

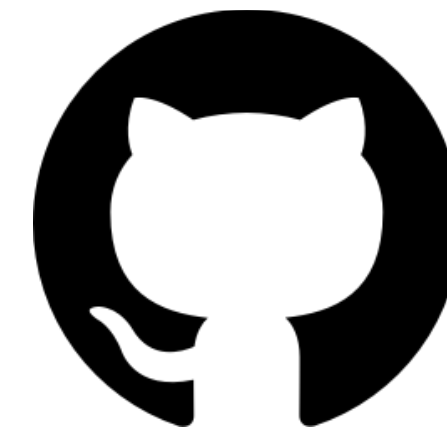


# Take the *goRe* out of the *DjangoReact* stack

Developing, packaging and integrating JS apps with Django

 /n6g7    /n4ng5l   nathang@theodo.co.uk

Single page applications are the new norm



**Django alone isn't enough anymore** 🙄

**How do I use a JS app alongside Django? 🤔**

No standard setup for a Django+Javascript site

What are the benefits?

# Plan

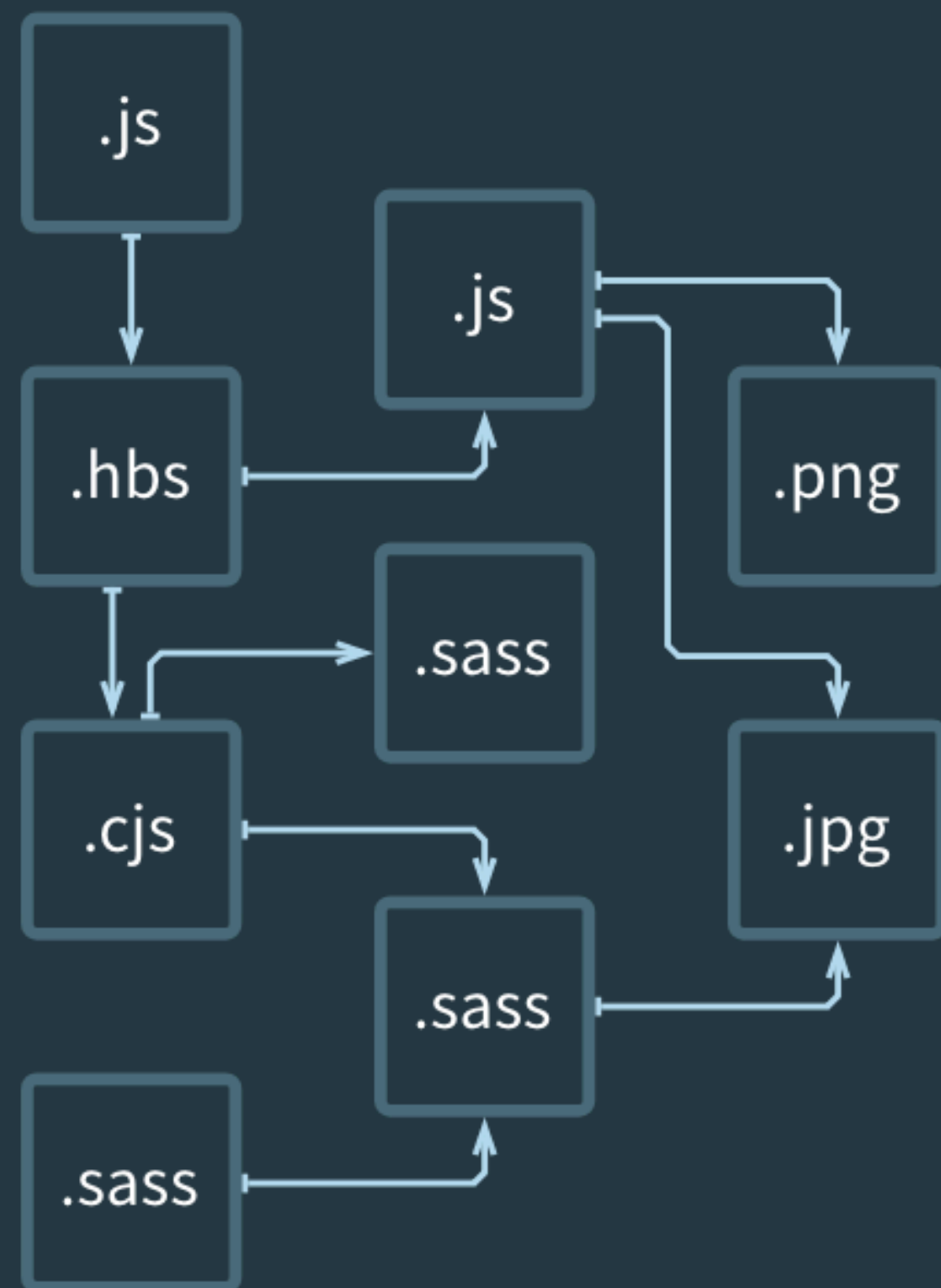
1. Setting up a development environment
2. Deploying to production
3. Leveraging Django in the frontend: form validation



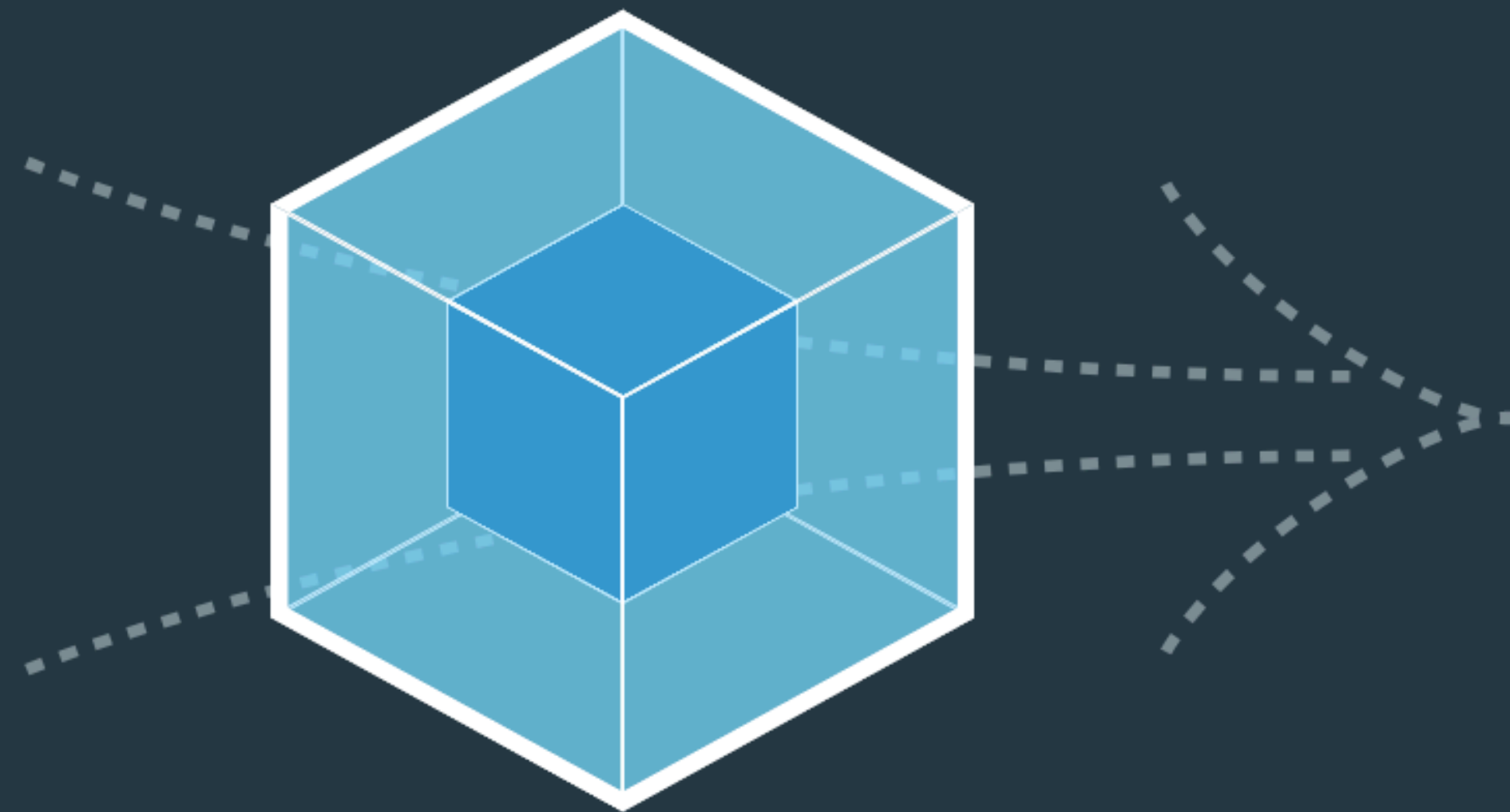
# Setting up a development environment



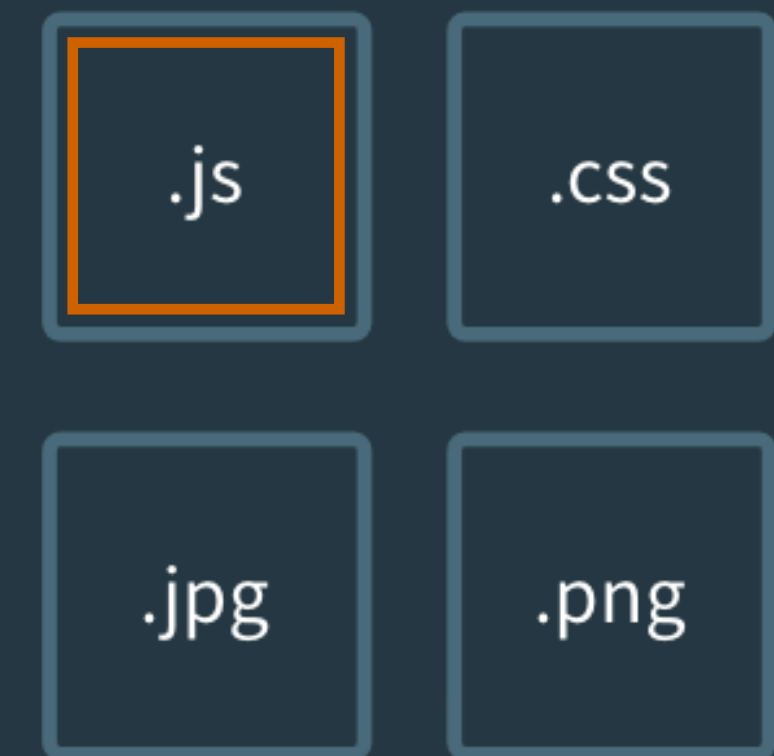
**dj**



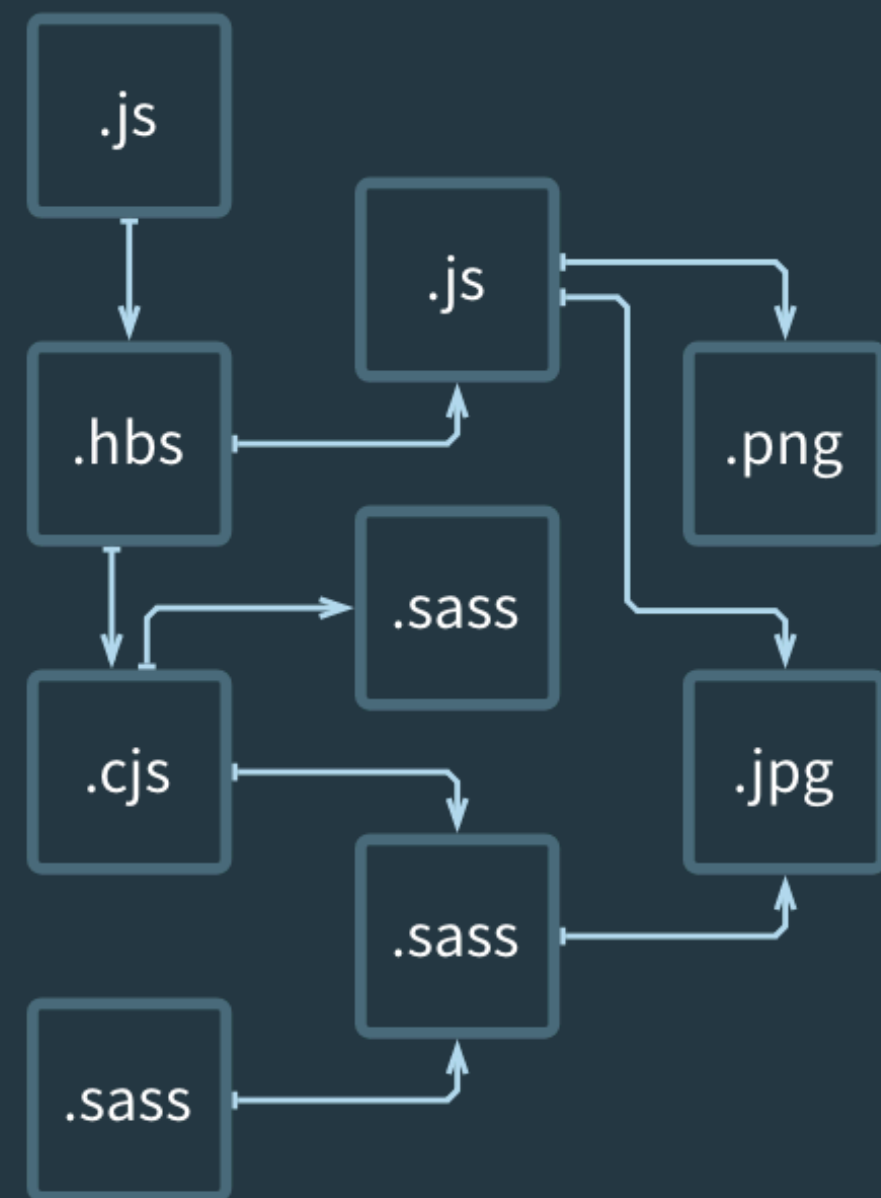
MODULES WITH DEPENDENCIES



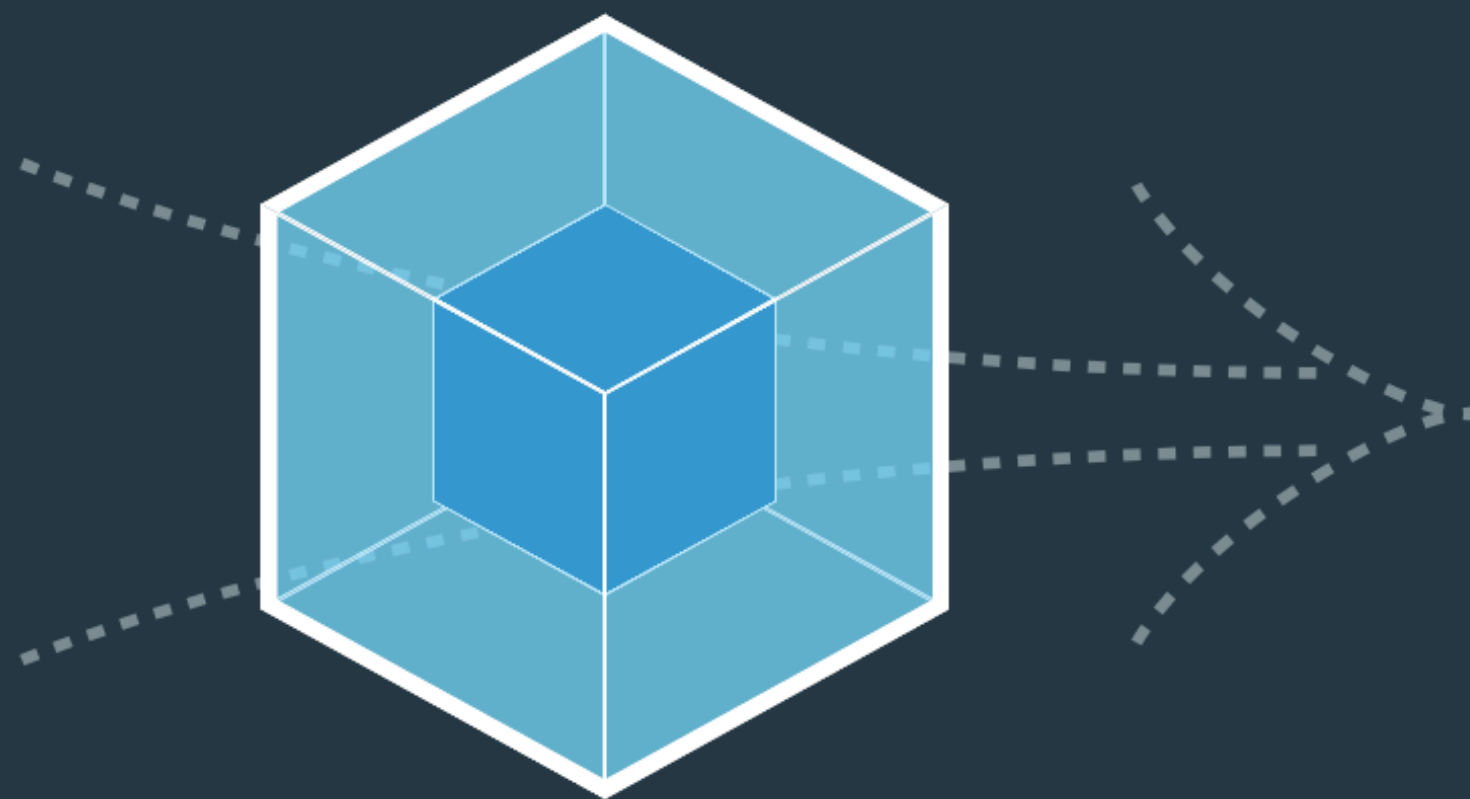
## Bundle



STATIC ASSETS



MODULES WITH DEPENDENCIES



## Bundle



STATIC ASSETS

**Also includes:**

development server

hot reloading



**dj**





Problem #1

**How do I run Django and Webpack  
side-by-side in dev?**

**Attempt #1**

webpack-dev-server



API



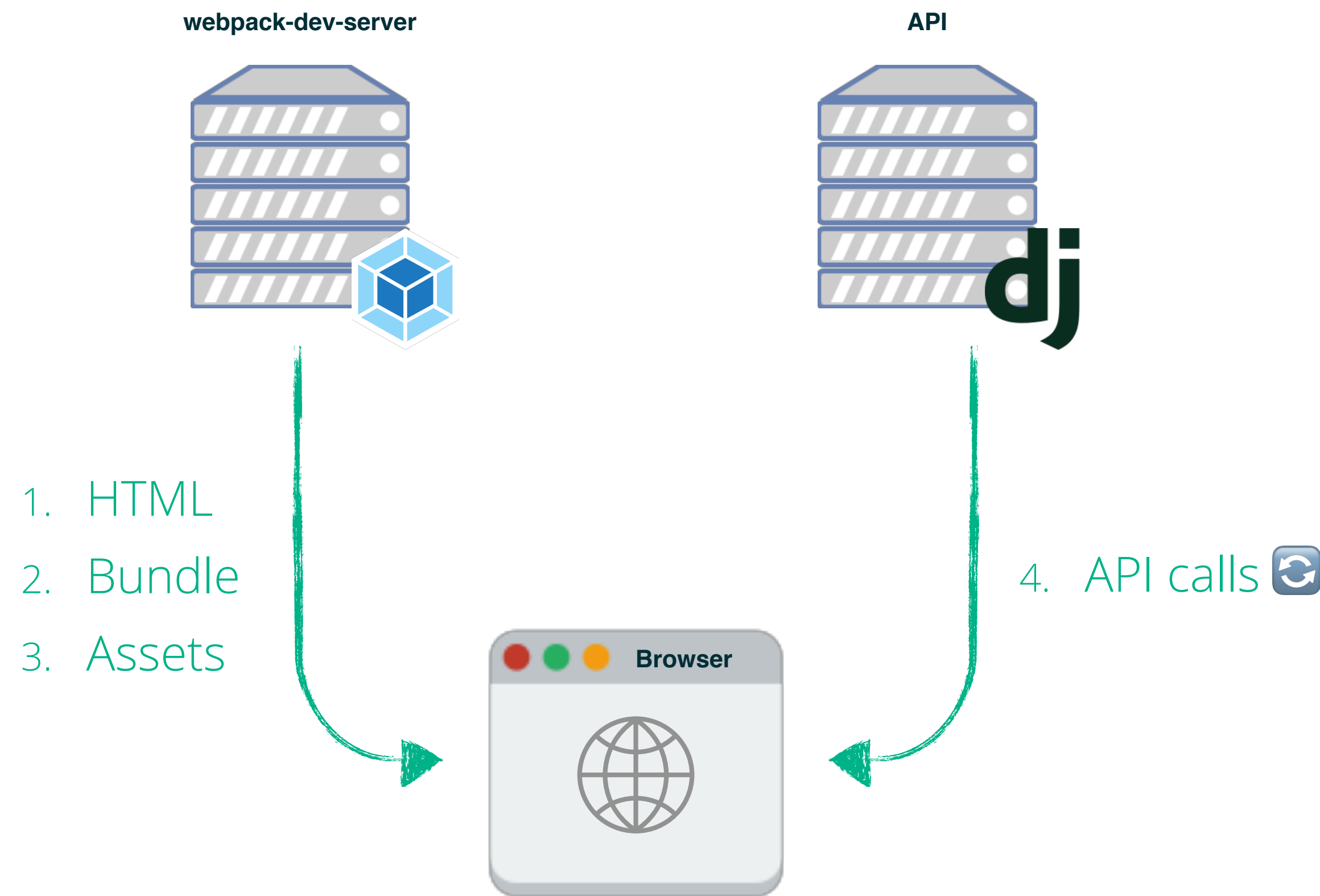
1. HTML
2. Bundle
3. Assets

Attempt #1

4. API calls 



# Attempt #1



✗ HTML in production?  
✗ CORS errors in dev!



**Attempt #2**

webpack-dev-server



1. Bundle and assets



API



**dj**

Attempt #2

2. HTML

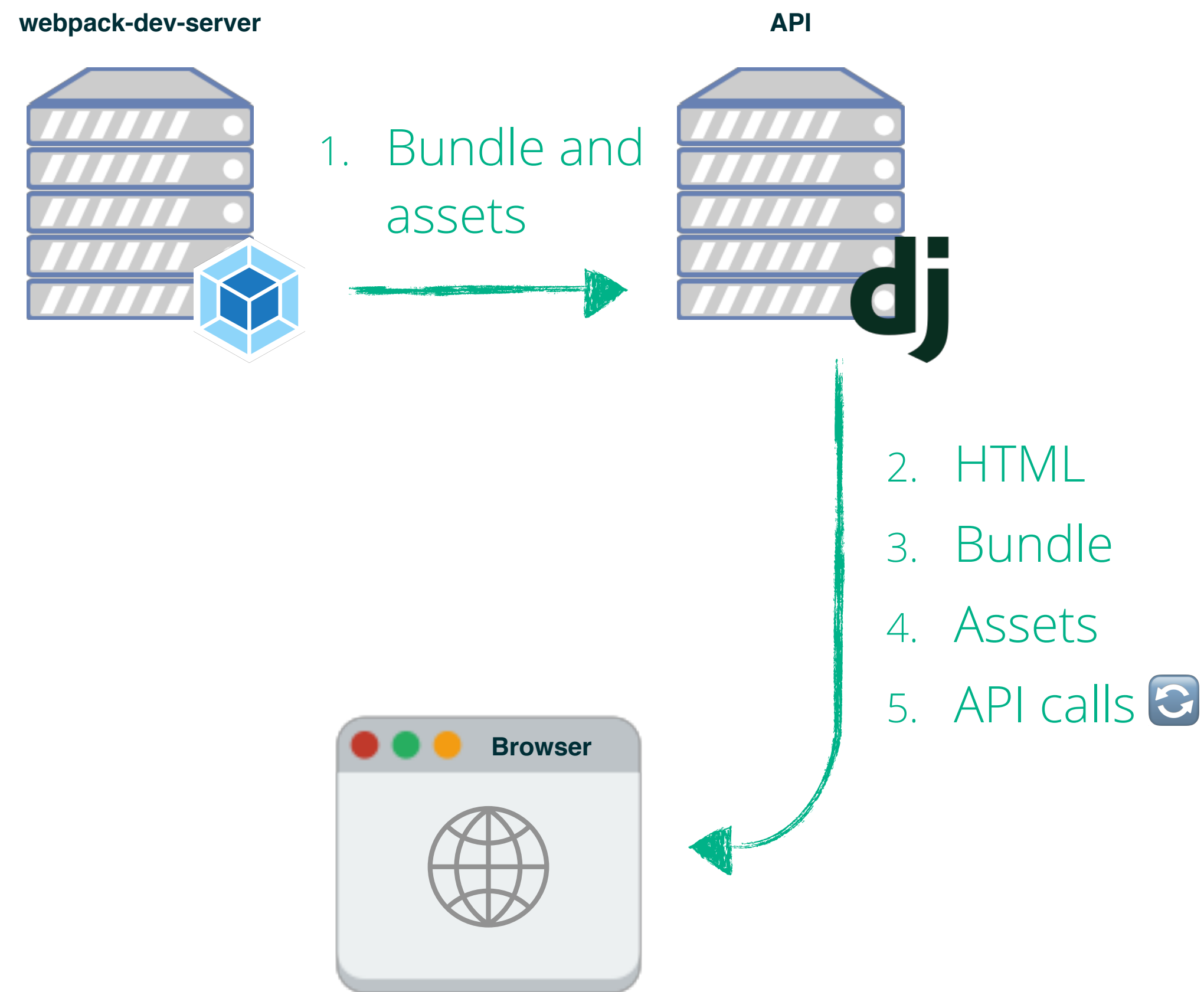
3. Bundle

4. Assets

5. API calls 



## Attempt #2



✓ HTML in production

✓ No CORS errors



Problem #1

# Hot reloading

**Attempt #3**

webpack-dev-server



Front view + API



Attempt #3

2. Bundle

3. Assets

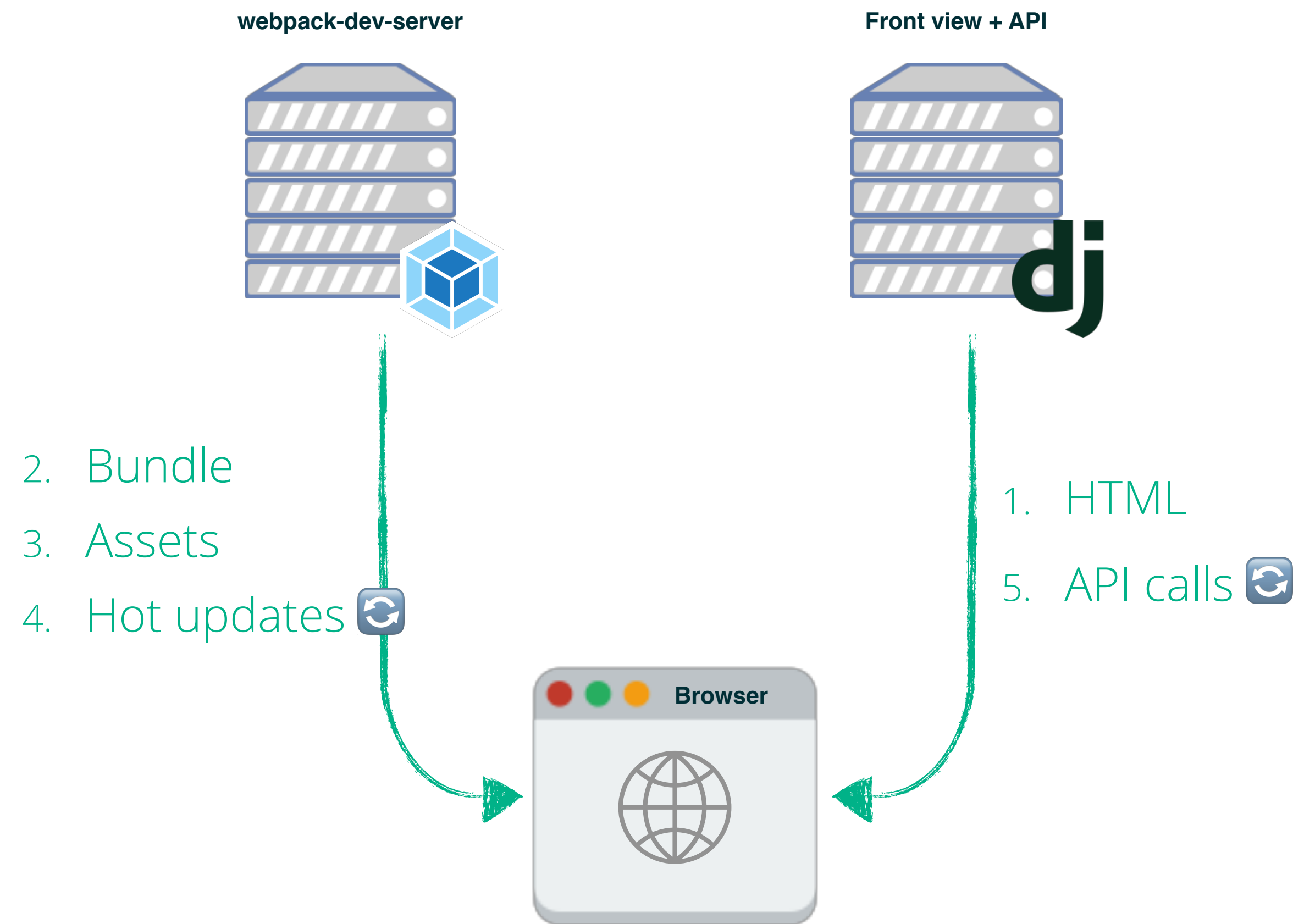
4. Hot updates 

1. HTML

5. API calls 



# Attempt #3



✓ Hot reloading works



**Some code**

webpack-dev-server



Front view + API



Attempt #3

2. Bundle

3. Assets

4. Hot updates 

1. HTML

5. API calls 



**./front/views.py**

```
class FrontendView(TemplateView):  
    template_name = "front/index.html"  
  
    def get_context_data(self, **kwargs):  
        context = super().get_context_data(**kwargs)  
        context["opening_hours"] = OpeningHours.objects.all()  
        return context
```

## ./front/templates/front/index.html

```
<body>
  <!-- [...] -->
  {% include "snippets/ga.html" with tracking_id=ga_tracking_id %}
  <!-- [...] -->
  <script>
    var openingHours = [
      {% for item in opening_hours %}
        {
          day: '{{item.day}}',
          openingTime: '{{item.opening_time}}',
          order: '{{item.order}}',
        },
      {% endfor %}
    ]
  </script>
  <script src="http://localhost:3000/js/bundle.js"></script>
</body>
```

## ./project/urls.py

```
from django.contrib import admin
from django.urls import include, path, re_path

from front.views import FrontendView

urlpatterns = [
    path('admin/', admin.site.urls),
    # ...
    re_path(r'^[a-zA-Z0-9/-]*$', FrontendView.as_view(), name='app'),
]
```



**Deploying to production**

dev ☒ prod

webpack-dev-server



1. Bundle and assets



Front app + API



## ./front/templates/front/index.html

```
<body>
  <!-- [...] -->
  <script>
    const openingHours = [
      {% for item in opening_hours %}
        {
          day: '{{item.day}}',
          openingTime: '{{item.opening_time}}',
          order: '{{item.order}}',
        },
      {% endfor %}
    ]
  </script>
  <script src="{% static "front/bundle.js" %}"></script>
</body>
```

dev ☒ prod

Front app + API




1. HTML
2. Bundle
3. Assets
4. API calls 

dev ☒ prod

Front app + API



1. HTML
2. Bundle
3. Assets
4. API calls 

## One moving piece

```
<script src="{% static 'front/bundle.js' %}"></script>
```

dev  $\approx$  prod 🎉

## Not necessarily webpack ✨

# Leveraging Django in the frontend

# Contract

The objectives will be based on how you gain sales by acquiring and keeping customers. A marketing strategy helps on making good messages with the right twist of marketing approaches in order to have a good outcome of your sales and marketing activities. It is a process to allow an organization to focus resources on the greatest opportunities to increase sales and achieve the company's target. Marketing strategy's goal is to increase sales and achieve advantage over other competitors. It includes short term and long term activities of marketing that has to do with the analysis of a company's situation and contribute to it's objectives. Putting your strategy into action is how your marketing plan should work. Marketing budgets will be set, at the same time it will also show you how you're going to work with your targets, it maybe through networking, advertising etc.

Having the perfect timing with your activities to fit your customers buying cycles will help you saving money and maximizing sales. The marketing plan should be innovative. It should have the details on how your sales are followed up and the activities your doing to develop your offers. Branding is defined as the process of coming up or making a unique name or design for a certain product. Having a good brand strategy allows you to have a major advantage in gaining a large increase in your market competitions. Your brand tells your costumers what they can have or expect from the products and services you offer. Are you innovative or are you the experienced type? or do you offer a high-cost, high-quality product, or a low-cost, high-value products? It's impossible to be both. You should consider on thinking what your customers need you to be. Your logo is them main foundation of your brand. All the promotional materials should be connected with your logo to communicate with your customers and Brand messages are delivered and planned based on the questions how, what, when, to whom and where your brand strategy is. Advertisement, visual communication and distribution channels are parts of brand strategy.

The strategy of branding you have should be consistent, because it leads to a strong brand equity. Branding is defined as the process of coming up or making a unique name or design for a certain product. The strategy of branding you have should be consistent, because it leads to a strong brand equity. The objectives will be based on how you gain sales by acquiring and keeping customers. A marketing strategy helps on making good messages with the right twist of marketing approaches in order to have a good outcome of your sales and marketing activities. It is a process to allow an organization to focus resources on the greatest opportunities to increase sales and achieve the company's target. Marketing strategy's goal is to increase sales and achieve advantage over other competitors. It includes short term and long term activities of marketing that has to do with the analysis of a company's situation and contribute to it's objectives. Putting your strategy into action is how your marketing plan should work. Marketing budgets will be set, at the same time it will also show you how you're going to work with your targets, it maybe through networking, advertising etc. Having the perfect timing with your activities to fit your customers buying cycles will help you saving money and maximizing sales. The marketing plan should be innovative. It should have the details on how your sales are followed up and the activities your doing to develop your offers. Branding is defined as the process of coming up or making a unique name or design for a certain product. Having a good brand strategy allows you to have a major advantage in gaining a large increase in your market competitions. Your brand tells your costumers what they can have or expect from the products and services you offer. Are you innovative or are you the experienced type? or do you offer a high-cost, high-quality product, or a low-cost, high-value products? It's impossible to be both. You should consider on thinking what your customers need you to be. Your logo is them main foundation of your brand. All the promotional materials should be connected with your logo to communicate with your customers and Brand messages are delivered and planned based on the questions how, what, when, to whom and where your brand strategy is. Advertisement, visual communication and distribution channels are parts of brand strategy.

- (A) It is a process to allow an organization to focus resources on the greatest opportunities to increase sales and achieve advantage over other competitors. It includes short term and long term activities of marketing that has to do with the analysis of a company's situation and contribute to it's objectives.
- (B) Marketing strategy's goal is to increase sales and achieve advantage over other competitors. It includes short term and long term activities of marketing that has to do with the analysis of a company's situation and contribute to it's objectives.
- (C) The objectives will be based on how you gain sales by acquiring and keeping customers. A marketing strategy helps on making good messages with the right twist of marketing approaches in order to have a good outcome of your sales and marketing activities.
- (D) A marketing strategy helps on making good messages with the right twist of marketing approaches in order to have a good outcome of your sales and marketing activities.
- (E) Putting your strategy into action is how your marketing plan should work. Marketing budgets will be set, at the same time it will also show you how you're going to work with your targets, it maybe through networking, advertising etc. Having the perfect timing with your activities to fit your customers buying cycles will help you saving money and maximizing sales. The marketing plan should be innovative. It should have the details on how your sales are followed up and the activities your doing to develop your offers. Branding is defined as the process of coming up or making a unique name or design for a certain product. Having a good brand strategy allows you to have a major advantage in gaining a large increase in your market competitions. Your brand tells your costumers what they can have or expect from the products and services you offer. Are you innovative or are you the experienced type? or do you offer a high-cost, high-quality product, or a low-cost, high-value products? It's impossible to be both. You should consider on thinking what your customers need you to be. Your logo is them main foundation of your brand. All the promotional materials should be connected with your logo to communicate with your customers and Brand messages are delivered and planned based on the questions how, what, when, to whom and where your brand strategy is. Advertisement, visual communication and distribution channels are parts of brand strategy.
- (F) Improvement should be measured regularly and assessed in order for you to know what's beneficial and what is not. This will help you set new targets.
- (G) Brand messages are delivered and planned based on the questions how, what, when, to whom and where your brand strategy is. Advertisement, visual communication and distribution channels are parts of brand strategy.

Signature 1

# Asynchronous form validation

# An example

Product

2€/unit

Quantity

4

⬆  
⬇  
⬆

Price

8€

🛒

Add to cart

# Frontend validation

<div><div>Product</div><div>2€/unit</div><div>Quantity</div><div><div>1</div><div></div></div><div>Price</div><div>2€</div><div>Please enter a quantity.</div><div><div><div></div></div>Add to cart</div></div>	<div><div>Product</div><div>2€/unit</div><div>Quantity</div><div><div>-7</div><div></div></div><div>Price</div><div>-14€</div><div>Quantity has to greater than zero.</div><div><div><div></div></div>Add to cart</div></div>
--	---

Self consistency

# Backend validation

Product

2€/unit

Quantity

22

Price

44€

There are currently only 10 items in stock, please choose a value between 1 and 10.

Add to cart

Product

2€/unit

Quantity

28

Price

56€

Your current credit is 36€, please top-up your account before adding to your cart.

Add to cart

Compatibility with pre-existing data  
& self-consistency 👍

**Django errors in the frontend?**



```

import { compose } from "recompose"
import drfrf from "drfrf"

const App = props => {
  return <form onSubmit={props.handleSubmit}>
    <h1>Product</h1>
    <Field name='amount' type='number' />
    <Field name='price' type='text' />
    <button type='submit'>Add to cart</button>
  </form>
}

const asyncValidate = values => fetch(
  "http://localhost:8000/api/items/validation",
  { body: JSON.stringify(values) }
).then(res => res.json())

export default compose(
  withProps({ asyncValidate }),
  reduxForm({ ... })
)(App)

```


### Product

2€/unit

**Quantity**

**Price**

There are currently only 10 items in stock, please choose a value between 1 and 10.


Add to cart



Djangojs Administration

WELCOME, **NATHAN**. [VIEW SITE](#) / [CHANGE PASSWORD](#) / [LOG OUT](#)

Home > Shop > Cart items

Select cart item to change

ADD CART ITEM +

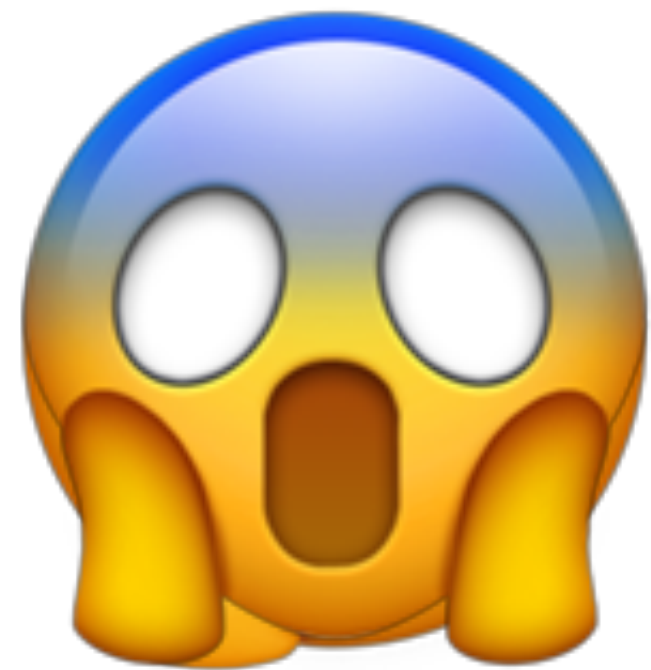
Action: 

-----

Go

 0 of 14 selected

<input type="checkbox"/>	CART ITEM	AMOUNT	CREATED AT
<input type="checkbox"/>	<a href="#">cartitem:f7cba6</a>	5	Sept. 26, 2018, 11 p.m.
<input type="checkbox"/>	<a href="#">cartitem:834209</a>	3	Sept. 26, 2018, 10:59 p.m.
<input type="checkbox"/>	<a href="#">cartitem:cf8dbd</a>	2	Sept. 26, 2018, 10:59 p.m.
<input type="checkbox"/>	<a href="#">cartitem:bd8be2</a>	17	Sept. 26, 2018, 10:47 p.m.
<input type="checkbox"/>	<a href="#">cartitem:a45e00</a>	15	Sept. 26, 2018, 10:46 p.m.
<input type="checkbox"/>	<a href="#">cartitem:d3c64b</a>	13	Sept. 26, 2018, 10:46 p.m.
<input type="checkbox"/>	<a href="#">cartitem:0898c4</a>	10	Sept. 26, 2018, 10:46 p.m.
<input type="checkbox"/>	<a href="#">cartitem:24db1c</a>	8	Sept. 26, 2018, 10:45 p.m.
<input type="checkbox"/>	<a href="#">cartitem:122cdc</a>	6	Sept. 26, 2018, 10:45 p.m.
<input type="checkbox"/>	<a href="#">cartitem:94507b</a>	4	Sept. 26, 2018, 10:44 p.m.
<input type="checkbox"/>	<a href="#">cartitem:bf65cd</a>	1	Sept. 26, 2018, 6:50 p.m.
<input type="checkbox"/>	<a href="#">cartitem:e587a9</a>	18	Sept. 26, 2018, 6:43 p.m.
<input type="checkbox"/>	<a href="#">cartitem:3ba3d3</a>	123	Sept. 26, 2018, 6:34 p.m.
<input type="checkbox"/>	<a href="#">cartitem:6b385e</a>	12	Sept. 26, 2018, 6:19 p.m.



Live validation  
saves **before**  
**submit!**

# What's happening?

```
class CartItemCreateAPIView(generics.CreateAPIView):  
    queryset = CartItem.objects.all()  
    serializer_class = CartItemSerializer
```

CreateAPIView creates new instances  
at each validation call

We need a custom view

```
class ValidateAPIView(GenericAPIView):  
    def post(self, request, *args, **kwargs):  
        return self.validate(request, *args, **kwargs)  
  
    def validate(self, request, *args, **kwargs):  
        serializer = self.get_serializer(data=request.data)  
        serializer.is_valid(raise_exception=True)  
  
        return Response({}, status=status.HTTP_200_OK)
```

### Product

2€/unit

#### Quantity

22



#### Price

44€

There are currently only 10 items in stock, please choose a value between 1 and 10.



Add to cart

## Djangojs Administration

WELCOME, **NATHAN**. [VIEW SITE](#) / [CHANGE PASSWORD](#) / [LOG OUT](#)

[Home](#) › [Shop](#) › [Cart items](#)

Select cart item to change

ADD CART ITEM +

Action:

-----

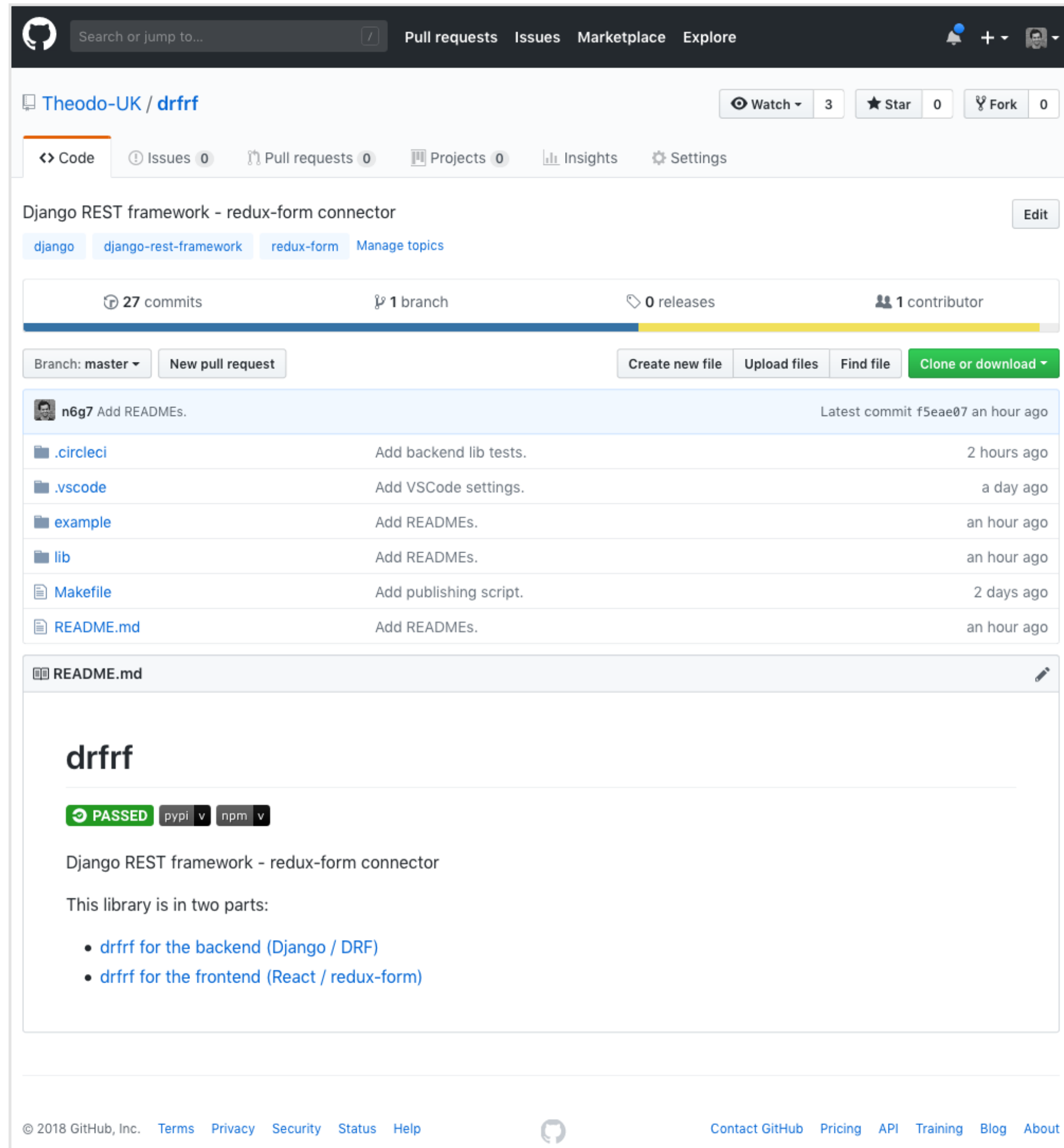
Go

0 of 2 selected

<input type="checkbox"/>	CART ITEM	AMOUNT	CREATED AT
<input type="checkbox"/>	<b>cartitem:3ba3d3</b>	123	Sept. 26, 2018, 6:34 p.m.
<input type="checkbox"/>	<b>cartitem:6b385e</b>	12	Sept. 26, 2018, 6:19 p.m.

2 cart items





DRF mixins for:

Creation validation

Update validation

Redux-form helper

# Thank you!

 /n6g7    /n4ng5l   nathang@theodo.co.uk