sumup®

The tech behind a design system that scales

BrazilJS 2018

Monica Lent

Lead Frontend Engineer - SumUp

@monicalent

Where we're going today

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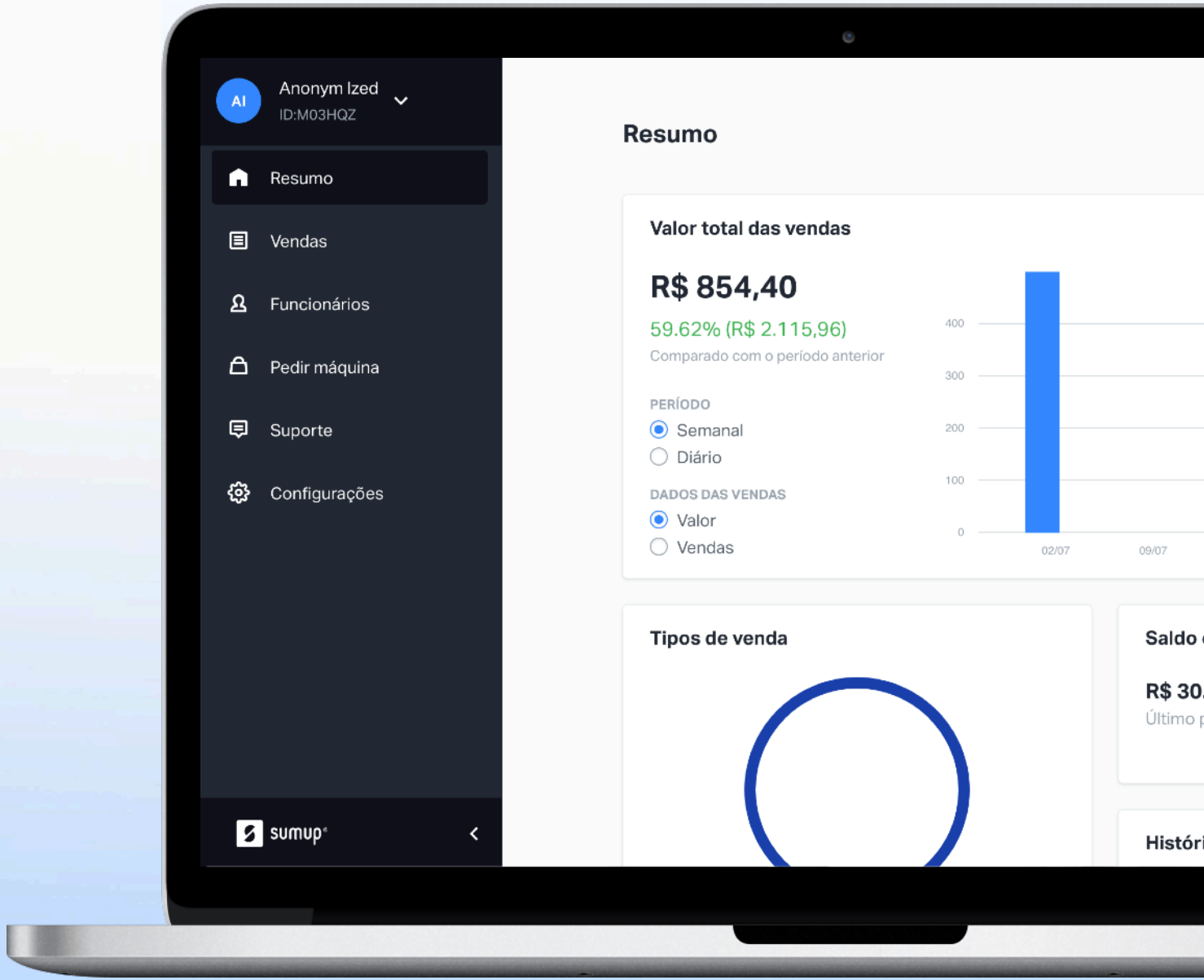
VISA
VISA CREDIT
EUR
Enter PIN
3.20
1 2 3
4 5 6
7 8 9
0

INTERNACIONAL
USAR NA FUNÇÃO CRÉDITO
sumup
5292 0500 2090 0505
VALID THRU 22/22
mastercard
SUMUP Top
sumup


AI
Anonym Ized
ID:M03HQZ
Resumo
Vendas
Funcionários
Pedir máquina
Suporte
Configurações
sumup
Resumo
Valor total das vendas
R$ 854,40
59.62% (R$ 2.115,96)
Comparado com o período anterior
PERÍODO
Semanal
Diário
DADOS DAS VENDAS
Valor
Vendas
400
300
200
100
0
02/07
09/07
Tipos de venda
Saldo
R$ 30
Últimop
Histór

sumup

Use case

Once upon a time...

F

This currency input I'm building is really tricky

Wait, what?

M

F

There are all these edge cases and...

Once upon a time

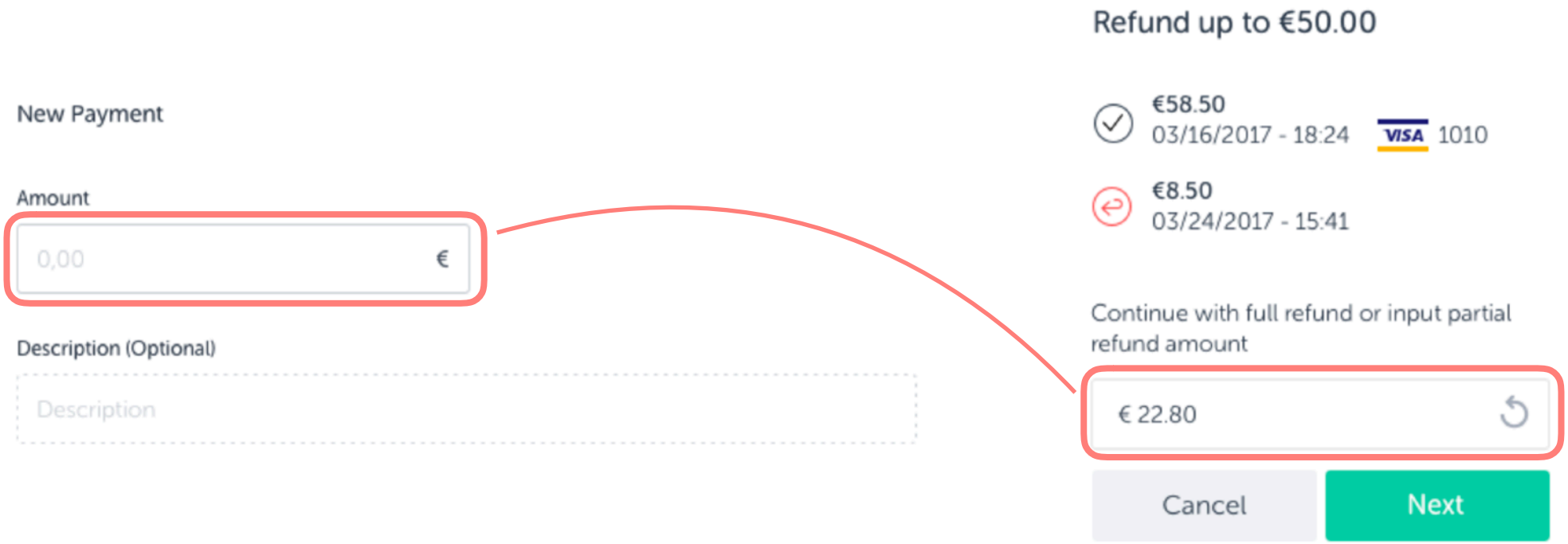
No, I mean why are you building a currency input?

I made that like six months ago.

M

F

A tale of two inputs



Now imagine

Engineering teams in three countries and timezones

Doubling in size roughly every 12 months

How can we **scale the team** and **product offering** while increasing **developer efficiency** and providing a **consistent user experience**?

We need a **system**.

A

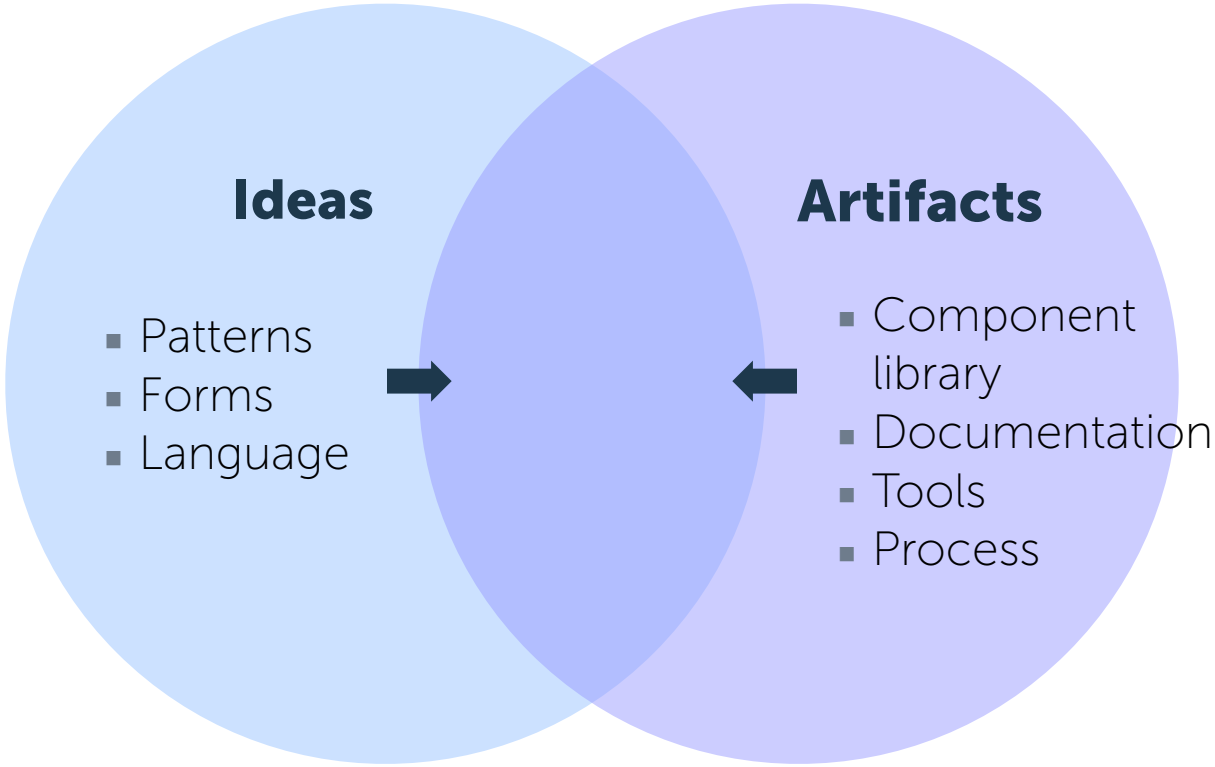
design system.

> A design system is a collection of **reusable components**, guided by **clear standards**, that can be assembled together to build **any number of applications**.

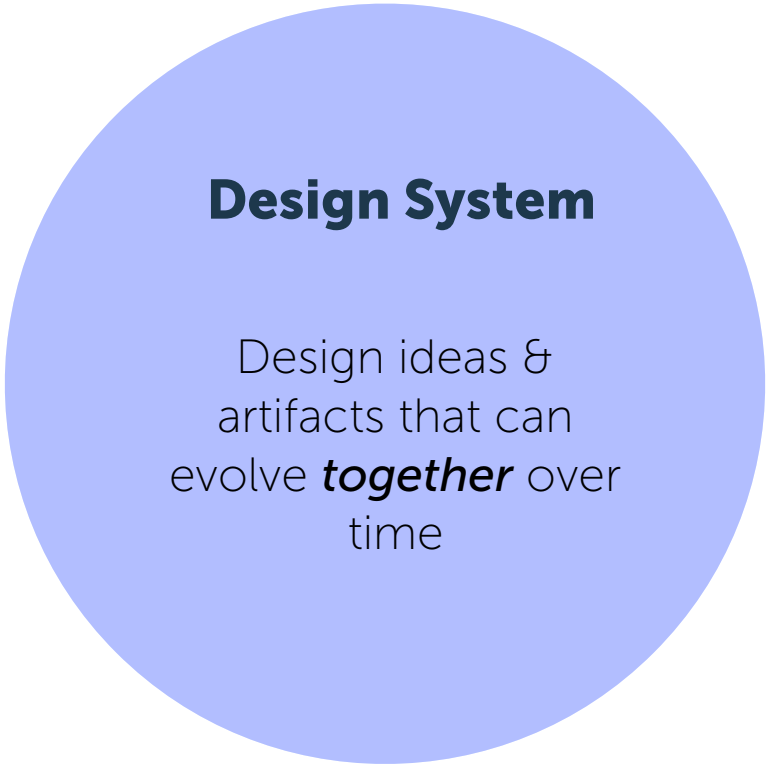
- Will Fanguy, Invision

https://www.invisionapp.com/blog/guide-to-design-systems/

Elements of a design system



Elements of a design system



How a design system helps you scale

- Component library ➡ Stop solving solved problems.
- Documentation ➡ Help people answer their own questions.
- Tools ➡ Make it easy to evolve & create a single source of truth.
- Process ➡ Allow many contributions while keeping quality high.

Our (frontend) scaling challenges

People

Growing & distributed team in three countries.

Products

Expanding product offering and diverse tech stack.

Processes

More and more teams working in parallel.

Our scaling solutions

People

Growing & distributed team in three countries:

Component library workbench & documentation

Products

Expanding product offering and diverse tech stack:

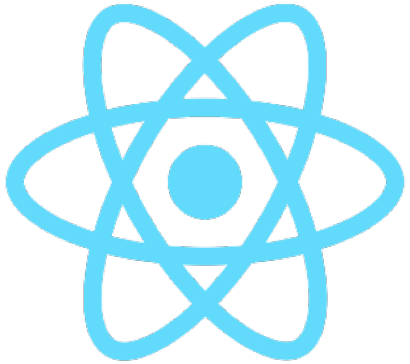
Enable theming & static CSS extraction

Processes

More and more teams working in parallel:

Automated documentation & tests for regressions

Why React?



React JS

A brief history of web development

HTML
for structure

`templates/*.html`

Javascript
for behavior

`scripts/*.js`

CSS
for design

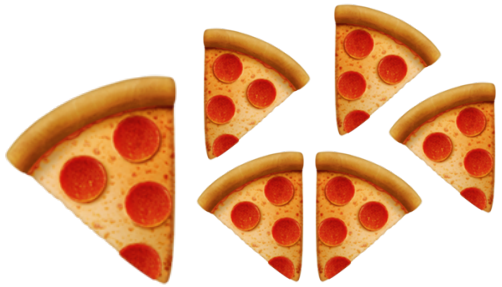
`styles/*.css`

A brief history of web development

HTML
for structure

`templates/*.html`

```
<div class="my-global-name"></div>
```



Javascript
for behavior

`scripts/*.js`

```
$('.my-global-name')
```

CSS
for design

`styles/*.css`

```
.my-global-name { color: red; }
```

A brief history of web development

COMPONENT A
structure, behavior, design

`ComponentA.js`

`<ComponentA />`

COMPONENT B
structure, behavior, design

`ComponentB.js`

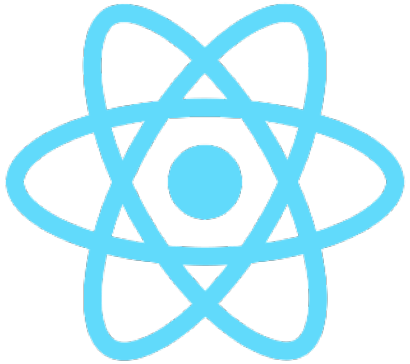
`<ComponentB />`

COMPONENT C
structure, behavior, design

`ComponentC.js`

`<ComponentC />`

Why React?



React JS

Our scaling solutions

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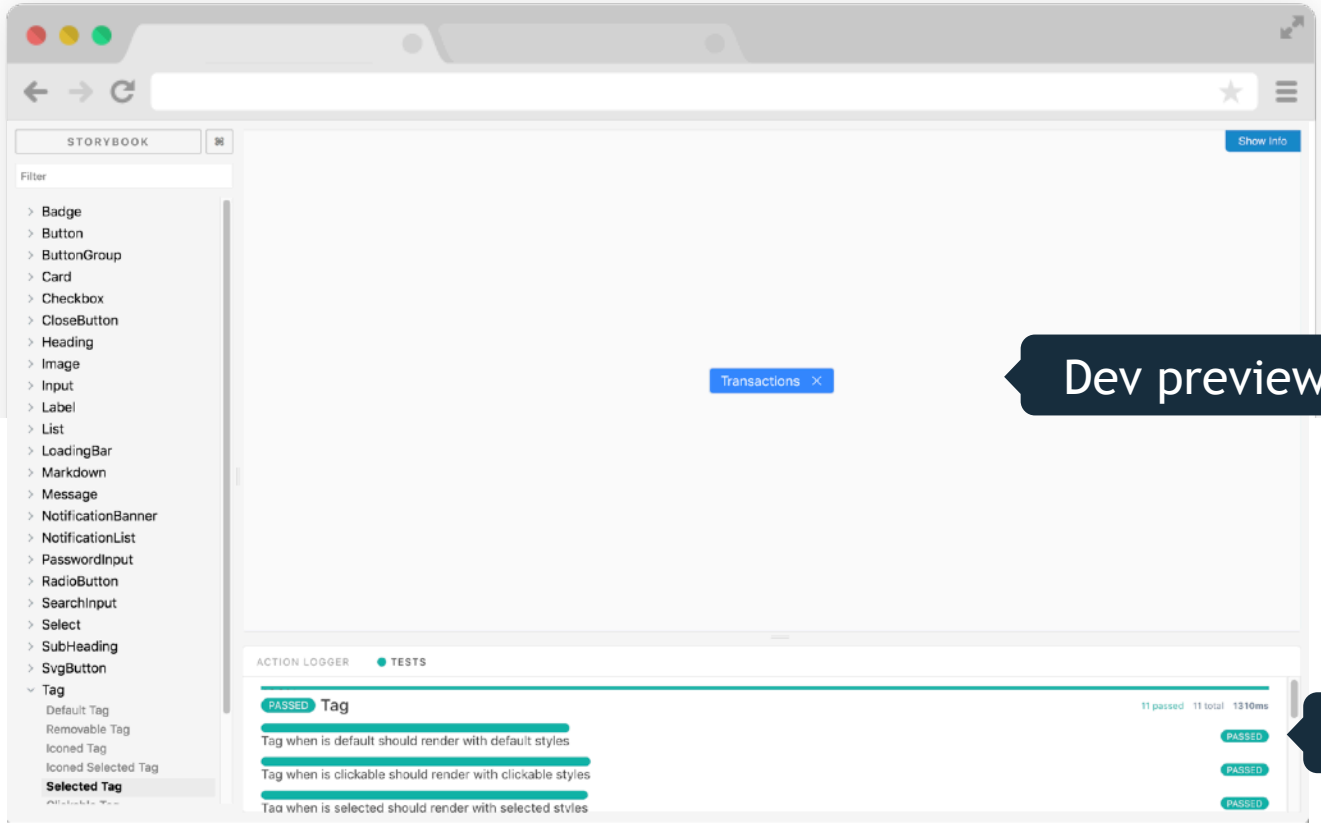
Component library workbench



UI components

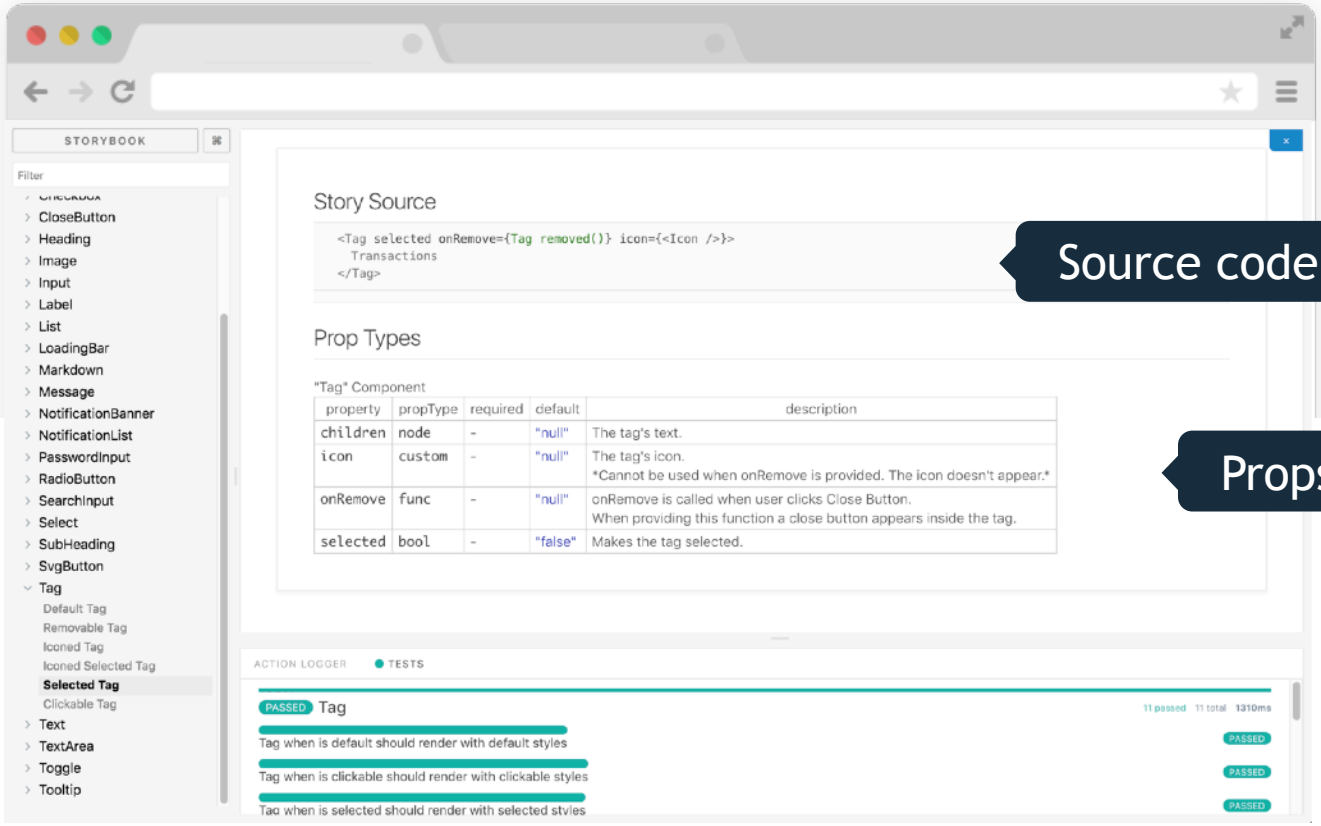
Source code & docs

Dev preview

Test output

Storybook

In-context documentation



Source code & docs

Source code

Props and proptypes

Storybook

What does this give us?

- A productive developer experience ➡ Efficiency!
- Keeps our UI components free of application logic ➡ Reusability!
- Easy to find what components are available ➡ Discoverability!

Our scaling solutions

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Products

Expanding product offering and diverse tech stack:

Enable theming & static CSS extraction

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More and more teams working in parallel:

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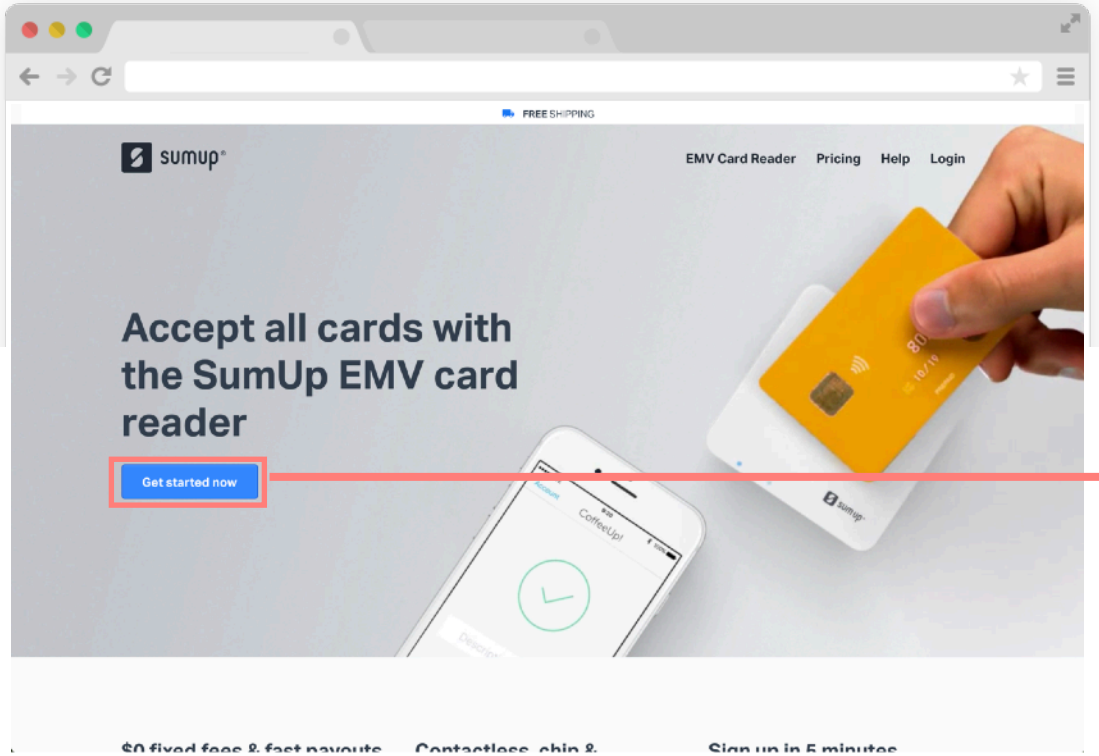
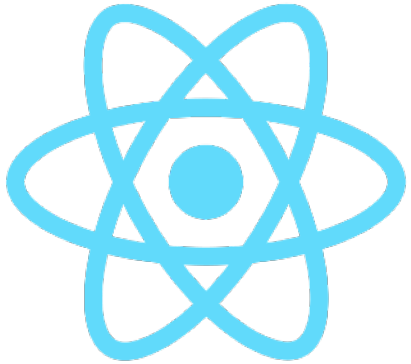
What do I mean by theme?



sumup.com

compraqui.cl

The tech we use



+

React JS

View library

Emotion

css-in-js

Scaling for more products with themes

CSS

HTML

```
const styles = ({ theme }) => css`
  label: tag;
  background-color: ${theme.colors.white}
`;

const Tag = styled('span')(styles);

export default Tag;
```

Scaling for more products with themes

Theme

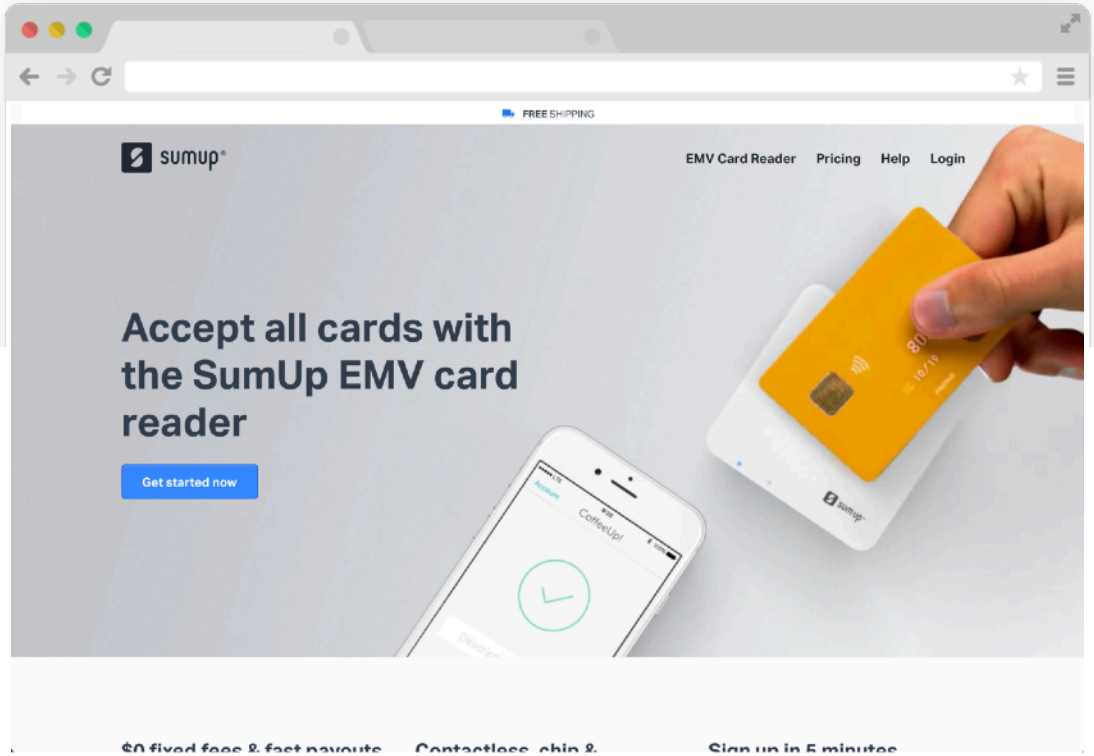
```
export const theme = {
  colors: {
    primary: ‘cornflower’,
    white: ‘#FFF’,
    black: ‘#111’
  }
};

/———————————/

const styles = ({ theme }) => css`
  label: tag;
  background-color: ${theme.colors.white}
`;
```

CSS

Using themes on our website



sumup.com

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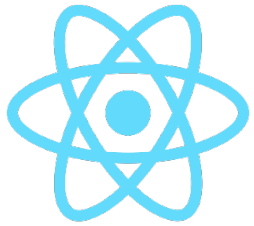
Our diverse (web) tech stack



React JS
Javascript view library

Next JS
React server-side rendering framework

Elm
Compiles to Javascript

Jekyll
Static-site generator

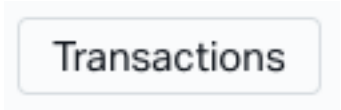
Riot JS
React-like microframework

Ruby on Rails
Traditional web app

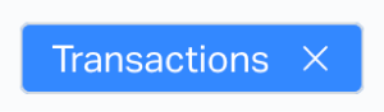
Marketing cloud
Emails & landing pages

Scaling a design system across tech stacks

<Tag/>



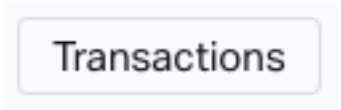
<Tag selected/>



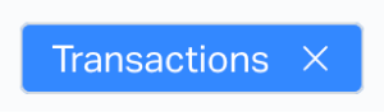
Relies on both parameters
("selected") and theme
("primary color")

Scaling a design system across tech stacks

`<Tag/>`

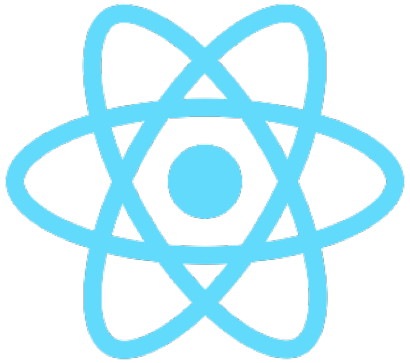


`<Tag selected/>`




```
CSS = (n * theme) * params!
```

The tech we use



React JS

View library

+

Emotion

css-in-js

+

Node

CSS generation script

Scaling a design system across tech stacks

Base CSS

```
const styles = ({ theme }) => css`
  label: tag;
  background-color: ${theme.colors.white}
`;
```

Modifying CSS

```
const selectedStyles = ({ theme, selected }) =>
  selected &&
  css`
    label: tag--selected;
    background-color: ${theme.colors.primary}
  `;
```

```
const Tag = styled('span')(styles, selectedStyles);

export default Tag;
```

Scaling a design system across tech stacks

React apps

```
import { Tag } from 'our-library';

<Tag selected onRemove={fn}>
  Transactions
</Tag>
```

Plain CSS

```
<link rel="stylesheet" href="https://static.sumup.com/
our-library.1.0.css">

<span class="tag tag--selected" onclick="myFn">
  <span class="tag__content">
     Hi
  </span>
</span>
```

The best of both worlds

Modern CSS & easy theming

Ability to style older or 3rd party apps

Our scaling solutions

People

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Products

Expanding product offering and diverse tech stack:

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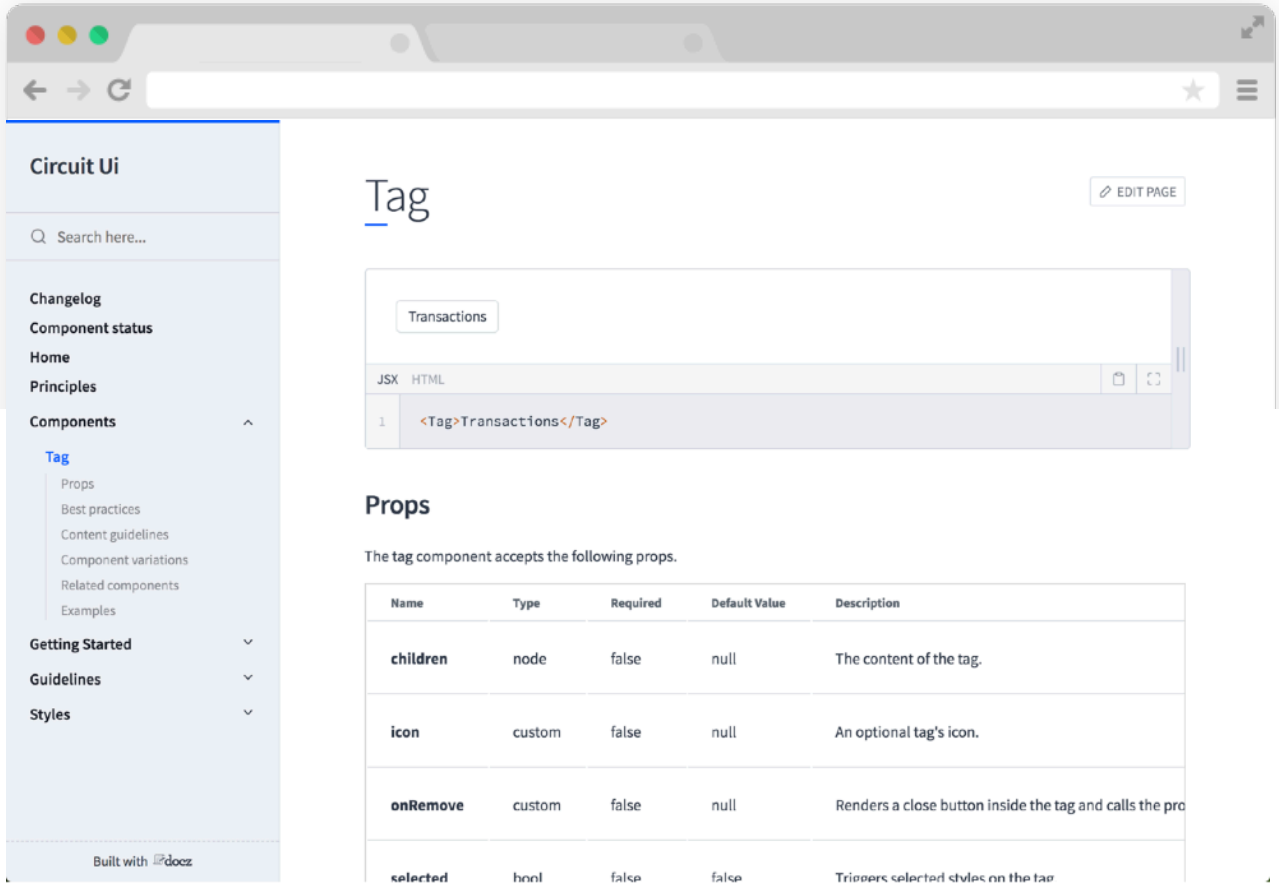
Processes

More and more teams working in parallel:

Automated documentation & tests for regressions

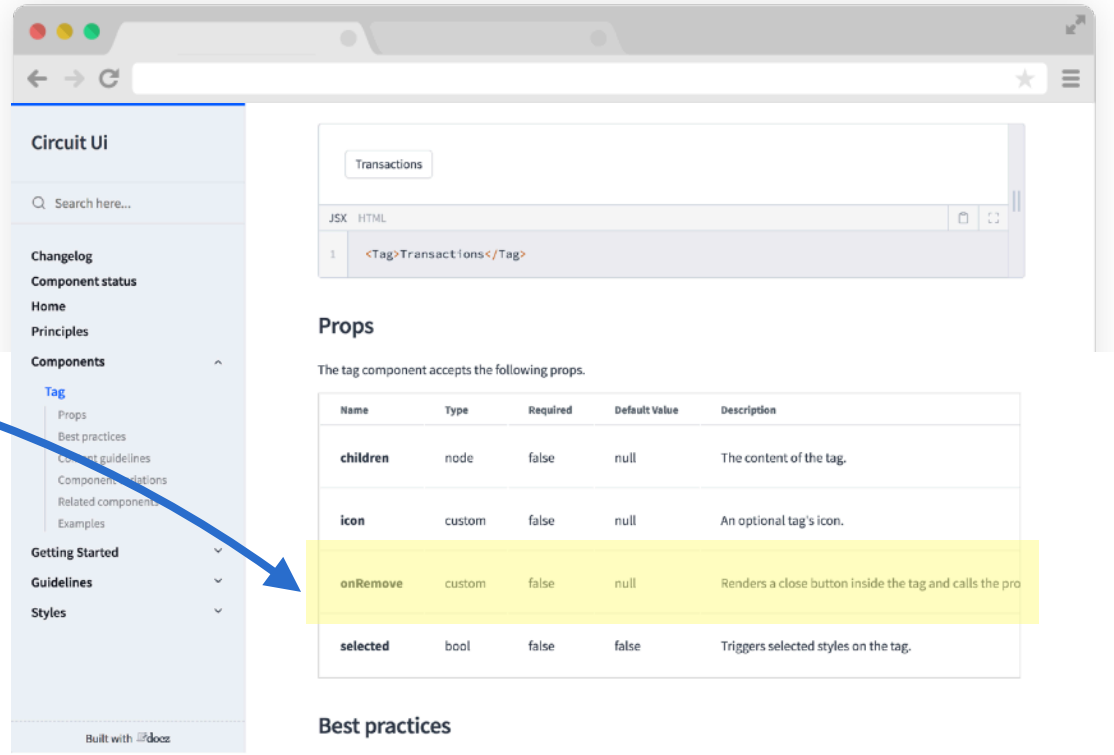
Automatically-generated documentation



docz

Automatically-generated documentation

```
/**
* A tag component.
*/
const Tag = styled('span')(styles);
Tag.propTypes = {
    /**
   * Renders a close button inside
   * the tag and calls the prop onClick.
   */
  onRemove: PropTypes.func
};

/**
* @component
*/
export default Tag;
```



Tests for regressions

```
describe('Tag', () => {
    it(
      'should render selected styles',
      () => {
        const component = create(
          <Tag selected>SomeTest</Tag>
        );
        expect(component).toMatchSnapshot();
      }
    );
});
```

Tests for regressions

Our component

Tag.js

Our tests

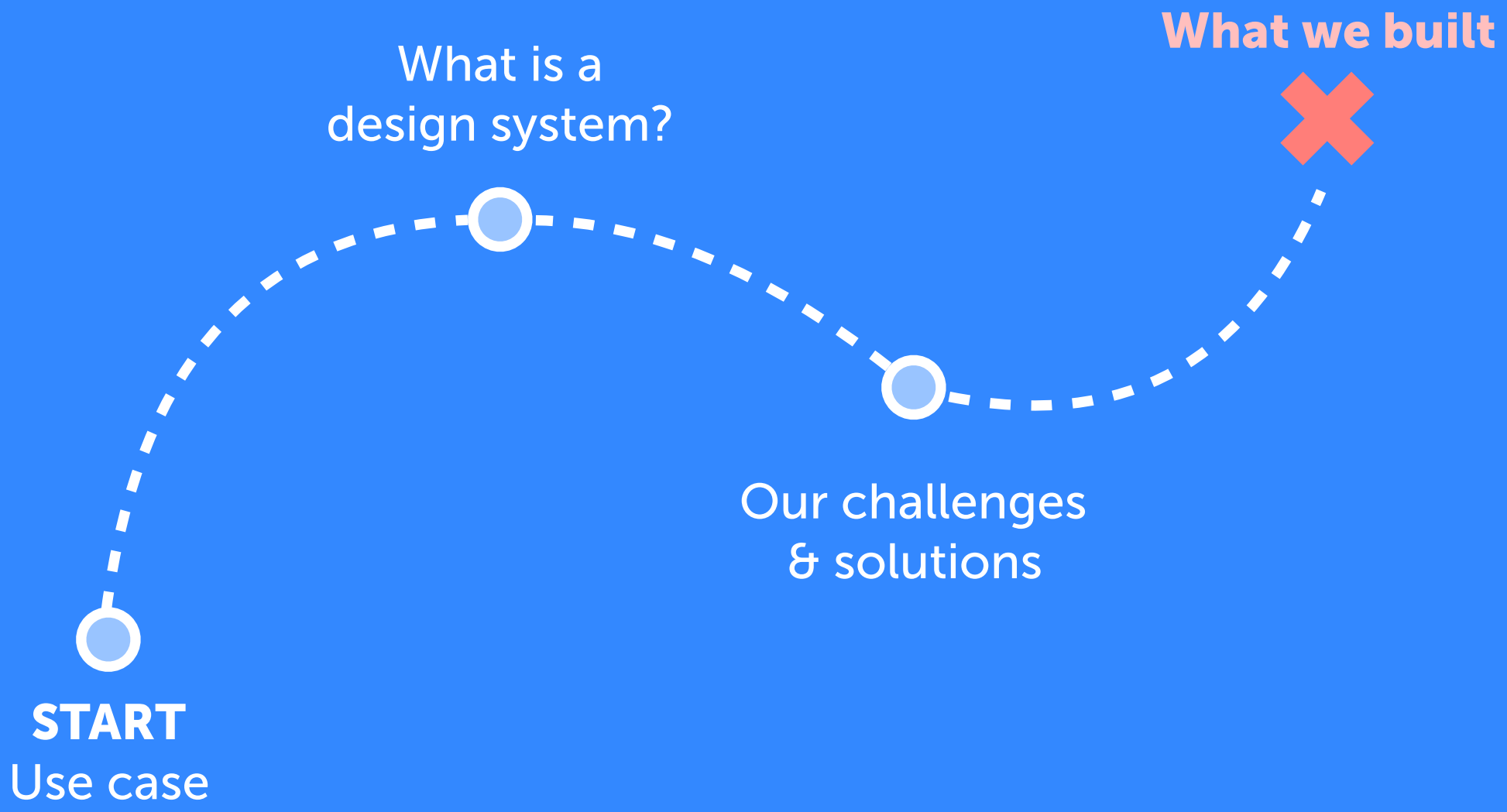
Tag.spec.js

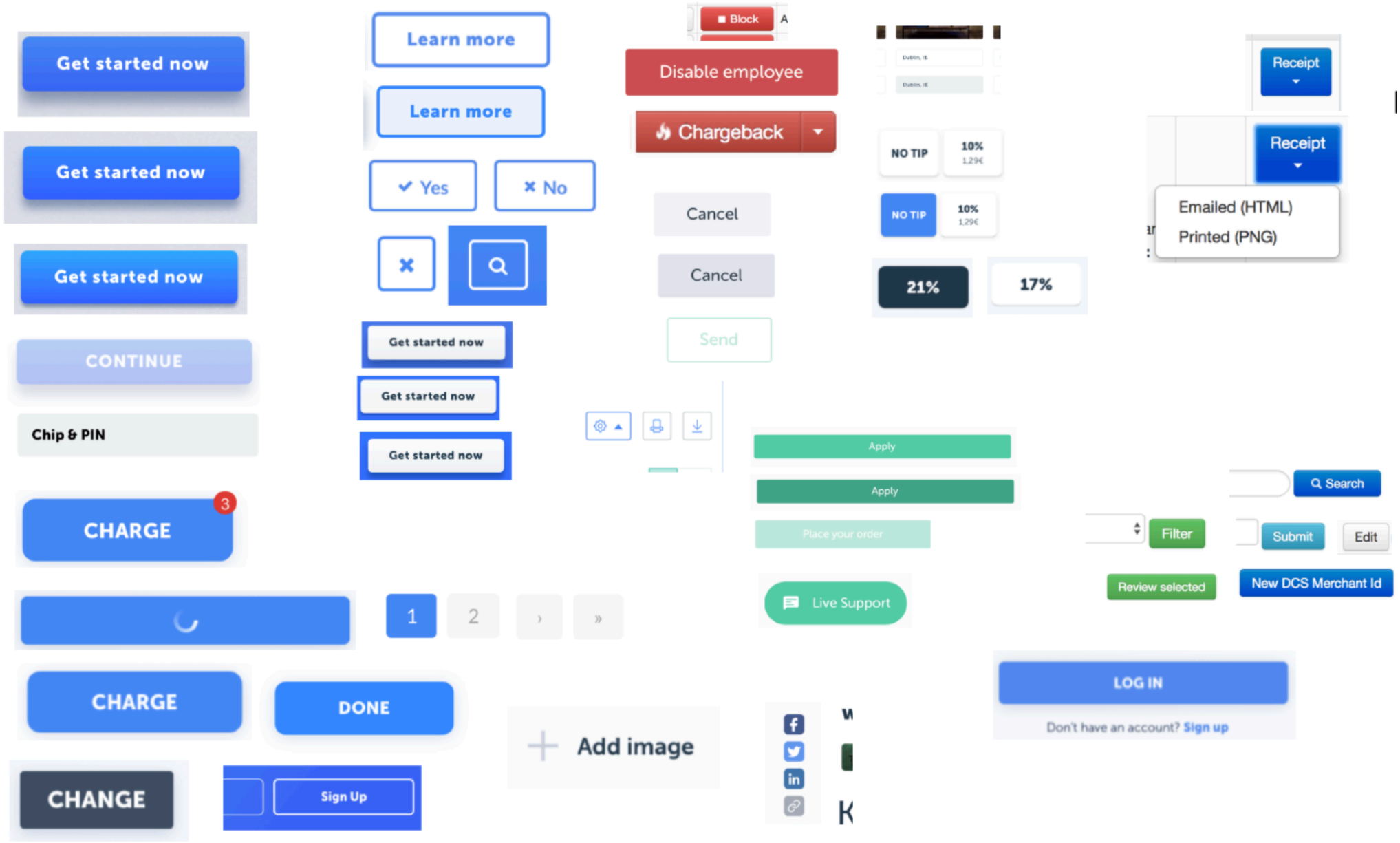
Our snapshots

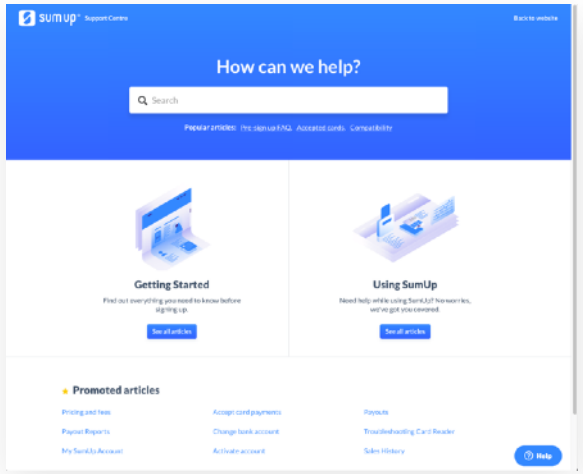
__snapshots__/Tag.spec.js.snap

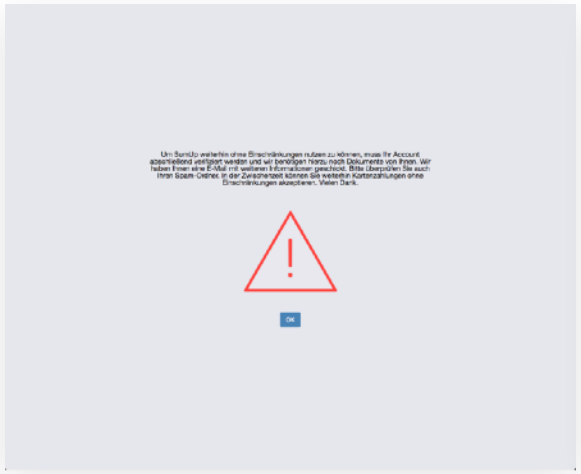
```
exports[`Tag when is selected should render with selected
styles 1`] = `
.circuit-0 {
  padding: 4px 12px;
  border-radius: 4px;
  border: 1px solid #D8DDE1;
  font-size: 15px;
  line-height: 24px;
  cursor: default;
- background-color: #3388FF;
+ background-color: #EEE;
  color: #FFFFFF;
}

<span
  className="circuit-0 circuit-1"
  selected={true}
>
  SomeTest
</span>
`;
```

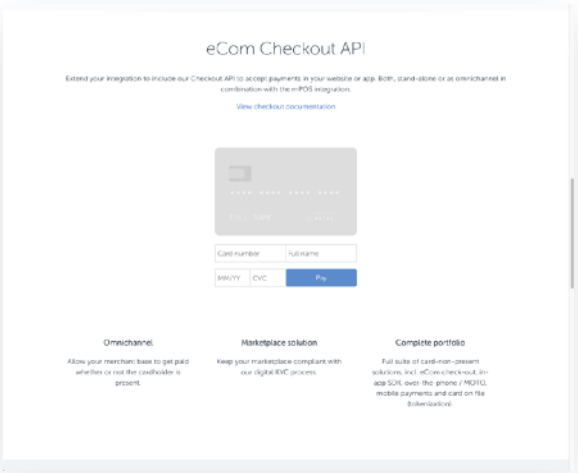
Where we've been today

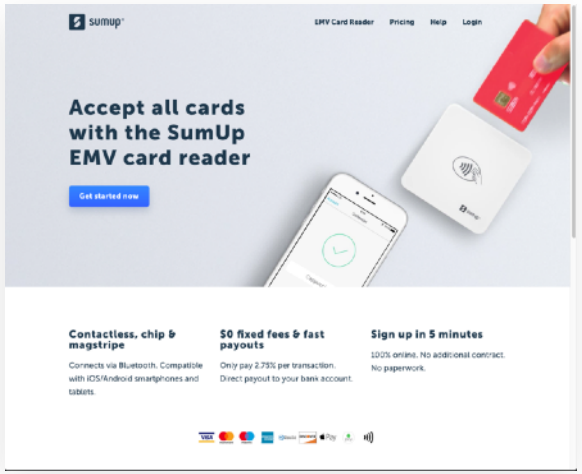



Get started now
Get started now
Get started now
CONTINUE
Chip & PIN
CHARGE
3
CHARGE
DONE
CHANGE
Sign Up
Learn more
Learn more
Yes
No
Get started now
Get started now
Get started now
Block
Disable employee
Chargeback
Cancel
Cancel
Send
NO TIP
10%
1,29€
NO TIP
10%
1,29€
21%
17%
Receipt
Receipt
Emailed (HTML)
Printed (PNG)
Apply
Apply
Place your order
Live Support
Search
Filter
Submit
Edit
Review selected
New DCS Merchant Id
1
2
Add image
LOG IN
Don't have an account? Sign up


How can we help?
Search
Getting Started
Using SumUp
Promoted articles


OK


eCom Checkout API
Omnichannel
Marketplace solution
Complete portfolio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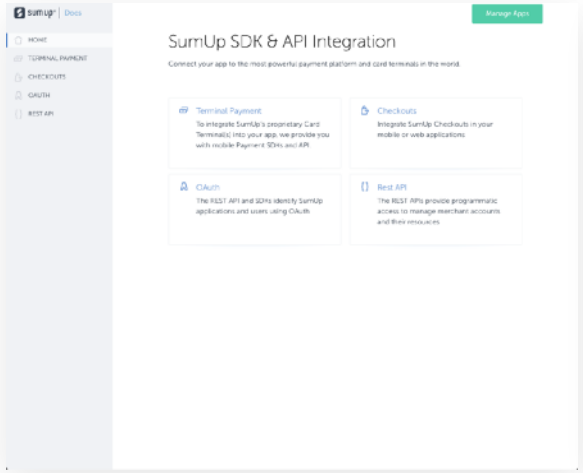
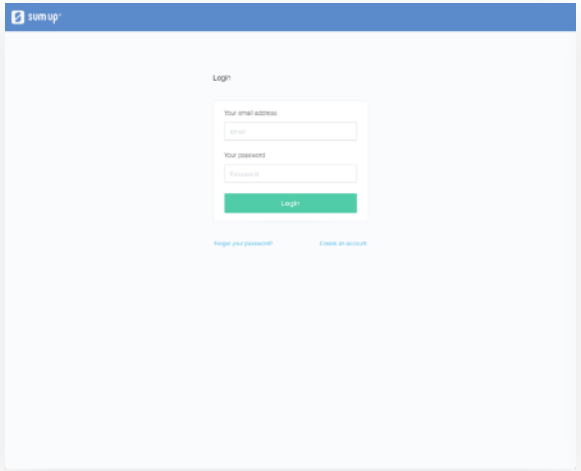
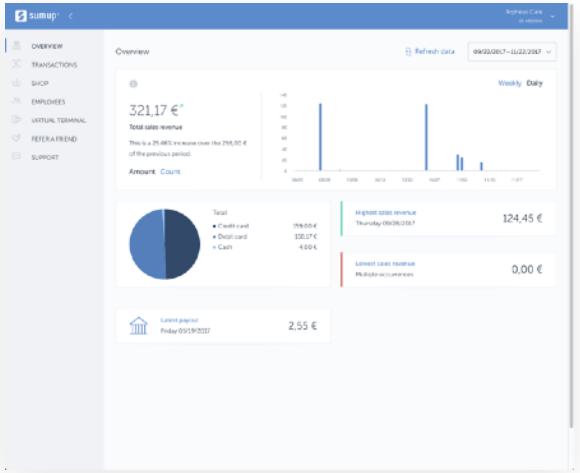
Get started now
Contactless, chip & magstripe
$0 fixed fees & fast payouts
Sign up in 5 minutes


SumUp SDK & API Integration
Terminal Payment
Checkouts
OAuth
Rest API


Login

Check Compatibility
Does your phone support the SumUp Air Card Reader?
Untested
We are sorry, but we have not tested SumUp Air with your device yet.


Overview
321,17 €
124,45 €
0,00 €
2,55 €

sumup®
CIRCUIT

100	#FAFBFC
300	#D8DDE1
Neutral	#9DA7B1
700	#5C656F
900	#212933

100	#DAEAFF
300	#7FB5FF
Blue	#3388FF
700	#2567D8
900	#1641AC

100	#C6E5CB
300	#97E2A3
Green	#62DE76

Green	#62DE76
700	#498858
900	#2F903E

100	#F2E5CB
300	#F7DA9F
Yellow	#FFC859
700	#D4A546
900	#AB8433

100	#FFE6E1
300	#FFAF9F
Red	#FF7559
700	#D55A41
900	#A73D28

White	#FFFFFF
Black	#0F131A

B K M G T P E Z

Zetta Heading 42/48

Exa Heading 36/44

Peta Heading 28/32

Tera Heading 24/32

Giga Heading 22/24

Mega Heading 19/24

Kilo Heading 17/24

MEGA SUBHEADING 14/18 UPPERCASE

KILO SUBHEADING 12/20 UPPERCASE

Giga Text 18/28

Mega Text 15/24

Kilo Text 13/20

Giga Text 18/28

Mega Text 15/24

Kilo Text 13/20

KILO

Primary

Hover

Active

Focus

Disabled

PADDING: MEGA (16) / BIT (4)

MEGA

Primary

Hover

Active

Focus

Disabled

PADDING: GIGA (24) / BYTE (8)

MEGA

Primary

Hover

Active

Focus

Disabled

PADDING: GIGA (24) / BYTE (8)

GIGA

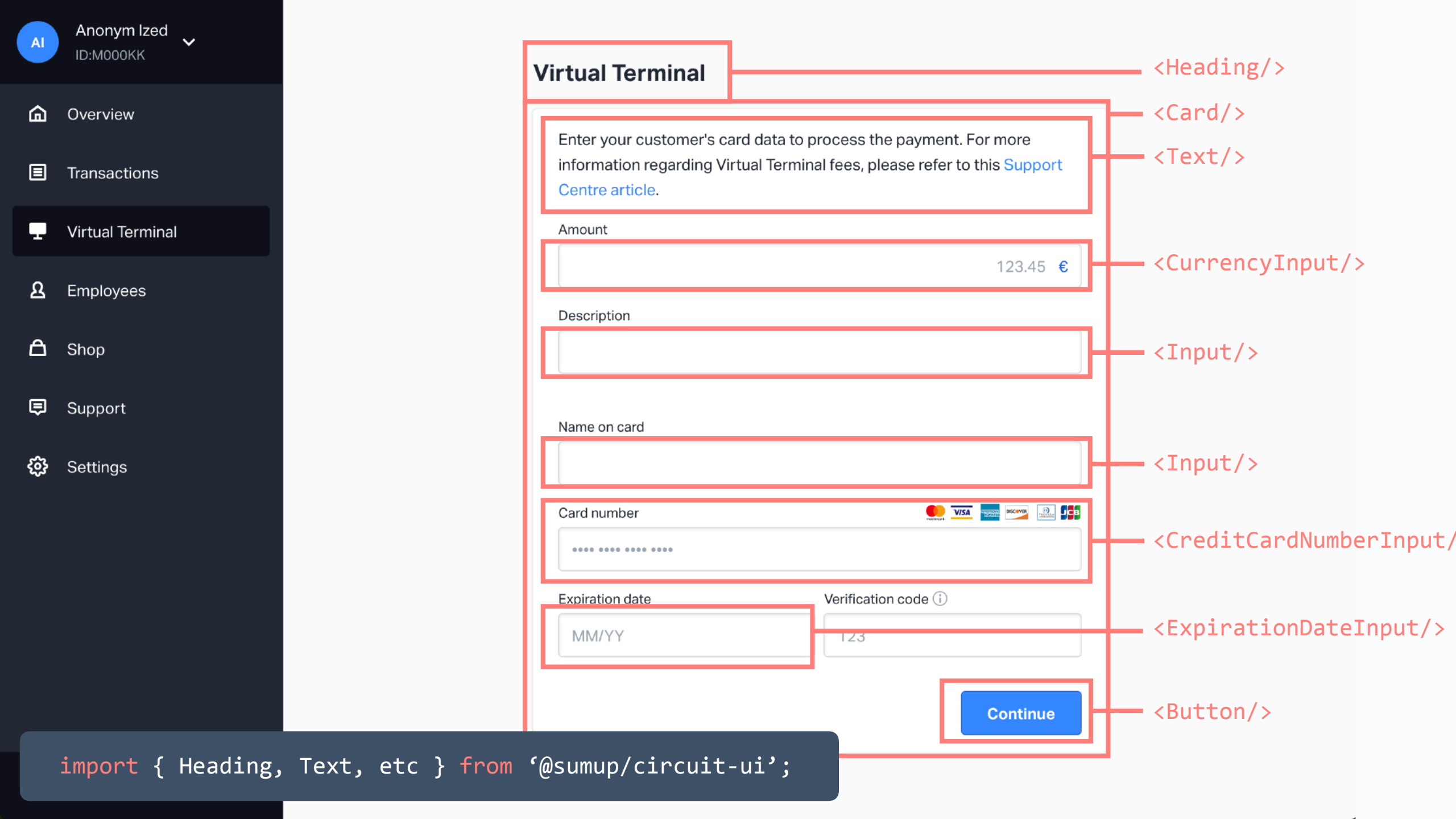
Primary

Manage Permissions

Settings

Disable Employee

PADDING: TERRA (32) / KILO (12)


AI
Anonym Ized
ID:M000KK
Overview
Transactions
Virtual Terminal
Employees
Shop
Support
Settings
Virtual Terminal
Enter your customer's card data to process the payment. For more information regarding Virtual Terminal fees, please refer to this Support Centre article.
Amount
123.45 €
Description
Name on card
Card number
•••• •••• •••• ••••
Expiration date
MM/YY
Verification code
123
Continue
<Heading/>
<Card/>
<Text/>
<CurrencyInput/>
<Input/>
<Input/>
<CreditCardNumberInput/
<ExpirationDateInput/>
<Button/>
import { Heading, Text, etc } from '@sumup/circuit-ui';

P.s. It’s open source

https://github.com/sumup/circuit-ui

Thank you.

sumup.com

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