Rendering Flask-WTF forms in templates

In this lesson, we will learn how to render the forms that we created in our last lesson on the front-end.

WE'LL COVER THE FOLLOWING

To render the form, we first need to return it from a **view** to the **template**.

Modify `login` view in `app.py`

Now let's modify the application module to use the forms module that we just created.

Import `LoginForm`

Let's first import the `LoginForm` from the forms module `forms.py`.

```
from forms import LoginForm
```

Create an object of `LoginForm` in the `login` view

We will then create an object of this form inside the `login` route.

We will then create an object of this form inside the `login` route.

```
@app.route("/login", methods=["GET", "POST"])
def login():
    form = LoginForm()
```

Return the form to the template

This form will be passed to the `render_template` function as a named argument.

```
return render_template("login.html", form = form)
```

Complete implementation of `app.py`

The complete implementation of the modified `app.py` is given below:

app.py

```
from flask import Flask, render_template
from forms import LoginForm
app = Flask(__name__)

users = {
    "archie.andrews@email.com": "football4life",
    "veronica.lodge@email.com": "fashiondiva"
}

@app.route("/")
def home():
    return render_template("home.html")

@app.route("/login", methods=["GET", "POST"])
def login():
    form = LoginForm()
    return render_template("login.html", form = form)

if __name__ == "__main__":
    app.run(debug=True, host="0.0.0.0", port=3000)
```

Modifying `login.html`

Instead of the `HTML` form, we will be rendering the `form` instance of `LoginForm` that we passed to the template.

Adding form fields to the template

We can use **Jinja's** syntax to render the form fields

We can use **Jinja 3** syntax to render the form fields.

The following syntax will render the input **field**:

```
{{ form.field_name }}
```

While the following line will output the **label** for the form field:

```
{{ form.field_name.label }}
```

In the `LoginForm`, we had three fields:

- `email`
- `password`
- `submit`

Replacing the `HTML` code from the `login.html` with our new syntax:

```
<form action="{{url_for('login')}}" method="POST">
    {{ form.email.label }}: <br>
    {{ form.email }}
    <br>
    {{ form.password.label }}: <br>
    {{ form.password }}
    <br>
    {{ form.submit }}
</form>
```

Adding a `csrf_token` in the form

The `FlaskForm` class that we inherited `LoginForm` from, gives us a hidden field for `csrf_token`. The `csrf_token` prevents against **Cross-Site Request Forgery**. Let's include this hidden field in the template as well.

```
<form action="{{url_for('login')}}" method="POST">
    {{ form.email.label }}: <br>
    {{ form.email }}
    <br>
    {{ form.password.label }}: <br>
    {{ form.password }}
    <br>
    {{ form.csrf_token }}
    {{ form.submit }}
</form>
```

Complete implementation of `login.html`

The complete implementation of the modified `login.html` is given below:

login.html

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

{% block title %}
Login Page
{% endblock %}

{% block content %}
<h1>Login</h1>

<form action="{{url_for('login')}}" method="POST">
    {{ form.email.label }}: <br>
    {{ form.email }}
    <br>
    {{ form.password.label }}: <br>
    {{ form.password }}
    <br>
    {{ form.csrf_token }}
    {{ form.submit }}
</form>

<hr>
{% endblock %}
```

Complete implementation of the application

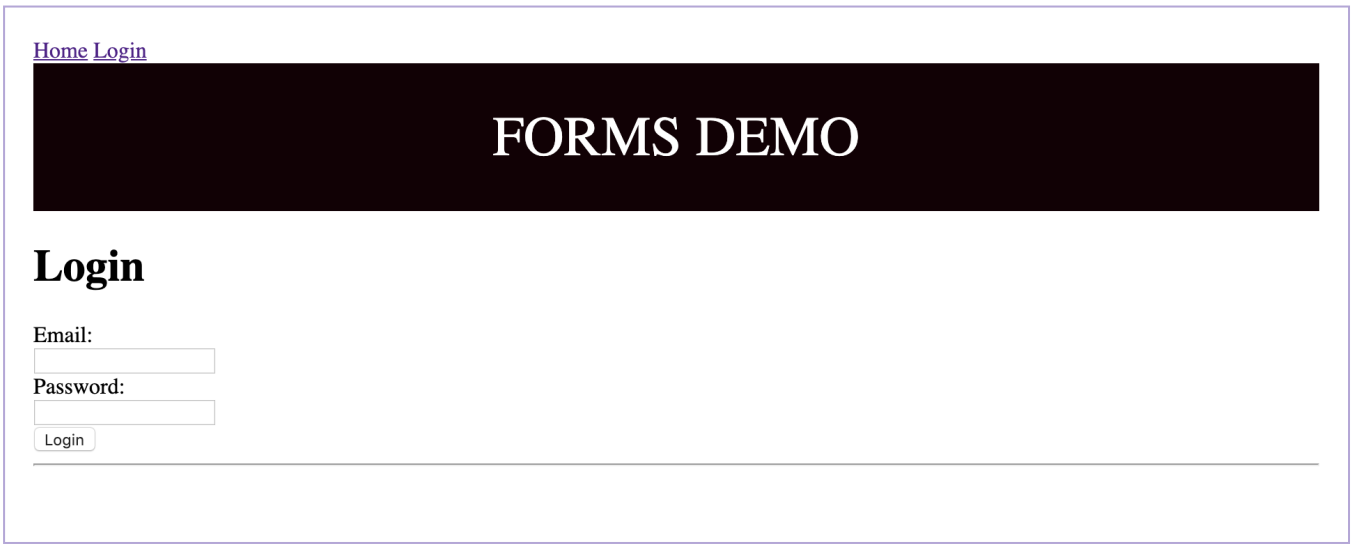
```
#header {
  padding: 30px;
  text-align: center;
  background: #140005;
  color: white;
  font-size: 40px;
}
#footer {
   position: fixed;
   width: 100%;
   background-color: #BBC4C2;
   color: white;
   text-align: center;
   left: 0;
   bottom:0;
}
ul {
  list-style-type: none;
  margin: 0;
  padding: 0;
}

li {
  display: inline;
}
```

Explanation

In the above complete application, when we go to the `/login` route, we can see that the `LoginForm` has successfully rendered as an `HTML` form.

> 📌 **Note:** At this point, the `login` *view* ***only*** renders the form. Both the `GET` and `POST` requests send the same response.

The login form should look like this:



Moreover, you will have noticed that, in `app.py`, at **line 5**, we have added the following line:

```
app.config['SECRET_KEY'] = 'dfewfew123213rwdsgert34tgfd1234trgf'
```

> 🖊 **Try it Yourself:** *To find out why we included this, try commenting the line and re-running the application.*

If you tried running the application without that line, you would have noticed that we got the following error at the `/login` route:

KeyError

```
KeyError: 'A secret key is required to use CSRF.'
```

Traceback (most recent call last)

File "/usr/local/lib/python3.5/dist-packages/flask/app.py", line *2463*, in `__call__`

```
return self.wsgi_app(environ, start_response)
```

File "/usr/local/lib/python3.5/dist-packages/flask/app.py", line *2449*, in `wsgi_app`

```
response = self.handle_exception(e)
```

File "/usr/local/lib/python3.5/dist-packages/flask/app.py", line *1866*, in `handle_exception`

```
reraise(exc_type, exc_value, tb)
```

File "/usr/local/lib/python3.5/dist-packages/flask/_compat.py", line *39*, in `reraise`

We have encountered a **KeyError** because the **CSRF** feature needs a ***secret key*** for it to work. By default, `Flask` looks for this ***secret key*** in the applications `SECRET_KEY` variable. Therefore, we set this key to a string of random characters at **line 5.**

> ⚠ **Disclaimer:** During production, this key should not be shared with any third-party entity as it will compromise the security of the system.

Now, let's move on to the next lesson and find out how data gets validated in `Flask-WTF` and how we can handle the errors.