By **Vitor Freitas**

I'm a passionate software developer and researcher from Brazil, currently living in Finland. I write about Python, Django and Web Development on a weekly basis. Read more.

TUTORIAL

Advanced Form Rendering with Django Crispy Forms

Nov 28, 2018 10 minutes read 22 comments 39,526 views

(Picture: https://www.pexels.com/photo/people-in-front-of-macbook-pro-1089550/)

[Django 2.1.3 / Python 3.6.5 / Bootstrap 4.1.3]

In this tutorial we are going to explore some of the Django Crispy Forms features to handle advanced/custom forms rendering. This blog post started as a discussion in our community forum, so I decided to compile the insights and solutions in a blog post to benefit a wider audience.

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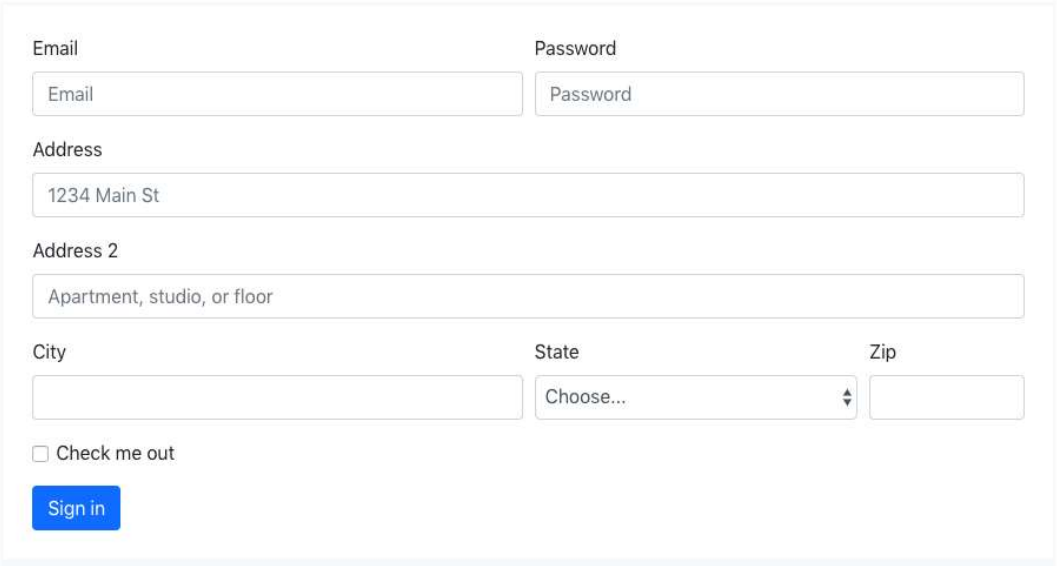
Introduction

Throughout this tutorial we are going to implement the following Bootstrap 4 form using Django APIs:



This was taken from Bootstrap 4 official documentation as an example of how to use form rows.

NOTE!

The examples below refer to a `base.html` template. Consider the code below:

base.html

```
<!doctype html>
<html lang="en">
<head>
  <meta charset="utf-8">
  <meta name="viewport" content="width=device-width, initial-scale=1, shri
  <link rel="stylesheet" href="https://stackpath.bootstrapcdn.com/bootstra
</head>
<body>
  <div class="container">
    {% block content %}
    {% endblock %}
  </div>
</body>
</html>
```

Installation

Install it using pip:

```
pip install django-crispy-forms
```

Add it to your `INSTALLED_APPS` and select which styles to use:

settings.py

```
INSTALLED_APPS = [
    ...

    'crispy_forms',
]

CRISPY_TEMPLATE_PACK = 'bootstrap4'
```

For detailed instructions about how to install `django-crispy-forms`, please refer to this tutorial: [How to Use Bootstrap 4 Forms With Django]

Basic Form Rendering

The Python code required to represent the form above is the following:

```
from django import forms

STATES = (
    ('', 'Choose...'),
    ('MG', 'Minas Gerais'),
    ('SP', 'Sao Paulo'),
    ('RJ', 'Rio de Janeiro')
)

class AddressForm(forms.Form):
    email = forms.CharField(widget=forms.TextInput(attrs={'placeholder':
    password = forms.CharField(widget=forms.PasswordInput())
    address_1 = forms.CharField(
        label='Address',
        widget=forms.TextInput(attrs={'placeholder': '1234 Main St'})
    )
    address_2 = forms.CharField(
        widget=forms.TextInput(attrs={'placeholder': 'Apartment, studio, 
    )
    city = forms.CharField()
    state = forms.ChoiceField(choices=STATES)
    zip_code = forms.CharField(label='Zip')
    check_me_out = forms.BooleanField(required=False)
```

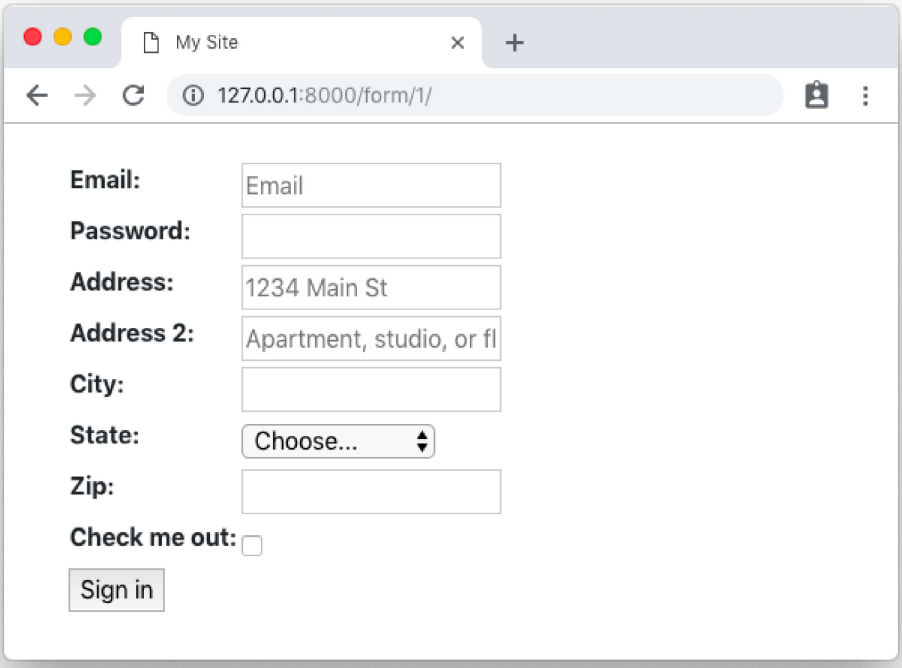
In this case I'm using a regular `Form`, but it could also be a `ModelForm` based on a Django model with similar fields. The `state` field and the

`STATES` choices could be either a foreign key or anything else. Here I'm just using a simple static example with three Brazilian states.

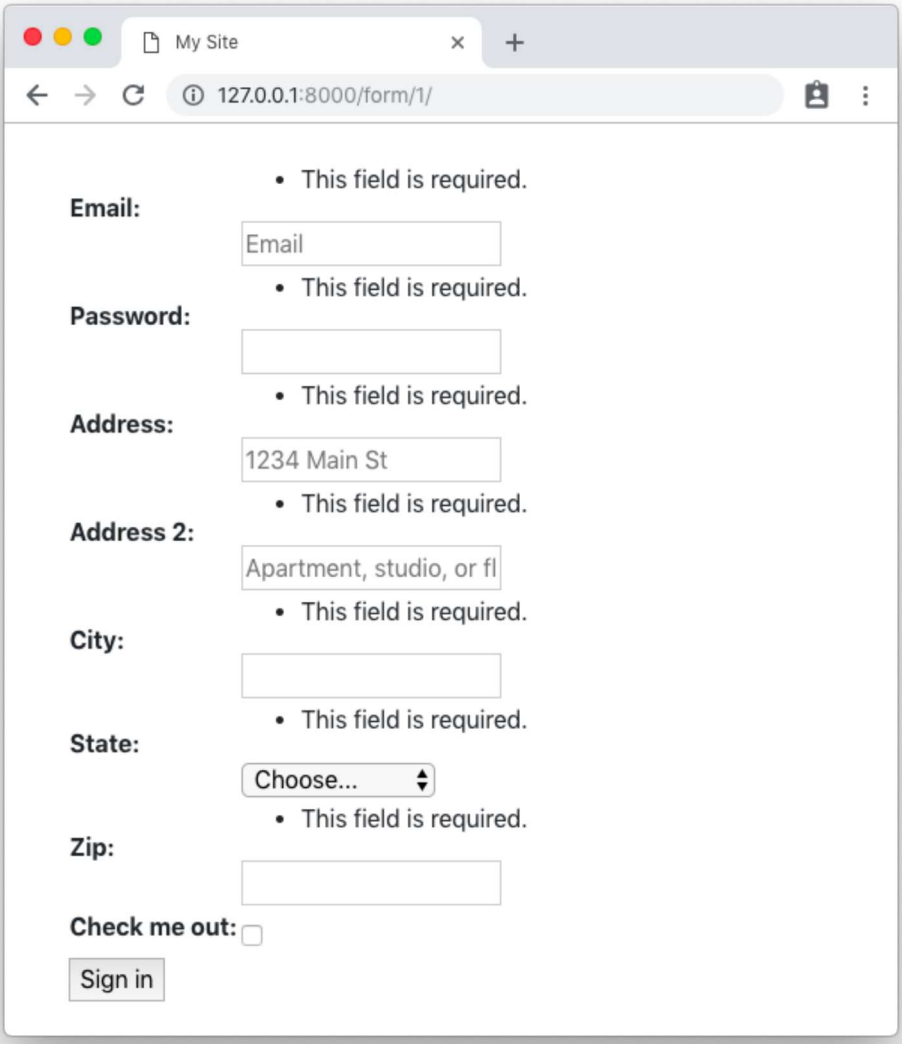
Template:

```
{% extends 'base.html' %}

{% block content %}
  <form method="post">
    {% csrf_token %}
    <table>{{ form.as_table }}</table>
    <button type="submit">Sign in</button>
  </form>
{% endblock %}
```

Rendered HTML:



Rendered HTML with validation state:



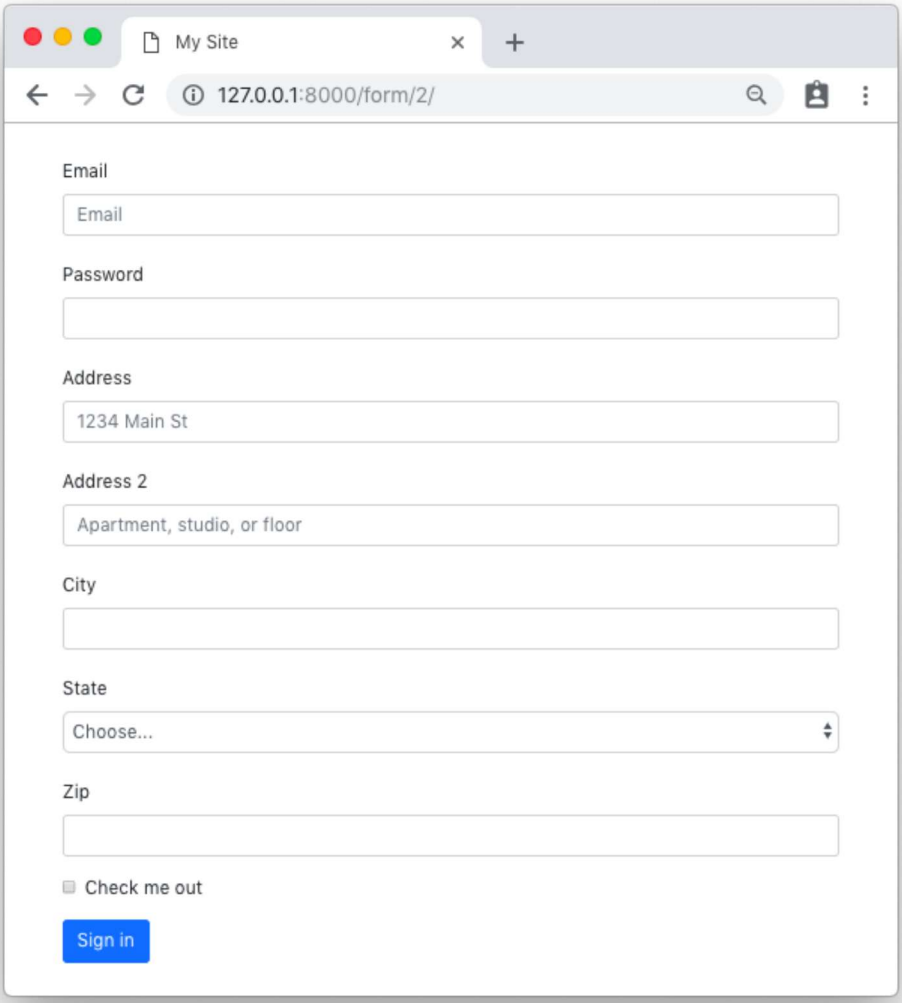
Basic Crispy Form Rendering

Same form code as in the example before.

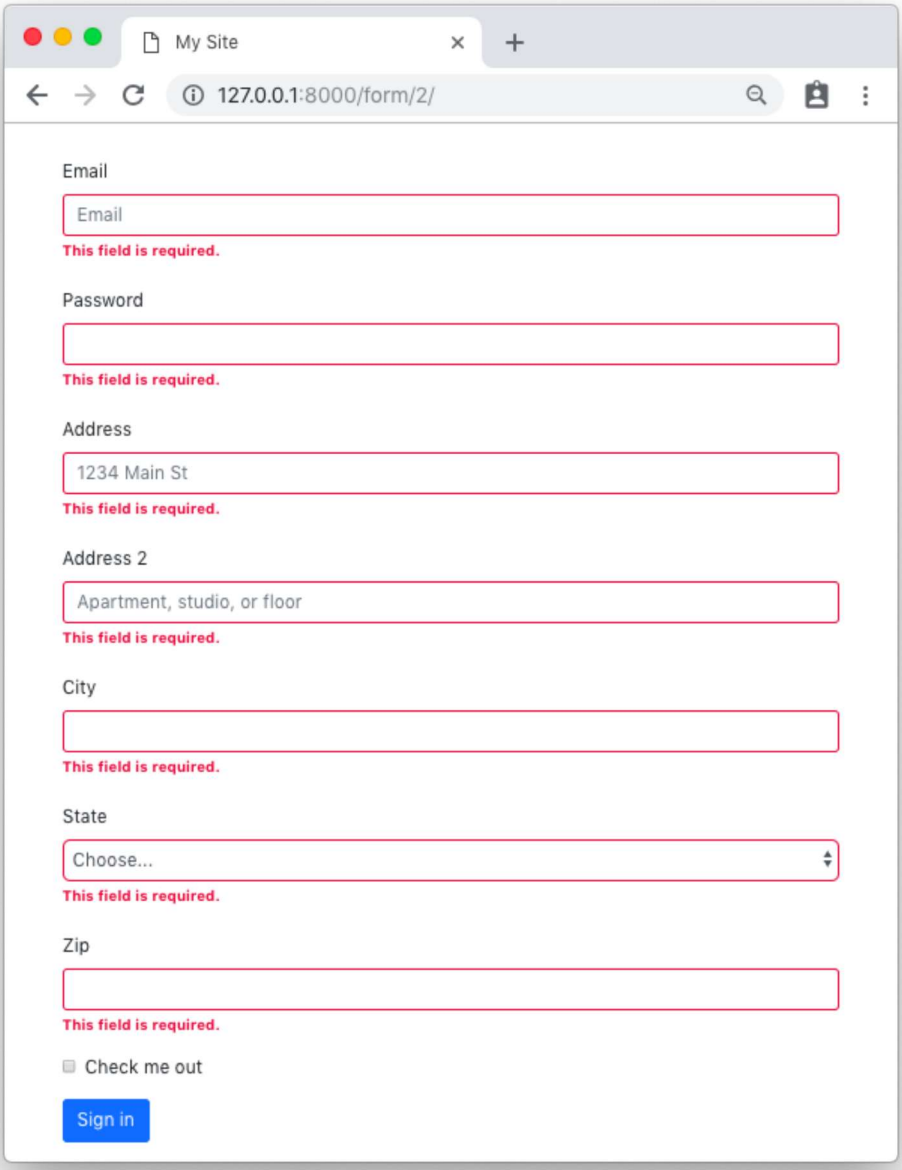
Template:

```
{% extends 'base.html' %}

{% load crispy_forms_tags %}

{% block content %}
  <form method="post">
    {% csrf_token %}
    {{ form|crispy }}
    <button type="submit" class="btn btn-primary">Sign in</button>
  </form>
{% endblock %}
```

Rendered HTML:



Rendered HTML with validation state:



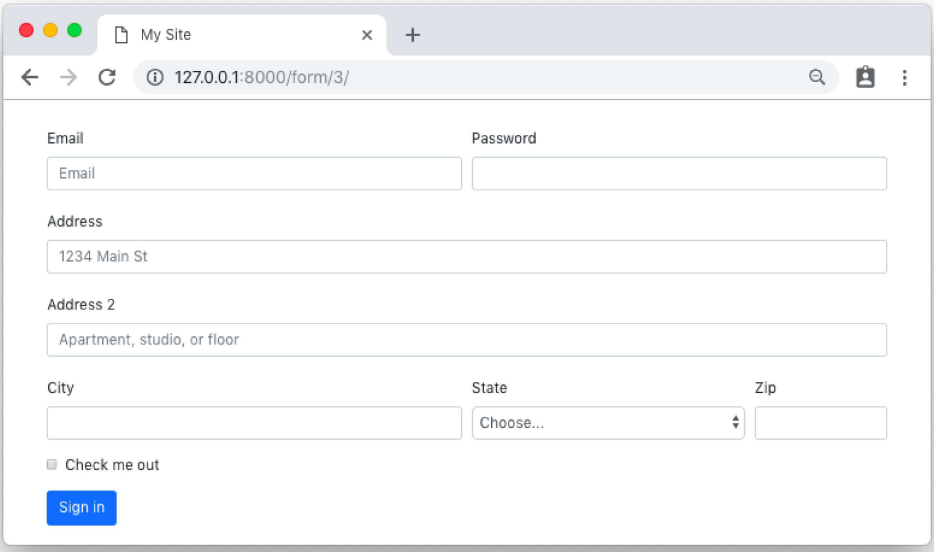
Custom Fields Placement with Crispy Forms

Same form code as in the first example.

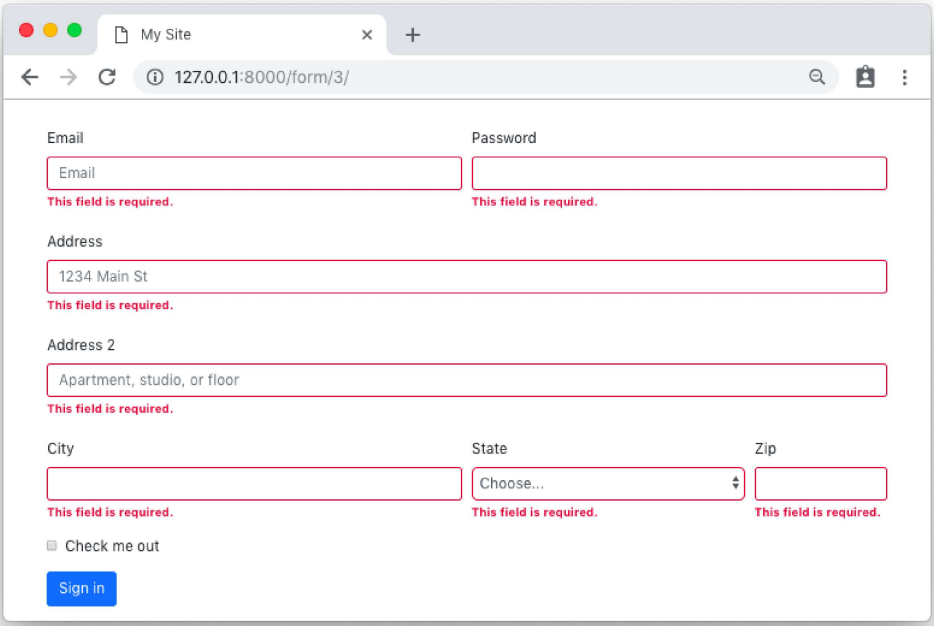
Template:

```
{% extends 'base.html' %}

{% load crispy_forms_tags %}

{% block content %}
  <form method="post">
    {% csrf_token %}
    <div class="form-row">
      <div class="form-group col-md-6 mb-0">
        {{ form.email|as_crispy_field }}
      </div>
      <div class="form-group col-md-6 mb-0">
        {{ form.password|as_crispy_field }}
      </div>
    </div>
    {{ form.address_1|as_crispy_field }}
    {{ form.address_2|as_crispy_field }}
    <div class="form-row">
      <div class="form-group col-md-6 mb-0">
        {{ form.city|as_crispy_field }}
      </div>
      <div class="form-group col-md-4 mb-0">
        {{ form.state|as_crispy_field }}
      </div>
      <div class="form-group col-md-2 mb-0">
        {{ form.zip_code|as_crispy_field }}
      </div>
    </div>
    {{ form.check_me_out|as_crispy_field }}
    <button type="submit" class="btn btn-primary">Sign in</button>
  </form>
{% endblock %}
```

Rendered HTML:



Rendered HTML with validation state:



Crispy Forms Layout Helpers

We could use the crispy forms layout helpers to achieve the same result as above. The implementation is done inside the form `__init__` method:

forms.py

```
from django import forms
from crispy_forms.helper import FormHelper
from crispy_forms.layout import Layout, Submit, Row, Column

STATES = (
    ('', 'Choose...'),
    ('MG', 'Minas Gerais'),
    ('SP', 'Sao Paulo'),
    ('RJ', 'Rio de Janeiro')
)

class AddressForm(forms.Form):
    email = forms.CharField(widget=forms.TextInput(attrs={'placeholder':
    password = forms.CharField(widget=forms.PasswordInput())
    address_1 = forms.CharField(
        label='Address',
        widget=forms.TextInput(attrs={'placeholder': '1234 Main St'})
    )
    address_2 = forms.CharField(
        widget=forms.TextInput(attrs={'placeholder': 'Apartment, studio, (
    )
    city = forms.CharField()
    state = forms.ChoiceField(choices=STATES)
    zip_code = forms.CharField(label='Zip')
    check_me_out = forms.BooleanField(required=False)

    def __init__(self, *args, **kwargs):
        super().__init__(*args, **kwargs)
        self.helper = FormHelper()
        self.helper.layout = Layout(
```

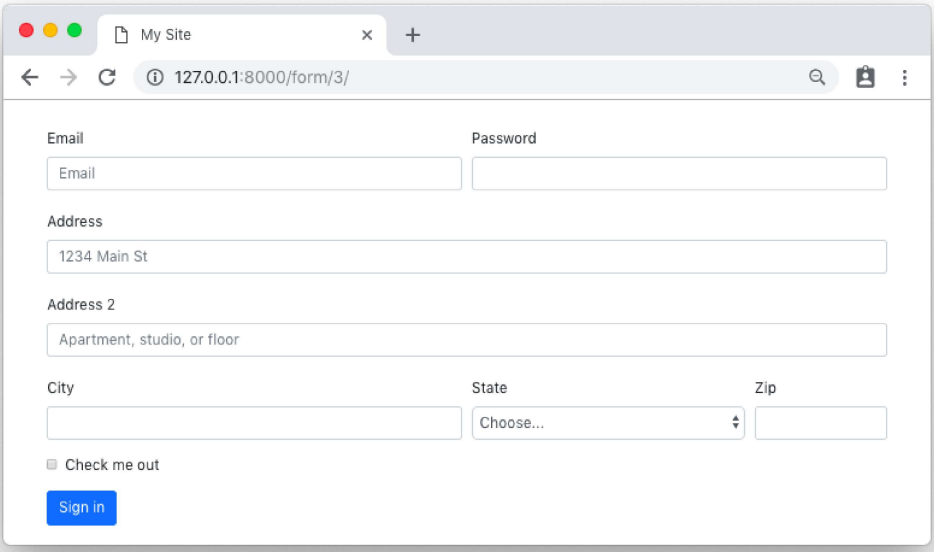
```
            Row(
                Column('email', css_class='form-group col-md-6 mb-0'),
                Column('password', css_class='form-group col-md-6 mb-0'),
                css_class='form-row'
            ),
            'address_1',
            'address_2',
            Row(
                Column('city', css_class='form-group col-md-6 mb-0'),
                Column('state', css_class='form-group col-md-4 mb-0'),
                Column('zip_code', css_class='form-group col-md-2 mb-0'),
                css_class='form-row'
            ),
            'check_me_out',
            Submit('submit', 'Sign in')
        )
```

The template implementation is very minimal:

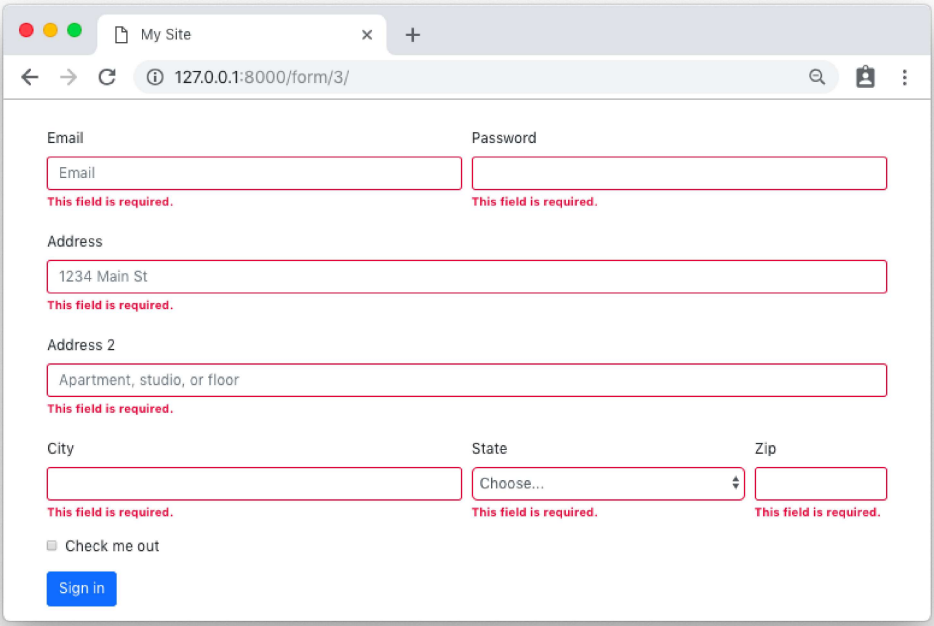
```
{% extends 'base.html' %}

{% load crispy_forms_tags %}

{% block content %}
  {% crispy form %}
{% endblock %}
```

The end result is the same.

Rendered HTML:

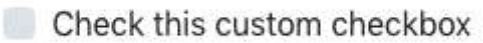


Rendered HTML with validation state:



Custom Crispy Field

You may also customize the field template and easily reuse throughout your application. Let's say we want to use the [custom Bootstrap 4 checkbox]:



From the official documentation, the necessary HTML to output the input above:

```
<div class="custom-control custom-checkbox">
  <input type="checkbox" class="custom-control-input" id="customCheck1">
  <label class="custom-control-label" for="customCheck1">Check this custor
</div>
```

Using the crispy forms API, we can create a new template for this custom field in our "templates" folder:

custom_checkbox.html

```
{% load crispy_forms_field %}

<div class="form-group">
  <div class="custom-control custom-checkbox">
    {% crispy_field field 'class' 'custom-control-input' %}
    <label class="custom-control-label" for="{{ field.id_for_label }}">{{
  </div>
</div>
```

Now we can create a new crispy field, either in our **forms.py** module or in a new Python module named **fields.py** or something.

forms.py

```
from crispy_forms.layout import Field

class CustomCheckbox(Field):
    template = 'custom_checkbox.html'
```

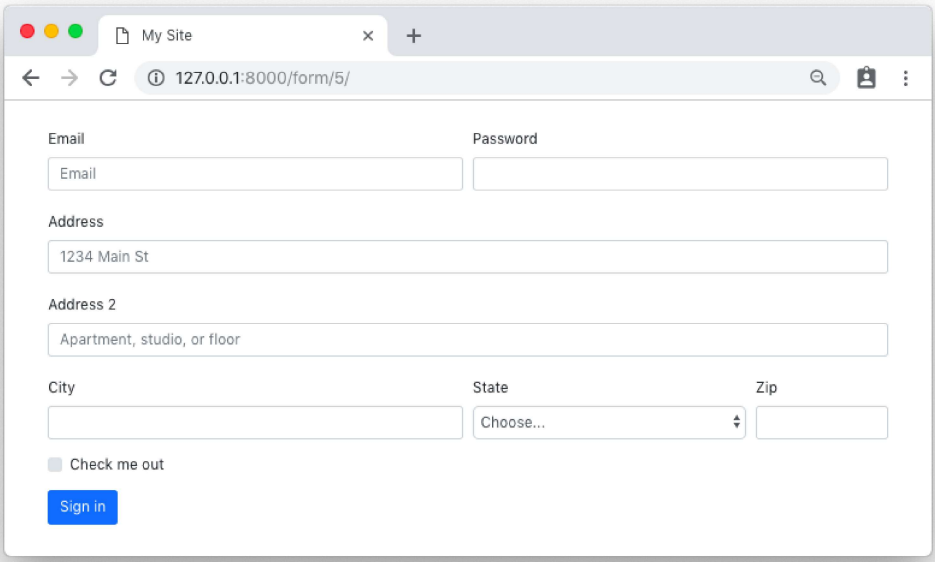
We can use it now in our form definition:

forms.py

```
class CustomFieldForm(AddressForm):
    def __init__(self, *args, **kwargs):
        super().__init__(*args, **kwargs)
        self.helper = FormHelper()
        self.helper.layout = Layout(
            Row(
                Column('email', css_class='form-group col-md-6 mb-0'),
                Column('password', css_class='form-group col-md-6 mb-0'),
                css_class='form-row'
            ),
            'address_1',
            'address_2',
            Row(
                Column('city', css_class='form-group col-md-6 mb-0'),
                Column('state', css_class='form-group col-md-4 mb-0'),
                Column('zip_code', css_class='form-group col-md-2 mb-0'),
                css_class='form-row'
            ),
            CustomCheckbox('check_me_out'),  # <-- Here
            Submit('submit', 'Sign in')
        )
```

(PS: the `AddressForm` was defined here and is the same as in the previous example.)

The end result:



Conclusions

There is much more Django Crispy Forms can do. Hopefully this tutorial gave you some extra insights on how to use the form helpers and layout classes. As always, the official documentation is the best source of information:

Django Crispy Forms layouts docs

Also, the code used in this tutorial is available on GitHub at github.com/sibtc/advanced-crispy-forms-examples.

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[How to Implement Grouped Model Choice Field]

[How to Use Bootstrap 4 Forms With Django]

django bootstrap4 bs4 crispy-forms forms

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Eric Kiser • 5 months ago

First I love your tutorials on Django, now my question is how do you use "as_crispy_field" with a filefield or imagefield?

2 ^ | v • Reply • Share ›

John ➚ Eric Kiser • 8 days ago

Eric, it is the same as other fields.
I tried it and it works for me. If yours is not working then maybe something is wrong.
You can put the error you get let's try to help you with it.

^ | v • Reply • Share ›

Tonel Daclan • 4 months ago

How do I automatically populate zipcode (like a default zipcode) when a state is chosen?

2 ^ | v • Reply • Share ›

Dhiraj Devkota • 4 months ago

thank you very much for helpful tutorial

1 ^ | v • Reply • Share ›

Marlon Leite • 5 months ago

It may be worth mentioning to improve validation with bootstrap 4.
Use:

```
def __init__(self, *args, **kwargs):
super().__init__(*args, **kwargs)
self.helper = FormHelper()
self.helper.attrs = {'novalidate': ''}
```

1 ^ | v • Reply • Share ›

Shahid • 8 months ago

Please putting a video on the youtube.

1 • Reply • Share ›

C W ➚ Shahid • 7 months ago

it's part of the authentication series.

• Reply • Share ›

Shahid ➚ C W • 7 months ago

I've need views.py

• Reply • Share ›

John • 8 days ago

Vitor you are the best.
You make Django simpler than the way its
Thank you for this great tutorial.

• Reply • Share ›

Amrish Mishra • 3 months ago

Hi vitor,
I admire the way you spent time on sharing these so useful django implementation. Simply loved it.

I have one question to ask. If possible please get one blog post over this.

Possible ways to access request object in django signals and Modes

^ | v • Reply • Share ›

Marcos Freccia • 4 months ago

Hi,
I am following your tutorial and so far it works really well, except when I try to add input-groups such as the euro sign (€). It renders successfully, but in an extra column and I don't know what else should I do.

Would you be able to post a quick example on how to overcome this?

Regards,
Marcos Freccia

^ | v • Reply • Share ›

김유민 • 6 months ago

Thank you from South Korea. :D

^ | v • Reply • Share ›

LongQi Zhang • 6 months ago

It's very clear and good formatted. Thanks.

^ | v • Reply • Share ›

Matt • 7 months ago

Does anyone know why il am getting :

TemplateDoesNotExist:
bootstrap4/uni_form.html
???

Reply • Share ›

Fabian Braun ➚ Matt • 3 months ago

Have you done this in `settings.py`:

```
CRISPY_TEMPLATE_PACK = 'bootstrap4'
```

Reply • Share ›

C W ➚ Matt • 7 months ago

I am getting the same error: settings.py points to the new crispy form, but it looks like it is searching for a deprecated form. There are notes in the crispy docs to add the import here but it shouldn't be needed-> from crispy_forms.helper import FormHelper

Reply • Share ›

Ian • 7 months ago

Good tutorial. I have used crispy forms for 4 years and never appreciated that you did not need the helper if all you wanted to do was render the from with the crispy tag.

Reply • Share ›

Fernandes Macedo • 8 months ago

acho que o melhor form já visto.

Reply • Share ›

Ck No • 8 months ago

Thank you for your easy explanation.

Reply • Share ›

Oscom41 • 8 months ago

Great tutorial as always! Can you please show

Great tutorial as always! Can you please show how is it done for a ModelMultipleChoiceField with CheckboxSelectMultiple widget with each checkbox as bootstrap4 custom checkbox? I'm struggling with template html and CustomField. Thanks!

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