurement tests	aws	Ethos02	PROD	VA6	CT	Canary	✓	✓	✓	✓	✓	✓	✓
	aws	Ethos03	PROD	VA6	CT	Canary	✓	✓	✓	✓	✓	✓	✓
	aws	Ethos03	PROD	IRL1	CT	Canary	✓	✓	✓	✓	✓	✓	✓
	Azure	Ethos05	PROD	VA7	CT	Canary MSI	✓	✓	✓	✓	✓	✓	✓
	Azure	Ethos05	PROD	VA7	CT	Canary	✓	✓	✓	✓	✓	✓	✓
	aws	Ethos06	PROD	VA6	DX	Canary	✓	✓	✓	✓	✓	✓	✓
	aws	Ethos06	PROD	IRL1	DX	Canary	✓	✓	✓	✓	✓	✓	✓

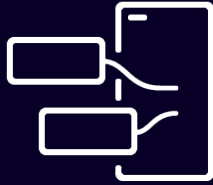
The screenshot shows the 'Namespace List | Ethos' page. It features a search bar 'Filter namespaces' and buttons for '+ Create PaaS namespace' and 'Download kubeconfig.yml'. A list of namespaces is displayed, including 'ns-personal-mabell' (marked as 'personal'), 'ns-team-experience-edge--ioni-argo-demo-deploy--1120f-38e9793d', 'ns-team-naytest--testcanary-deploy--ab8bete4--namespa-ebc2da7', 'ns-team-ethos-bootcamp-mathwani--mm-bl-0512-1-deploy--d5a32bd8', 'ns-team-mabell-ethos-tutorial--mabell-flex-test-deplo-29212137', 'ns-team-adobe-platform--ethos-argo-workflows-resource-ade3b1a1', and 'ns-team-naytest--demojune6-deploy--1a987996--namespa-...'.

We're constantly improving and re-evaluating



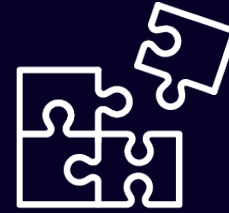
Mindsets

take time to change



Open source

design system conflicts



Knowledge gap

with frontend tech

What's next in design systems?



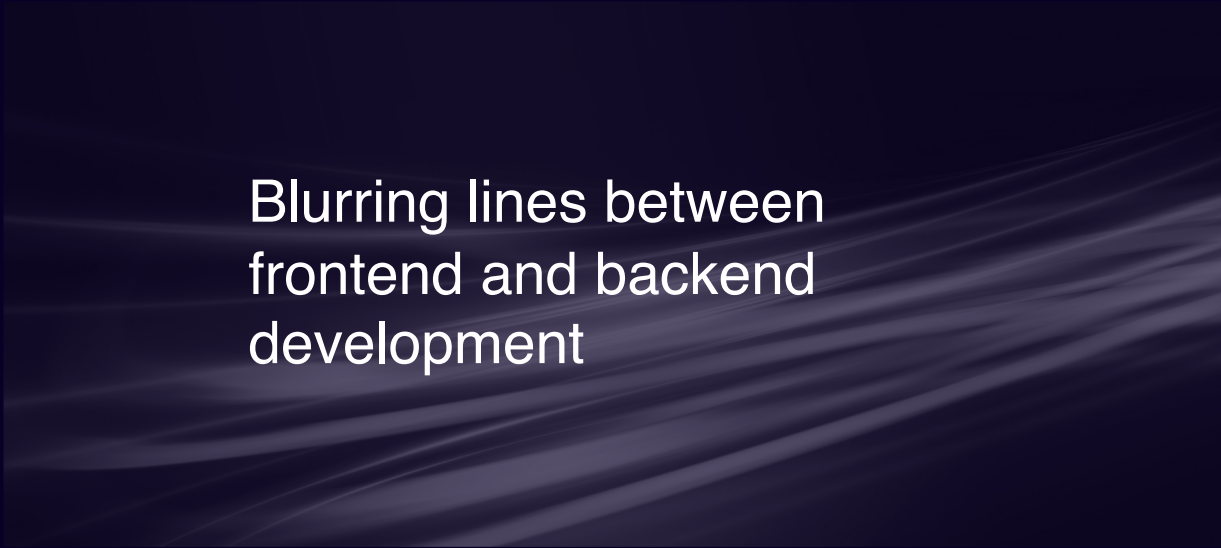
Designer & developer
tooling growing closer
together



AI-assisted design systems



Low-code design system
components



Blurring lines between
frontend and backend
development

If I had to start today...

- Build all pieces in parallel
- Use standard tooling
- Don't start from scratch

Gatekeeper to gardener mindset

Let people into the garden.



Give people the tools to do what they want.



Think beyond your own plot of land.



Remove the walls.



Letting go of control and helping people do what they want to do will make your work better and more fun.

Thank you!

Connect with me:

Find me after this talk!

Twitter: <https://twitter.com/maremarebell>

LinkedIn: <https://www.linkedin.com/in/maryannbell>



View & download
slides

Resources

- Storybook Tutorial

- <https://storybook.js.org/tutorials/design-systems-for-developers/react/en/introduction/>

- Design Systems: Step-by-Step Guide to Creating Your Own

- <https://www.uxpin.com/create-design-system-guide/>

- CSS Namespaces

- <https://csswizardry.com/2015/03/more-transparent-ui-code-with-namespaces/>

- Spectrum, Adobe's Design System

- <https://spectrum.adobe.com/>

- UX Tools Design System Survey 2020

- <https://uxtools.co/survey-2020/#design-systems>