Django Login

Summary: in this tutorial, you'll learn how to create a Django login form that allows users to log in using a username and password.

Create a new application

First, create a new application called `users` by executing the `startapp` command:

```
django-admin startapp users
```

The project directory will look like this:

```
├── blog
├── db.sqlite3
├── manage.py
├── mysite
├── static
├── templates
└── users
```

Second, register the `users` application in the installed apps of the `settings.py` of the project:

```
INSTALLED_APPS = [
    'django.contrib.admin',
    'django.contrib.auth',
    'django.contrib.contenttypes',
    'django.contrib.sessions',
```

```
    'django.contrib.messages',
    'django.contrib.staticfiles',
    # local
    'blog.apps.BlogConfig',
    'users.apps.UsersConfig'
]
```

Third, create a new `urls.py` file inside the `users` app with the following code:

```
from django.urls import path
from . import views

urlpatterns = []
```

Finally, include the `urls.py` of the `users` application in the `urls.py` of the project by using the `include()` function:

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

urlpatterns = [
    path('admin/', admin.site.urls),
    path('',include('blog.urls')),
    path('',include('users.urls'))
]
```

Create a login form

First, create a login URL in the `urls.py` of the `users` application:

```
from django.urls import path
from . import views

urlpatterns = [
    path('login/', views.sign_in, name='login'),
]
```

Second, create a `forms.py` file in the `users` application and define the `LoginForm` that inherits from the `Form` class:

```
from django import forms


class LoginForm(forms.Form):
    username = forms.CharField(max_length=65)
    password = forms.CharField(max length=65, widget=forms.PasswordInput)
```

The `LoginForm` has two fields username and password.

Third, create the `sign_in()` function in the `views.py` file of the `users` application to render the `login.html` template:

```
from django.shortcuts import render
from .forms import LoginForm


def sign_in(request):
    if request.method == 'GET':
        form = LoginForm()
        return render(request, 'users/login.html', {'form': form})
```

Fourth, create the `templates/users` directory inside the `users` application:

```
mkdir templates
cd templates
mkdir users
```

Fifth, create the `login.html` template inside the `templates/users` directory that extends the `base.html` template:

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

{% block content %}
```

```
<form method="POST" novalidate>
        {% csrf_token %}
        <h2>Login</h2>
        {{form.as_p}}
        <input type="submit" value="Login" />
</form>

{% endblock content%}
```

Sixth, open the login URL, and you'll see the login form:

```
http://127.0.0.1:8000/login
```

If you enter a username/password and click the Login button, you'll get an error because we haven't added the code that handles the HTTP POST request yet.

Seventh, modify the `sign_in()` function to handle the login process:

```
from django.shortcuts import render, redirect
from django.contrib import messages
from django.contrib.auth import login, authenticate
from .forms import LoginForm


def sign in(request):

    if request.method == 'GET':
        form = LoginForm()
```

```
        return render(request,'users/login.html', {'form': form})

    elif request.method == 'POST':
        form = LoginForm(request.POST)

        if form.is_valid():
            username = form.cleaned_data['username']
            password = form.cleaned_data['password']
            user = authenticate(request,username=username,password=password)
            if user:
                login(request, user)
                messages.success(request,f'Hi {username.title()}, welcome back!')
                return redirect('posts')

        # form is not valid or user is not authenticated
        messages.error(request,f'Invalid username or password')
        return render(request,'users/login.html',{'form': form})
```

How it works.

First, import the `authenticate` and `login` function from the `django.contrib.auth` module:

```
from django.contrib.auth import login, authenticate
```

The `authenticate()` function verifies a username and password. If the username and password are valid, it returns an instance of `User` class or `None` otherwise.

The `login()` function logs a user in. Technically, it creates a session id on the server and sends it back to the web browser in the form of a cookie.

In the subsequent request, the web browser sends the session id back to the web server, Django matches the cookie value with the session id and creates the `User` object.

Second, verify the username and password using the `authenticate()` function if the form is valid:

```
user = authenticate(request, username=username, password=password)
```

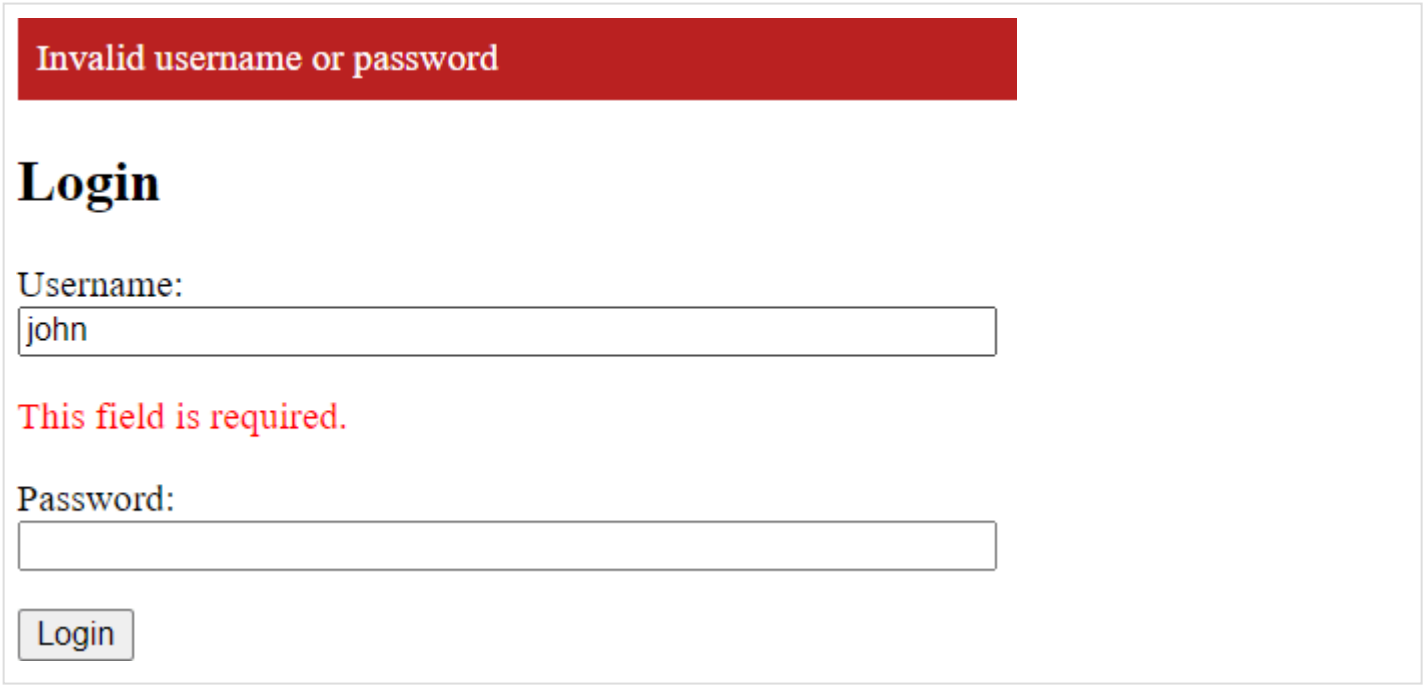
Third, log the user in, create a flash message, and redirect the user to the `posts` URL if the username and password are valid:

```
if user:
    login(request, user)
    messages.success(request,f'Hi {user.username.title()}, welcome back!')
    return redirect('posts')
```

Otherwise, create a flash error message and redirect the user back to the login page:

```
messages.error(request,f'Invalid username or password')
return render(request,'users/login.html')
```

If you enter a username without a password and click the Login button, you'll get the following error message:



However, if you enter the correct username/password, you'll be redirected to the post list page with a welcome message:

Add a Logout form

First, define a route for logging a user out:

```
from django.urls import path
from . import views

urlpatterns = [
    path('login/', views.sign_in, name='login'),
    path('logout/', views.sign_out, name='logout'),
]
```

Second, define the `sign_out()` function in the `views.py` file that handles the logout route:

```
from django.shortcuts import render, redirect
from django.contrib import messages
```

```
from django.contrib.auth import login, authenticate, logout
from .forms import LoginForm

def sign_in(request):

    if request.method == 'GET':
        form = LoginForm()
        return render(request,'users/login.html', {'form': form})

    elif request.method == 'POST':
        form = LoginForm(request.POST)

        if form.is_valid():
            username = form.cleaned_data['username']
            password=form.cleaned_data['password']
            user = authenticate(request,username=username,password=password)
            if user:
                login(request, user)
                messages.success(request,f'Hi {username.title()}, welcome back!')
                return redirect('posts')

        # either form not valid or user is not authenticated
        messages.error(request,f'Invalid username or password')
        return render(request,'users/login.html',{'form': form})



def sign_out(request):
    logout(request)
    messages.success(request,f'You have been logged out.')
    return redirect('login')
```

If you log in and access the login page, you'll still see the login form. Therefore, it's better to redirect the logged user to the post list instead if the user accesses the login page.

Third, modify the `sign_in()` function in the `views.py` of the `users` application:

```
def sign_in(request):
```

```
    if request.method == 'GET':
        if  request.user.is_authenticated:
            return redirect('posts')

        form = LoginForm()
        return render(request,'users/login.html', {'form': form})

    elif request.method == 'POST':
        form = LoginForm(request.POST)

        if form.is_valid():
            username = form.cleaned_data['username']
            password=form.cleaned_data['password']
            user = authenticate(request,username=username,password=password)
            if user:
                login(request, user)
                messages.success(request,f'Hi {username.title()}, welcome back!')
                return redirect('posts')

        # either form not valid or user is not authenticated
        messages.error(request,f'Invalid username or password')
        return render(request,'users/login.html',{'form': form})
```

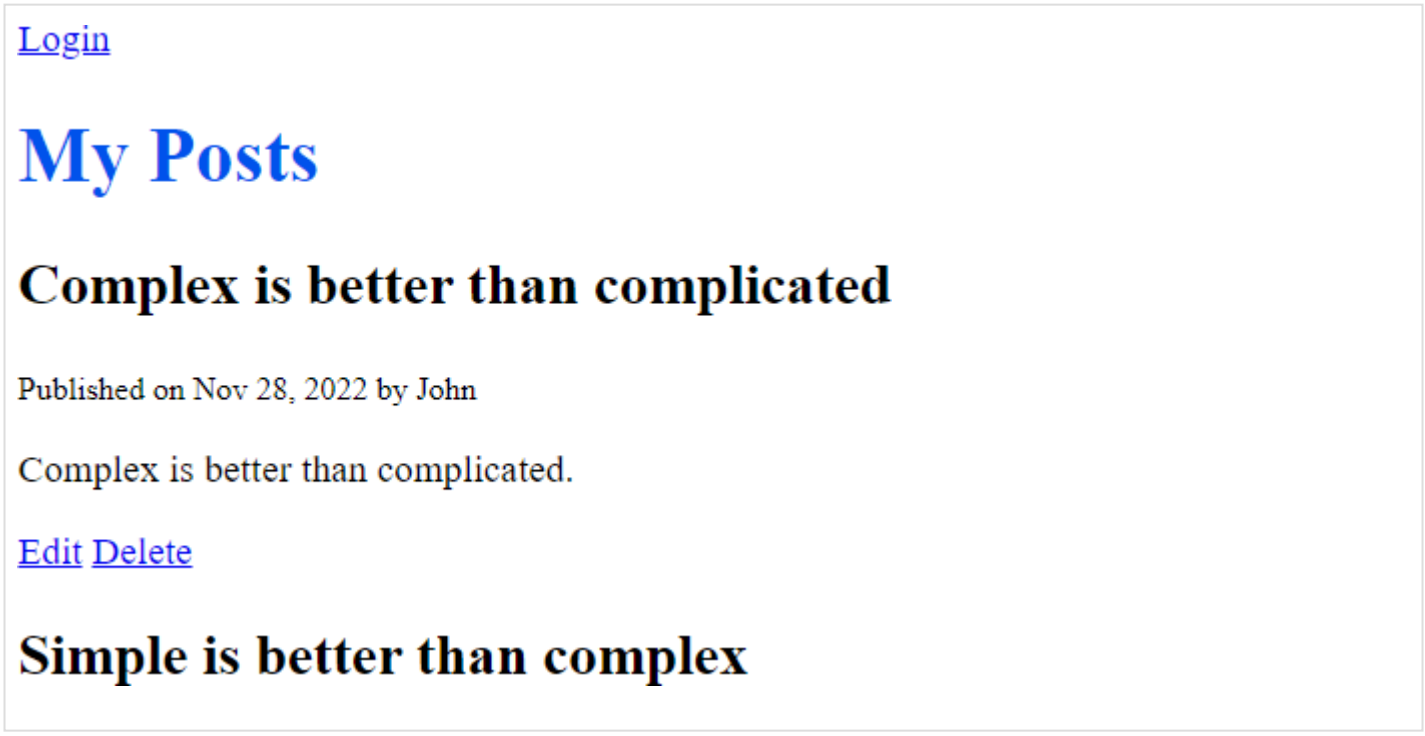
The the `request.user.is_authenticated` returns `True` if a user is logged in or `False` otherwise.

Fourth, modify the `base.html` template to include the logout link if the user is authenticated and the login link otherwise:

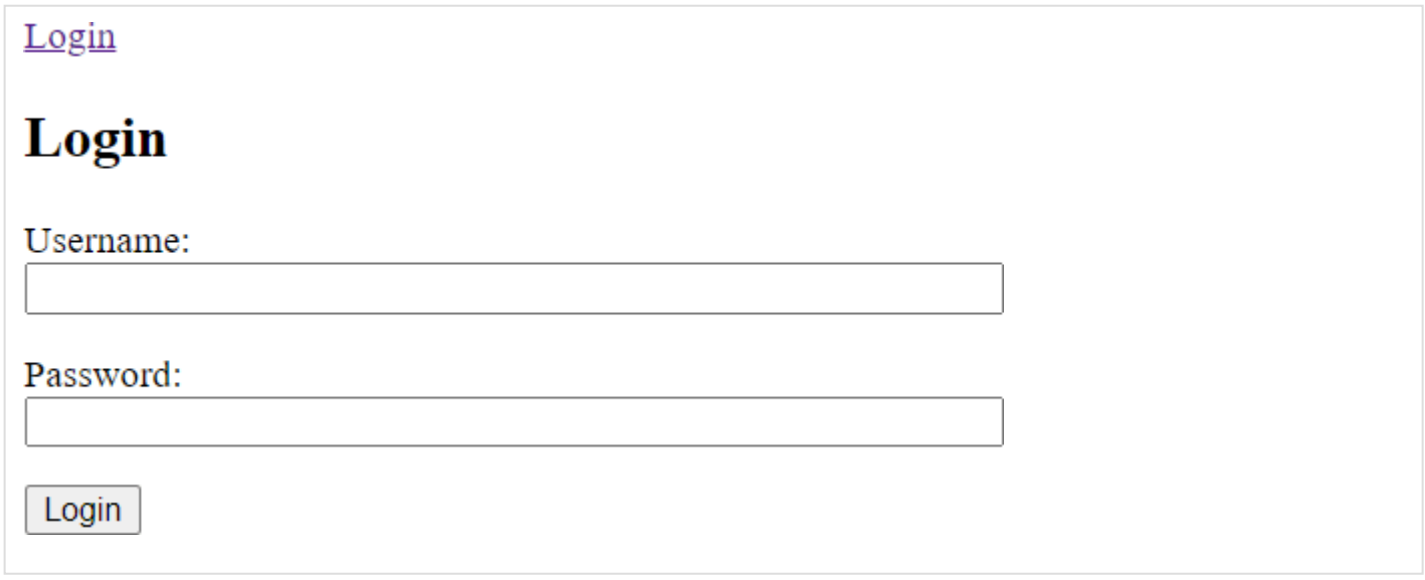
```
{%load static %}
<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="UTF-8" />
    <meta name="viewport" content="width=device-width, initial-scale=1.0" />
    <link rel="stylesheet" href="{% static 'css/style.css' %}" />
    <script src="{% static 'js/app.js' %}" defer></script>
    <title>My Site</title>
  </head>
```

```
  <body>
        <header>
                {%if request.user.is_authenticated %}
                        <span>Hi {{ request.user.username | title }}</span>
                        <a href="{% url 'logout' %}">Logout</a>
                {%else%}
                        <a href="{% url 'login' %}">Login</a>
                {%endif%}
        </header>
        <main>
                {% if messages %}
                        <div class="messages">
                        {% for message in messages %}
                                <div class="alert {% if message.tags %}alert-{{ messa
                                        {{ message }}
                                </div>
                        {% endfor %}
                        </div>
                {% endif %}

            {%block content%}
            {%endblock content%}
        </main>

  </body>
</html>
```

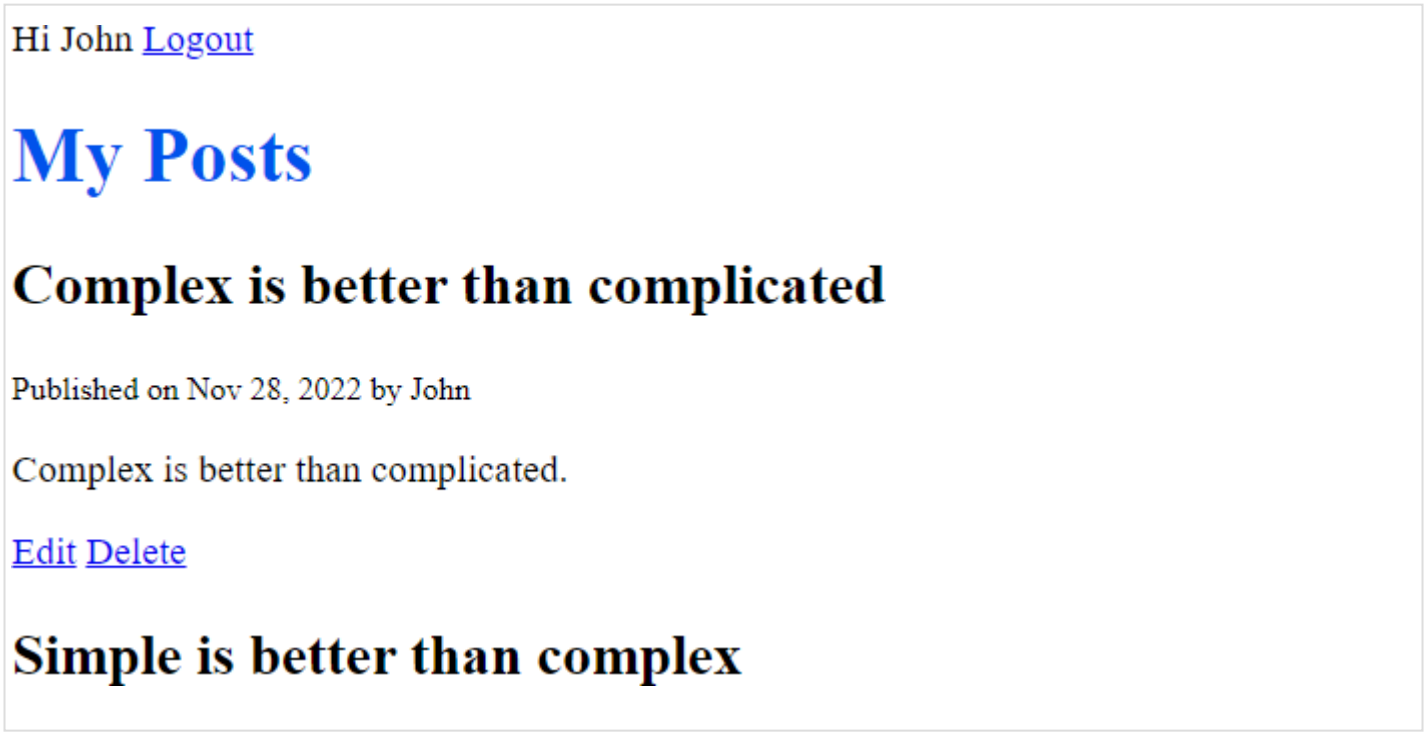
If you access the site, you'll see the login link:



When you click the login link, it'll open the login page:



If you enter the valid username and password and log in, you'll see a welcome message as well as the logout link:



If you click the logout link, it redirects to the login page:

Hiding the edit and delete links on the post list

If a user is logged in, the `request.user.is_authenticated` is `True` . Therefore, you can use this object to show and hide elements of the page whether the user is logged in or not.

For example, the following hides the editing and deleting links on the `blog/home.html` template if the user is authenticated:

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

{% block content %}
<h1>My Posts</h1>
        {% for post in posts %}
                <h2>{{ post.title }}</h2>
                <small>Published on {{ post.published_at | date:"M d, Y" }} by {{ pos
                <p>{{ post.content }}</p>

                {% if request.user.is_authenticated %}
                <p>
                        <a href="{% url 'post-edit' post.id %}">Edit</a>
                        <a href="{% url 'post-delete' post.id%}">Delete</a>
                </p>
                {% endif %}

        {% endfor %}
{% endblock content %}
```

Protecting the protected pages

Typically, you should allow authenticated users to access the creating, updating, and deleting post pages. To do that you can use Django's `login_required` decorator.

If a view function has the `login_required` decorator and an unauthenticated user attempts to run it, Django will redirect the user to the login page.

We'll protect the create, update, and delete post functions using the `login_required` decorator.

First, set the login URL in the `settings.py` of to the login URL:

```
LOGIN_URL = 'login'
```

If you don't do this, Django will redirect to the default login URL which is `accounts/login/` not `users/login` as we defined in this project.

Second, modify the `views.py` of the `blog` application by adding the `@login_required` decorator to the `create_post`, `edit_post`, and `delete_post` functions:

```
from django.shortcuts import render, redirect, get_object_or_404
from django.contrib import messages
from django.contrib.auth.decorators import login_required
from .models import Post
from .forms import PostForm


@login_required
def delete_post(request, id):
    post = get_object_or_404(Post, pk=id)
    context = {'post': post}

    if request.method == 'GET':
        return render(request, 'blog/post_confirm_delete.html', context)
    elif request.method == 'POST':
        post.delete()
        messages.success(request, 'The post has been deleted successfully.')
        return redirect('posts')


@login_required
def edit_post(request, id):
    post = get_object_or_404(Post, id=id)

    if request.method == 'GET':
        context = {'form': PostForm(instance=post), 'id': id}
        return render(request, 'blog/post_form.html', context)

    elif request.method == 'POST':
        form = PostForm(request.POST, instance=post)
        if form.is_valid():
            form.save()
            messages.success(
```

```
                request, 'The post has been updated successfully.')
            return redirect('posts')
        else:
            messages.error(request, 'Please correct the following errors:')
            return render(request, 'blog/post_form.html', {'form': form})


@login_required
def create_post(request):
    if request.method == 'GET':
        context = {'form': PostForm()}
        return render(request, 'blog/post_form.html', context)
    elif request.method == 'POST':
        form = PostForm(request.POST)
        if form.is_valid():
            form.save()
            messages.success(
                request, 'The post has been created successfully.')
            return redirect('posts')
        else:
            messages.error(request, 'Please correct the following errors:')
            return render(request, 'blog/post_form.html', {'form': form})


def home(request):
    posts = Post.objects.all()
    context = {'posts': posts}
    return render(request, 'blog/home.html', context)


def about(request):
    return render(request, 'blog/about.html')
```

If you open the create, update, or delete URL, for example:

```
http://127.0.0.1/post/create
```

It'll be redirected to the login page.

Summary

- Use `authenticate()` function to verify a user by username and password.
- Use `login()` function to log a user in.
- Use `logout()` function to log a user out.
- Use `request.user.is_authenticated` to check if the current user is authenticated.
- User `@login_required` decorator to protect pages from unauthenticated users.