Lab 6 Part (4)

Add a new app to the Newspaper Project

In this exercise we will continue working on the Newspaper project to create a new app called **articles** where users can view, create, update, and delete articles. Bootstrap will also be used to style the pages.

Step 1 – Create a new app

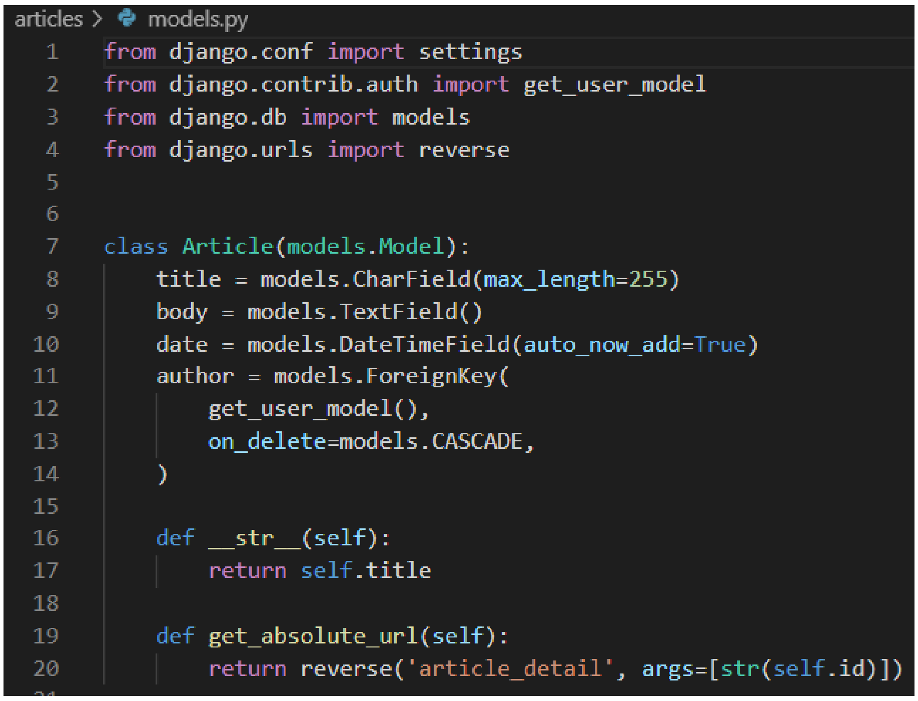
1. Creating a new **articles** app.
2. Open **settings.py** and register the **articles** app.

Step 2 – Create a new Database Model

Next up we define our database model which contains four fields: title, body, date, and author. Note that we are letting Django automatically set the time and date based on the **TIME_ZONE** setting in **settings.py**. For the author field we want to reference our custom user model **'users.CustomUser**' which we set in the **settings.py** file as **AUTH_USER_MODEL**.

We can reference our custom user module with the function **get_user_model**. And we also implement the best practices of defining a **get_absolute_url** from the beginning and a **__str__** method for viewing the model in our admin interface.

Code



articles > models.py

```python
from django.conf import settings
from django.contrib.auth import get_user_model
from django.db import models
from django.urls import reverse


class Article(models.Model):
    title = models.CharField(max_length=255)
    body = models.TextField()
    date = models.DateTimeField(auto_now_add=True)
    author = models.ForeignKey(
        get_user_model(),
        on_delete=models.CASCADE,
    )

    def __str__(self):
        return self.title

    def get_absolute_url(self):
        return reverse('article_detail', args=[str(self.id)])
```

Step 3 – Database Migrations

Next, we need to make a new migration file and then apply it to the database. Type the following two commands to migrate the database.

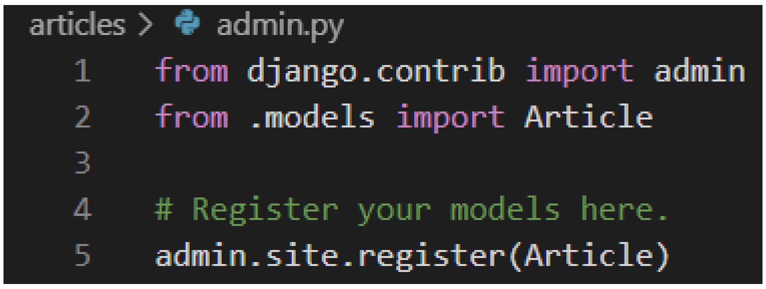
Command Line

```
python manage.py makemigrations articles
```

```
python manage.py migrate
```

Step 4 – Django Admin

Update **admin.py** with the code below so that our new model will be visible in Django Admin.



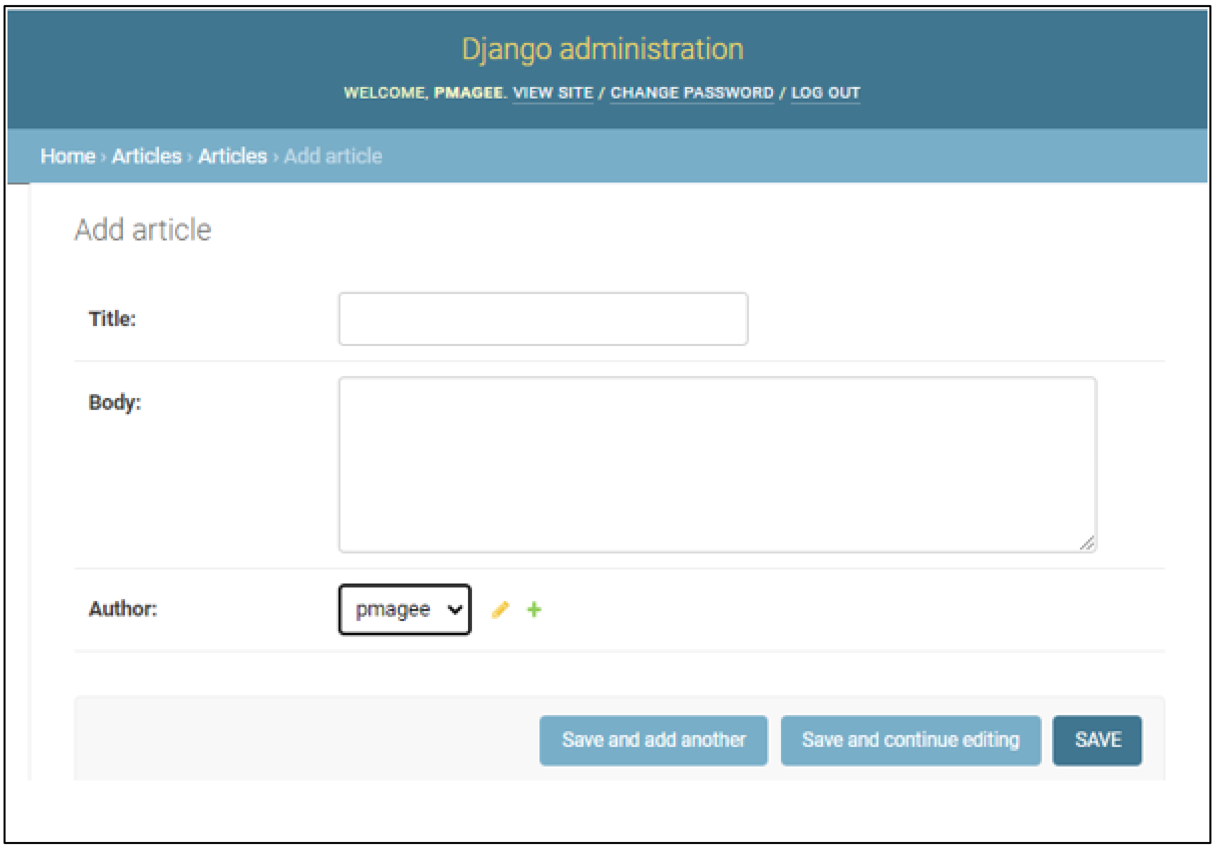
```python
from django.contrib import admin
from .models import Article

# Register your models here.
admin.site.register(Article)
```

Start the server running and navigate to http://127.0.0.1:8080/admin/ and log in.

Admin page

Click on “+ Add” next to “Articles” at the top of the page to create 3 articles and enter in some sample data. You will likely have three users available at this point: your superuser, and the two other accounts you created in an earlier exercise. Use your superuser account as the author of all three articles.

Admin articles add page


Django administration

WELCOME, PMAGEE. VIEW SITE / CHANGE PASSWORD / LOG OUT

Home › Articles › Articles › Add article

Add article

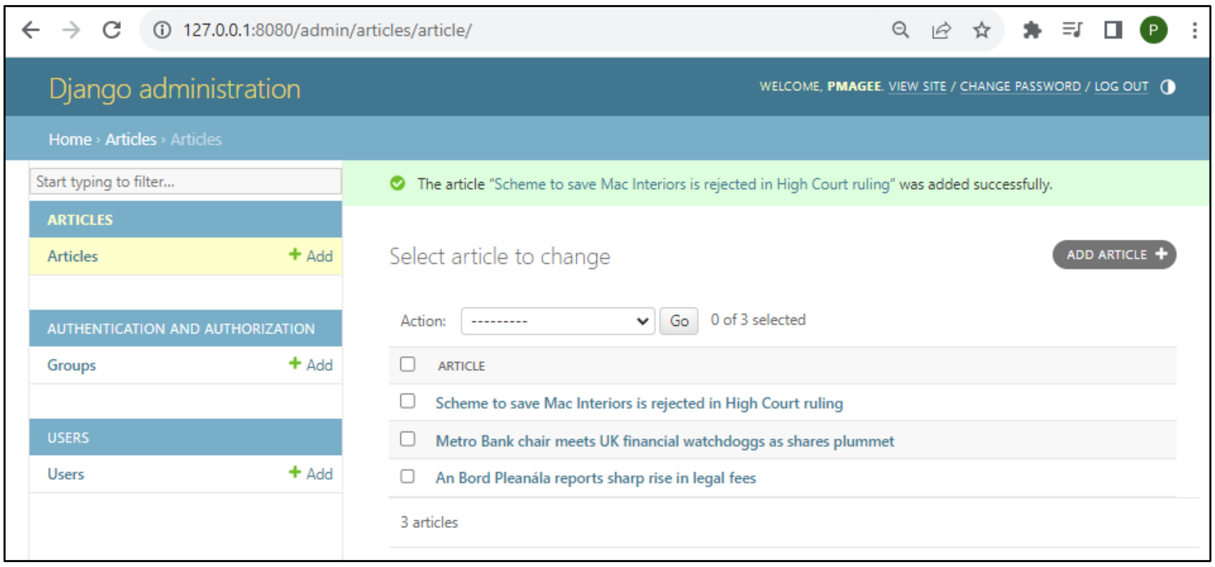
Title:

Body:

Author: pmagee

You should now see three new articles on the updated Articles page.

Admin with three articles


127.0.0.1:8080/admin/articles/article/

Django administration

WELCOME, PMAGEE. VIEW SITE / CHANGE PASSWORD / LOG OUT

Home › Articles › Articles

The article "Scheme to save Mac Interiors is rejected in High Court ruling" was added successfully.

Select article to change

Action: --------- Go 0 of 3 selected

ARTICLE
Scheme to save Mac Interiors is rejected in High Court ruling
Metro Bank chair meets UK financial watchdoggs as shares plummet
An Bord Pleanála reports sharp rise in legal fees

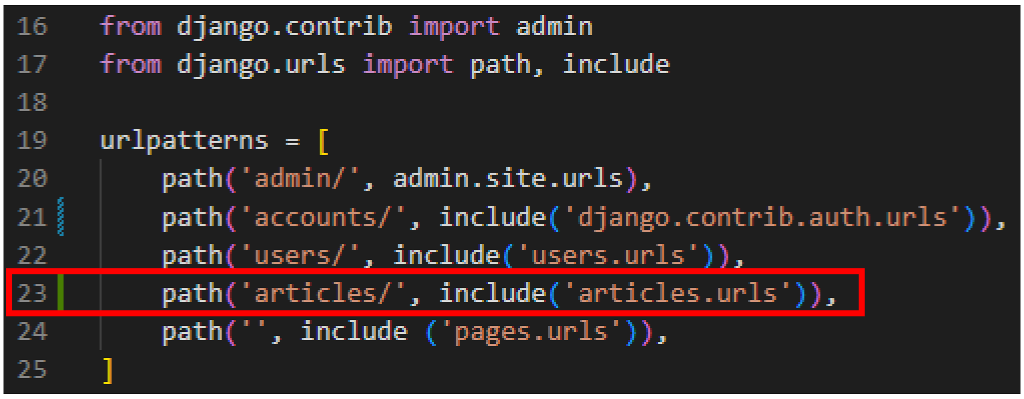
3 articles

If you click on an individual article, you will see that the title, body, and author are displayed but not the date. That is because the date was automatically added by Django for us and therefore cannot be changed in the admin.

Even though date is not displayed here we will still be able to access it in our templates so it can be displayed on web pages.

Step 5 - URLs

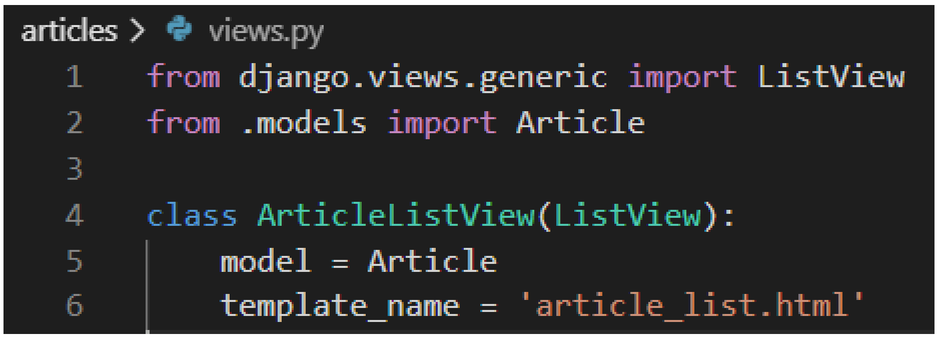
The next step is to configure our URLs. We will configure our urls so that our articles appear at articles/. Add a URL pattern for articles at the line shown below in the **newspaper_project/urls.py** file as shown below:



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

urlpatterns = [
    path('admin/', admin.site.urls),
    path('accounts/', include('django.contrib.auth.urls')),
    path('users/', include('users.urls')),
    path('articles/', include('articles.urls')),
    path('', include ('pages.urls')),
]
```

Step 6 - View

Now create the view using the built-in generic **ListView** from Django.

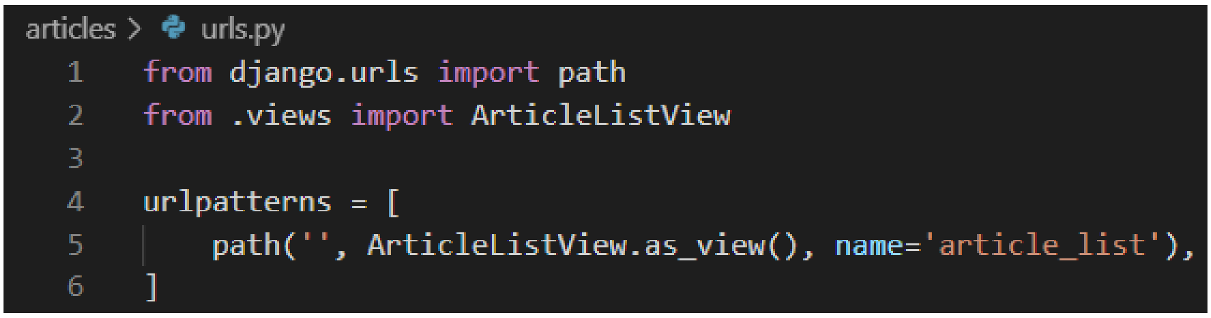


articles > views.py

```python
from django.views.generic import ListView
from .models import Article

class ArticleListView(ListView):
    model = Article
    template_name = 'article_list.html'
```

Step 6 - URLs

Next create an **articles/urls.py** file and add in the following code:


articles > urls.py

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

urlpatterns = [
    path('', ArticleListView.as_view(), name='article_list'),
]
```

The only two fields we need to specify are the model **Article** and our template name which will be **article_list.html**.

Step 8 - Template

Create a template inside the **templates** folder called **article_list.html**.

Bootstrap has a built-in component called **Cards** that we can customize for our individual articles. Recall that **ListView** returns an object called object_list which we can iterate over, using a for loop.

Within each article we display the title, body, author, and date. We will also provide links to “edit” and “delete” functionality that we will create later.

The html code for **article_list.html** is available here for you to copy and paste.

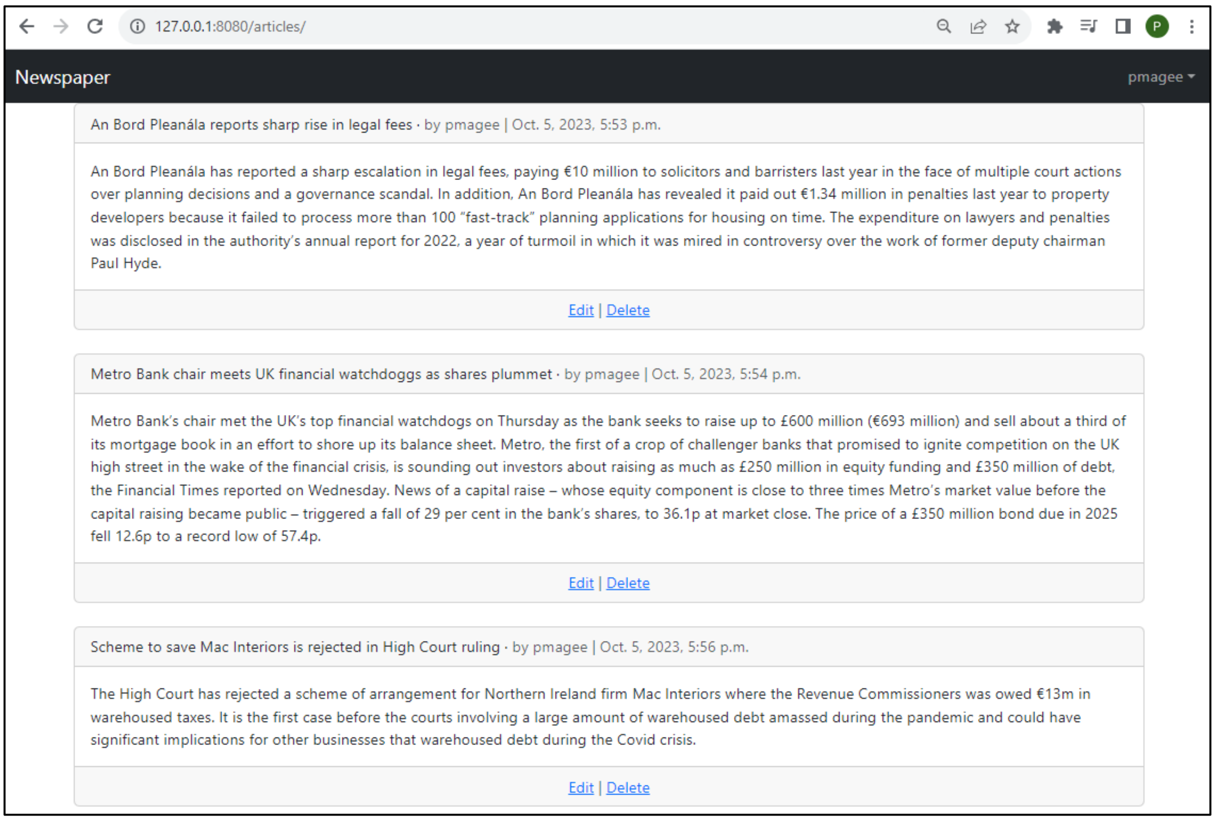
article_list.html

```
{% extends 'base.html' %}
{% block title %}Articles{% endblock title %}
{% block content %}
  {% for article in object_list %}
    <div class="card">
      <div class="card-header">
        <span class="font-weight-bold">{{ article.title }}</span> &middot;
        <span class="text-muted">by {{ article.author }} | {{ article.date
}}</span>
      </div>
      <div class="card-body">
        {{ article.body }}
      </div>
      <div class="card-footer text-center text-muted">
        <a href="">Edit</a> |
        <a href="">Delete</a>
      </div>
    </div>
    <br />
  {% endfor %}
{% endblock content %}
```

Start the server again and check out the new page at http://127.0.0.1:8080/articles/.

Articles page

The Bootstrap Card feature has certainly made the page look good. Notice also that the date is included.



An Bord Pleanála reports sharp rise in legal fees · by pmagee | Oct. 5, 2023, 5:53 p.m.

An Bord Pleanála has reported a sharp escalation in legal fees, paying €10 million to solicitors and barristers last year in the face of multiple court actions over planning decisions and a governance scandal. In addition, An Bord Pleanála has revealed it paid out €1.34 million in penalties last year to property developers because it failed to process more than 100 "fast-track" planning applications for housing on time. The expenditure on lawyers and penalties was disclosed in the authority's annual report for 2022, a year of turmoil in which it was mired in controversy over the work of former deputy chairman Paul Hyde.

Edit | Delete

Metro Bank chair meets UK financial watchdoggs as shares plummet · by pmagee | Oct. 5, 2023, 5:54 p.m.

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Edit | Delete

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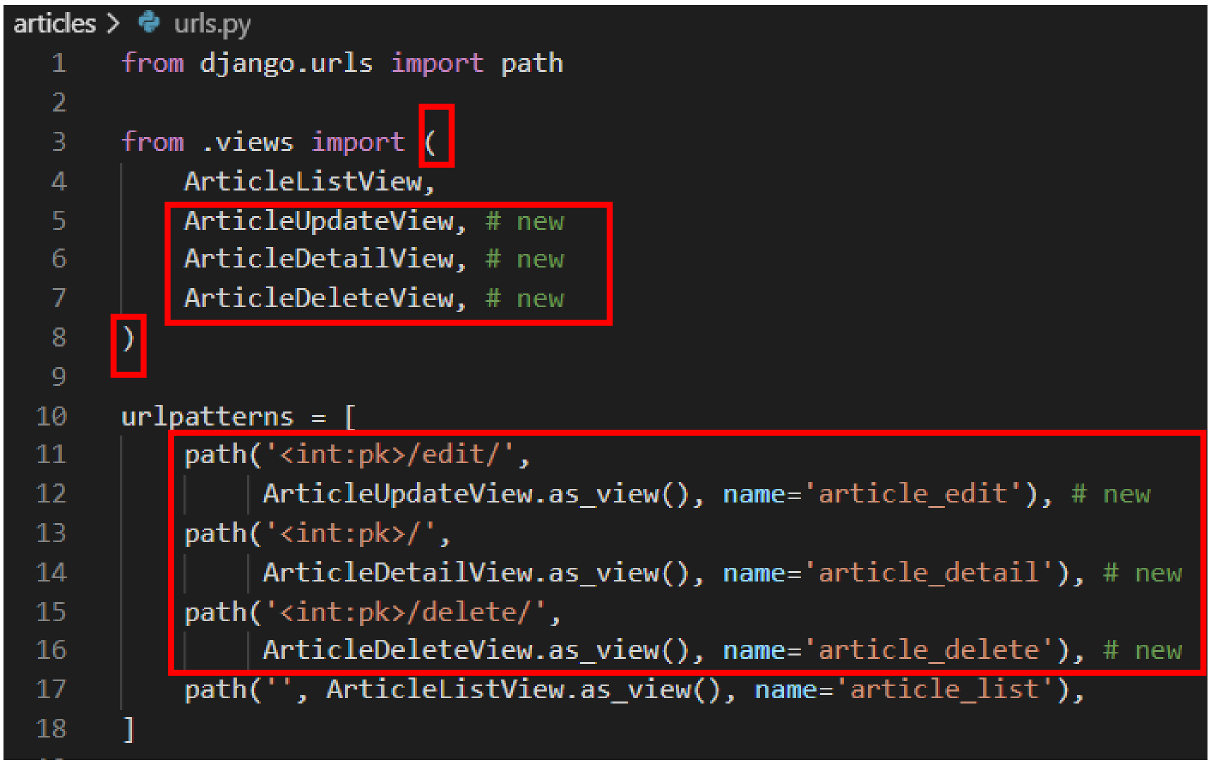
Edit | Delete

Step 9 Edit/Delete Functionality

How do we add edit and delete options? We need new urls, views, and templates. Let's start with the urls. We can take advantage of the fact that Django automatically adds a primary key to each database. Therefore, our first article with a primary key of 1 will be at articles/1/edit/ and the delete route will be at articles/1/delete/.

Add the following code to **articles/urls.py**. Note the addition of the brackets around the imports for the different views:

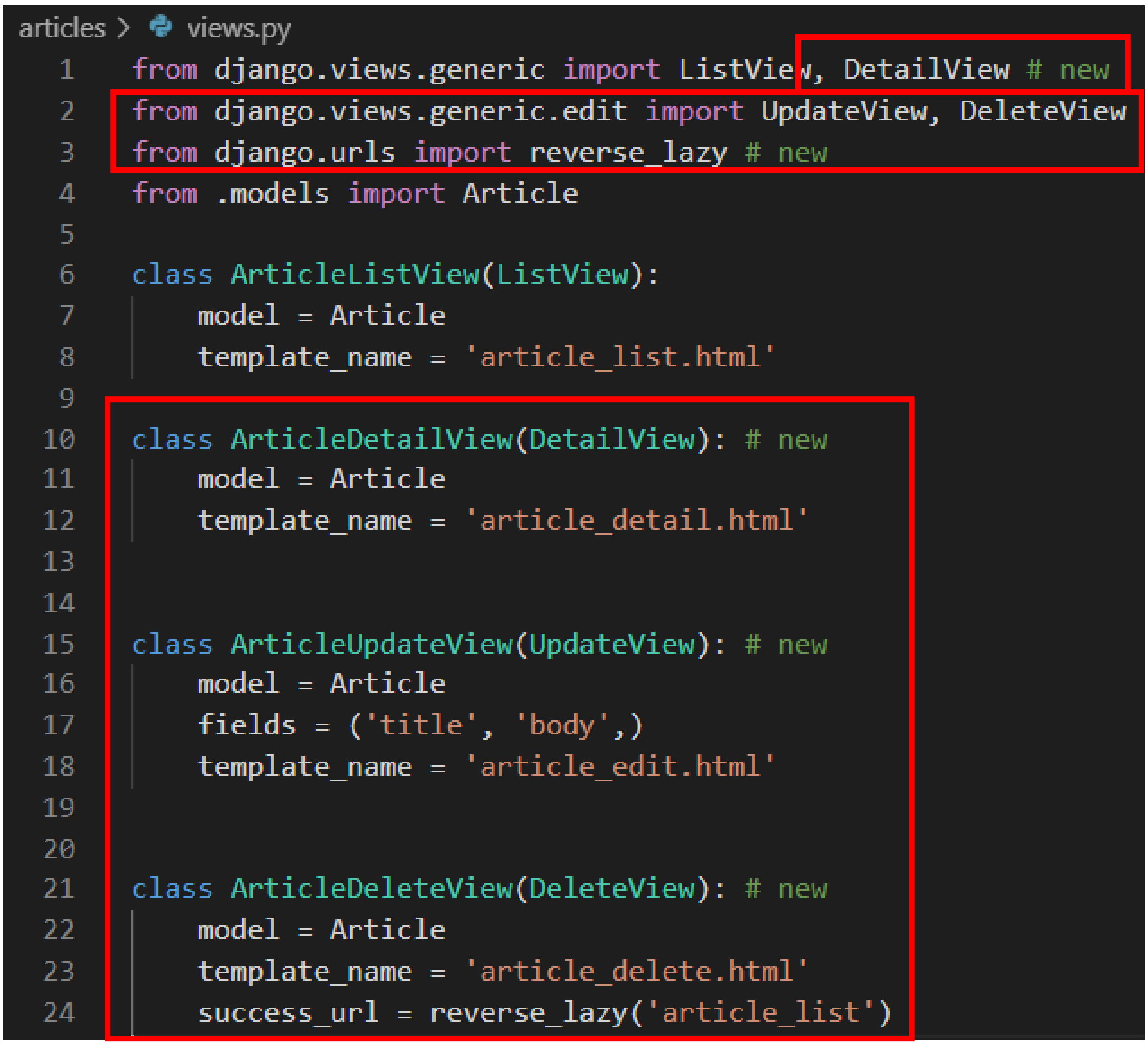


```
from django.urls import path

from .views import (
    ArticleListView,
    ArticleUpdateView, # new
    ArticleDetailView, # new
    ArticleDeleteView, # new
)

urlpatterns = [
    path('<int:pk>/edit/',
        ArticleUpdateView.as_view(), name='article_edit'), # new
    path('<int:pk>/',
        ArticleDetailView.as_view(), name='article_detail'), # new
    path('<int:pk>/delete/',
        ArticleDeleteView.as_view(), name='article_delete'), # new
    path('', ArticleListView.as_view(), name='article_list'),
]
```

Next create the views which will use Django’s generic **class-based views** for **DetailView**, **UpdateView** and **DeleteView**. We specify which fields can be updated–title and body–and where to redirect the user after deleting an article: article_list.



```python
from django.views.generic import ListView, DetailView # new
from django.views.generic.edit import UpdateView, DeleteView
from django.urls import reverse_lazy # new
from .models import Article

class ArticleListView(ListView):
    model = Article
    template_name = 'article_list.html'

class ArticleDetailView(DetailView): # new
    model = Article
    template_name = 'article_detail.html'


class ArticleUpdateView(UpdateView): # new
    model = Article
    fields = ('title', 'body',)
    template_name = 'article_edit.html'


class ArticleDeleteView(DeleteView): # new
    model = Article
    template_name = 'article_delete.html'
    success_url = reverse_lazy('article_list')
```

Finally, we need to add our new templates. Create the files **article_edit.html**, **article_detail.html**, and **article_delete.html** inside the **templates** folder. The code for these templates is provided here for you to copy and paste.

article_detail.html

```
{% extends 'base.html' %}
{% block title %}Detail Page{% endblock title %}
{% block content %}
  <div class="article-entry">
    <h2>{{ object.title }}</h2>
    <p>by {{ object.author }} | {{ object.date }}</p>
    <p>{{ object.body }}</p>
  </div>

  <p><a href="{% url 'article_edit' article.pk %}">Edit</a> |
    <a href="{% url 'article_delete' article.pk %}">Delete</a></p>
  <p>Back to <a href="{% url 'article_list' %}">All Articles</a>.</p>
{% endblock content %}
```

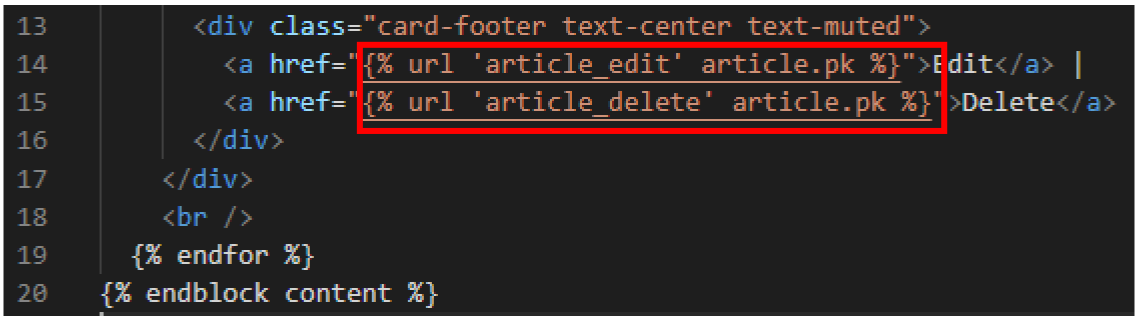
article_edit.html

```
{% extends 'base.html' %}
{% block title %}Edit Page{% endblock title %}
{% load crispy_forms_tags %}
{% block content %}
  <h1>Edit</h1>
  <form action="" method="post">{% csrf_token %}
    {{ form | crispy }}
    <button class="btn btn-info ml-2" type="submit">Update</button>
  </form>
{% endblock content %}
```

article_delete.html

```
{% extends 'base.html' %}
{% block title %}Delete Page{% endblock title %}
{% block content %}
  <h1>Delete</h1>
  <form action="" method="post">{% csrf_token %}
    <p>Are you sure you want to delete "{{ article.title }}"?</p>
    <button class="btn btn-danger ml-2" type="submit">Confirm</button>
  </form>
{% endblock content %}
```

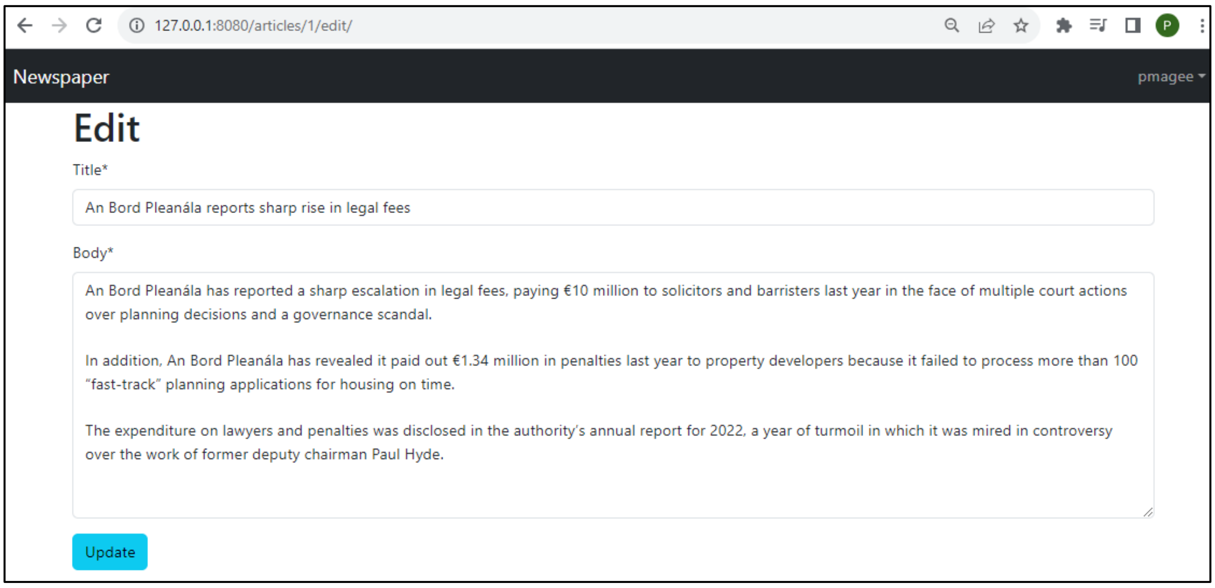
Next, we need to add the edit and delete links to the **article_list.html** page as shown below:



```
      <div class="card-footer text-center text-muted">
        <a href="{% url 'article_edit' article.pk %}">Edit</a> |
        <a href="{% url 'article_delete' article.pk %}">Delete</a>
      </div>
    </div>
    <br />
  {% endfor %}
{% endblock content %}
```

Start up the server and navigate to articles page at http://127.0.0.1:8080/articles/. Click on the link for "edit" on the first article and you'll be redirected to: http://127.0.0.1:8080/articles/1/edit/ as shown here:

Edit Article page



Edit

Title*

An Bord Pleanála reports sharp rise in legal fees

Body*

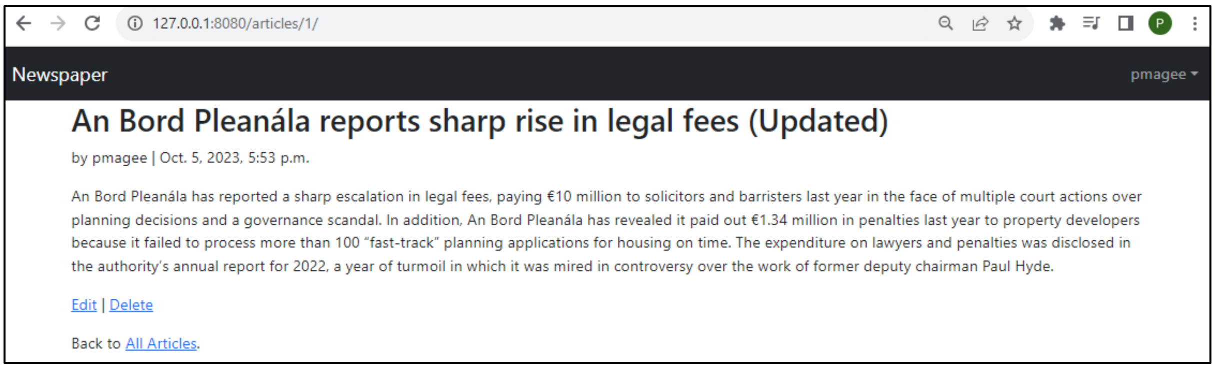
An Bord Pleanála has reported a sharp escalation in legal fees, paying €10 million to solicitors and barristers last year in the face of multiple court actions over planning decisions and a governance scandal.

In addition, An Bord Pleanála has revealed it paid out €1.34 million in penalties last year to property developers because it failed to process more than 100 "fast-track" planning applications for housing on time.

The expenditure on lawyers and penalties was disclosed in the authority's annual report for 2022, a year of turmoil in which it was mired in controversy over the work of former deputy chairman Paul Hyde.

If you update the "title" field and click update you'll be redirected to the detail page which shows the new change.

Article Detail page



127.0.0.1:8080/articles/1/

Newspaper pmagee

An Bord Pleanála reports sharp rise in legal fees (Updated)

by pmagee | Oct. 5, 2023, 5:53 p.m.

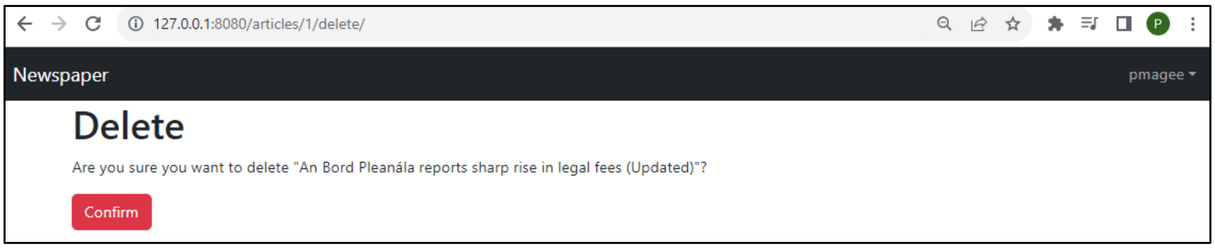
An Bord Pleanála has reported a sharp escalation in legal fees, paying €10 million to solicitors and barristers last year in the face of multiple court actions over planning decisions and a governance scandal. In addition, An Bord Pleanála has revealed it paid out €1.34 million in penalties last year to property developers because it failed to process more than 100 "fast-track" planning applications for housing on time. The expenditure on lawyers and penalties was disclosed in the authority's annual report for 2022, a year of turmoil in which it was mired in controversy over the work of former deputy chairman Paul Hyde.

Edit | Delete

Back to All Articles.

If you click on the "Delete" link you will be redirected to the delete page.

Delete page



127.0.0.1:8080/articles/1/delete/

Newspaper pmagee

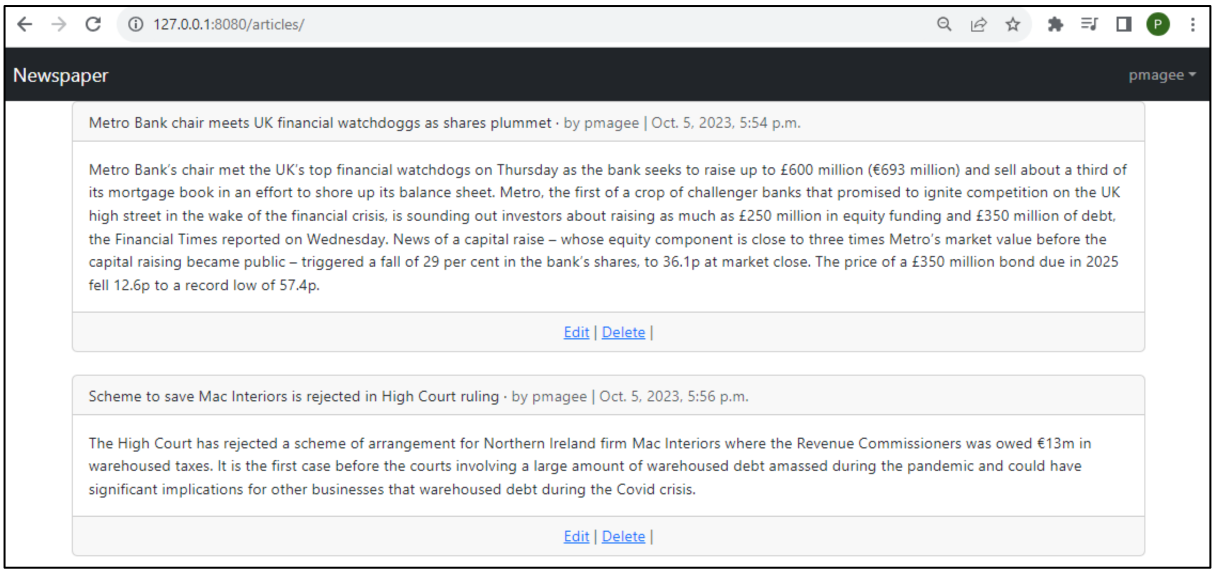
Delete

Are you sure you want to delete "An Bord Pleanála reports sharp rise in legal fees (Updated)"?

Confirm

Press the red button for "Delete" and you will be redirected to the articles page which now only has two entries.

Articles page with two entries



127.0.0.1:8080/articles/

Newspaper pmagee

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Edit | Delete |

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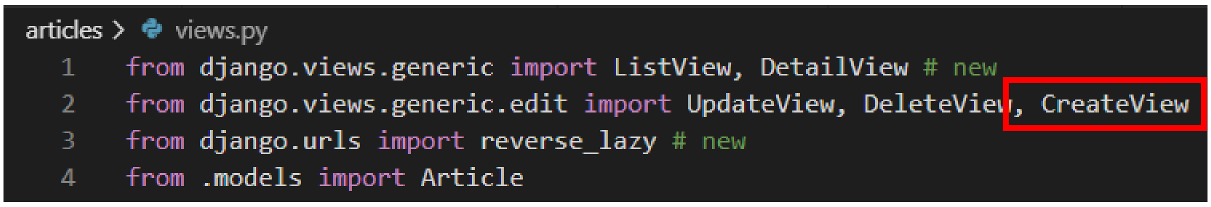
Edit | Delete |

Step 10 Create a new article

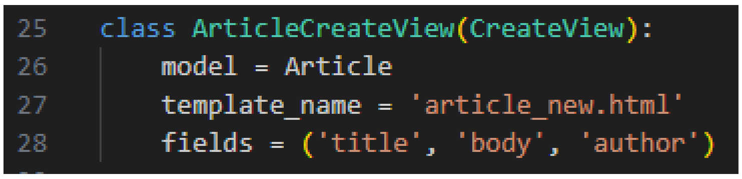
The final step is a create page for new articles which we can do with Django's **CreateView**. Our three steps are to create a view, url, and template.

Add the following code to **articles/views.py**:



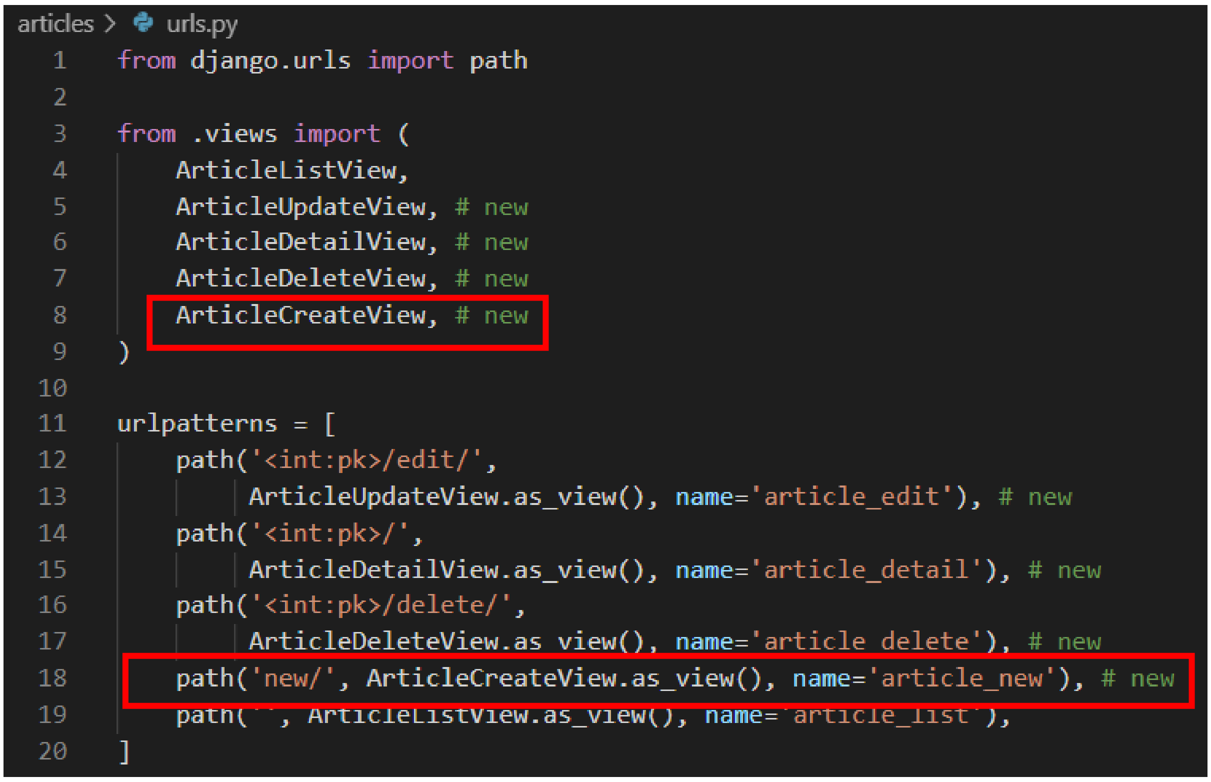
articles > views.py

```
from django.views.generic import ListView, DetailView # new
from django.views.generic.edit import UpdateView, DeleteView, CreateView
from django.urls import reverse_lazy # new
from .models import Article
```



```
class ArticleCreateView(CreateView):
    model = Article
    template_name = 'article_new.html'
    fields = ('title', 'body', 'author')
```

Update **articles/urls.py** with the following code:



articles > urls.py

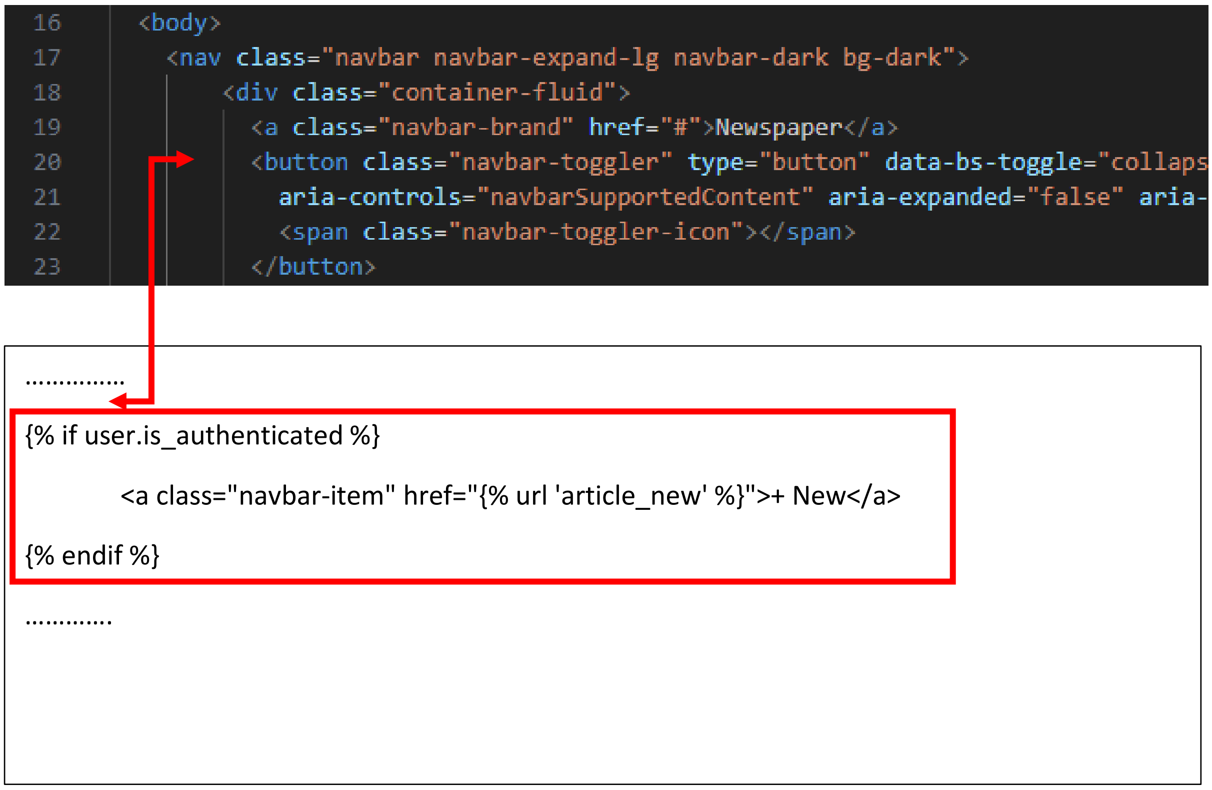
```
from django.urls import path

from .views import (
    ArticleListView,
    ArticleUpdateView, # new
    ArticleDetailView, # new
    ArticleDeleteView, # new
    ArticleCreateView, # new
)

urlpatterns = [
    path('<int:pk>/edit/',
         ArticleUpdateView.as_view(), name='article_edit'), # new
    path('<int:pk>/',
         ArticleDetailView.as_view(), name='article_detail'), # new
    path('<int:pk>/delete/',
         ArticleDeleteView.as_view(), name='article_delete'), # new
    path('new/', ArticleCreateView.as_view(), name='article_new'), # new
    path('', ArticleListView.as_view(), name='article_list'),
]
```

Create a new template called **article_new.html** and copy and paste the code provided below into it:

```
{% extends 'base.html' %}
{% block title %}New Article Page{% endblock title %}
{% load crispy_forms_tags%}
{% block content %}
  <h1>New article</h1>
  <form action="" method="post">{% csrf_token %}
    {{ form|crispy }}
    <button class="btn btn-success ml-2" type="submit">Save</button>
  </form>
{% endblock content %}
```

Finally add a link to creating new articles in the navbar so it is accessible everywhere on the site to logged-in users.

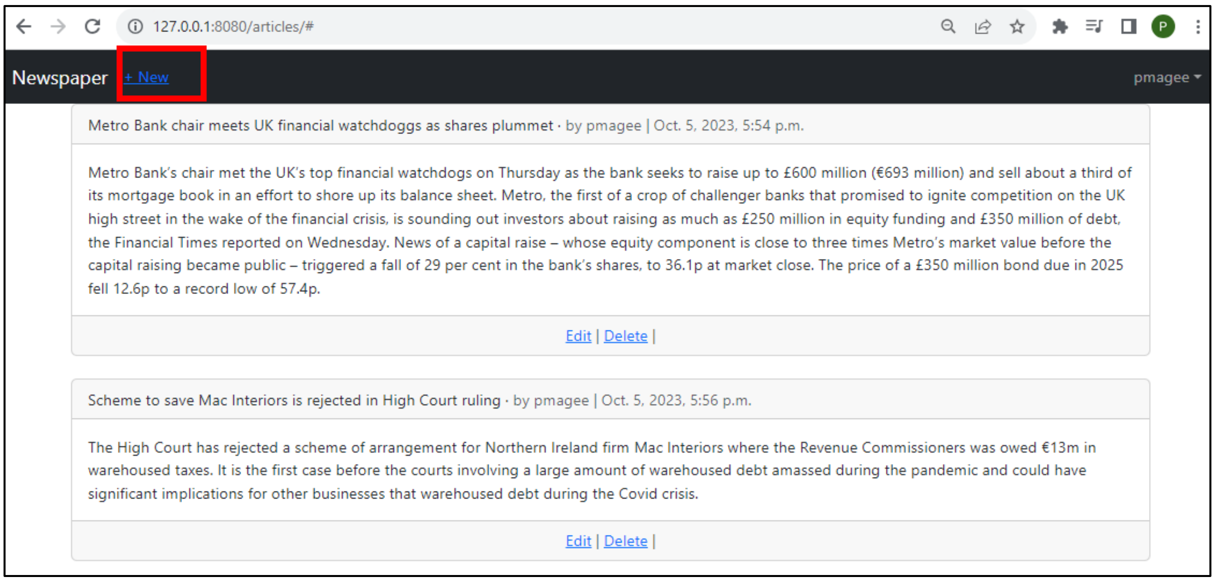
Open the file **base.html** and copy the **if endif** block of code provided below and paste it in the location after **<a class="navbar-brand" href="#">Newspaper</a> (line 19)** as shown in the screen shot:



```
16  <body>
17    <nav class="navbar navbar-expand-lg navbar-dark bg-dark">
18        <div class="container-fluid">
19          <a class="navbar-brand" href="#">Newspaper</a>
20          <button class="navbar-toggler" type="button" data-bs-toggle="collaps
21            aria-controls="navbarSupportedContent" aria-expanded="false" aria-
22            <span class="navbar-toggler-icon"></span>
23          </button>
```

```
……………
{% if user.is_authenticated %}
        <a class="navbar-item" href="{% url 'article_new' %}">+ New</a>
{% endif %}
…………..
```

Refresh the articles page, check that you are logged in and the change is evident in the top navbar.



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Edit | Delete |

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Edit | Delete |

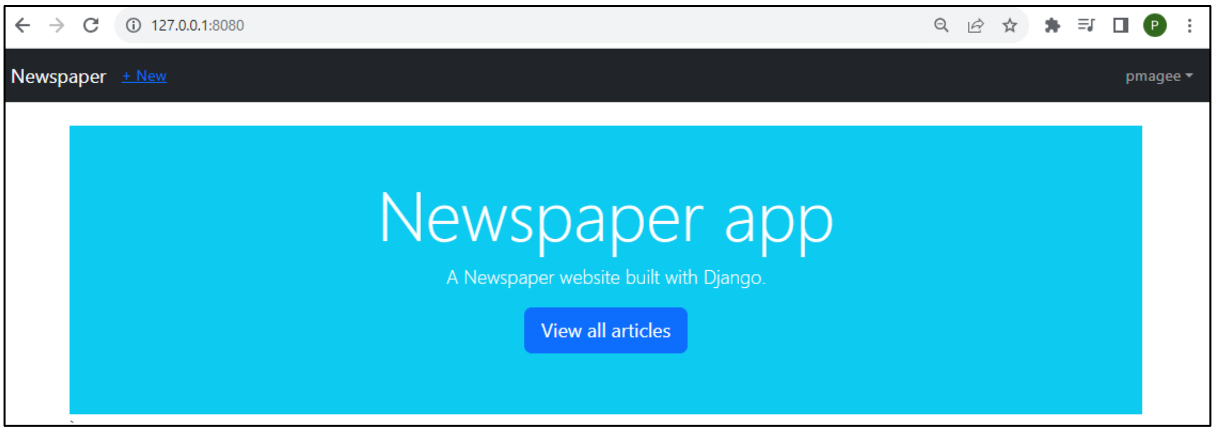
Step 11 – Home Page Styling

One last improvement to make is with the home page using Bootstrap.

Open the file **home.html** and replace the code with the code provided below:

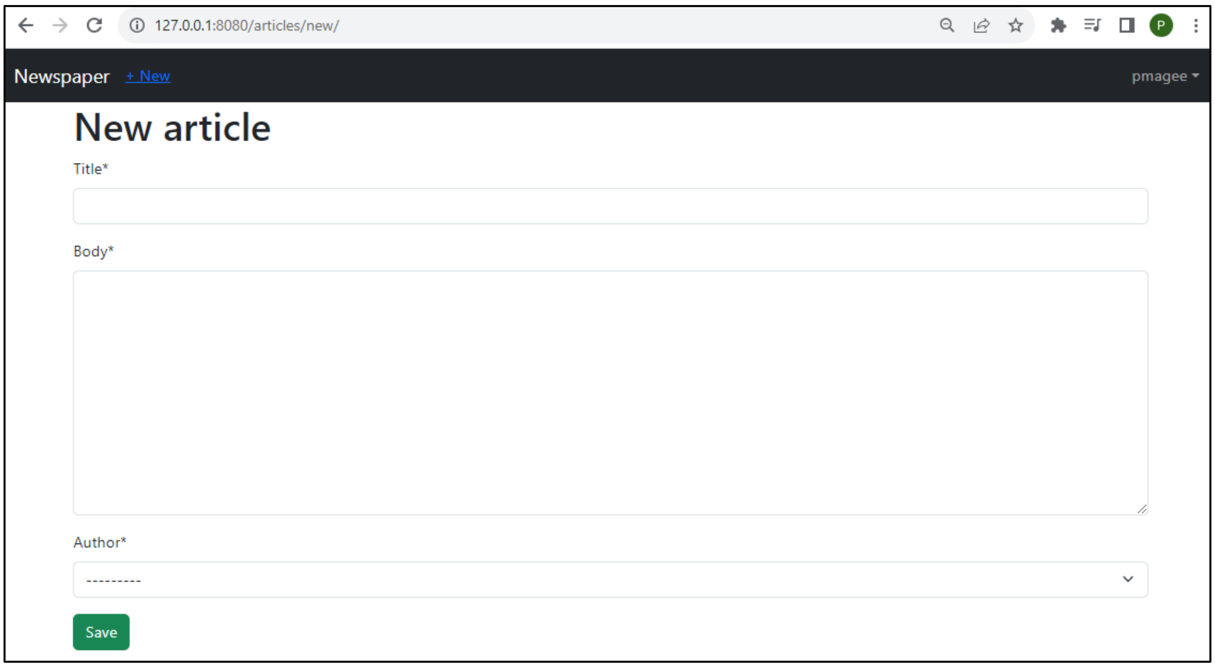
```
{% extends 'base.html' %}
{% block title %}Home{% endblock title %}
{% block content %}
  <br/>
  <div class="container-fluid text-sm-center p-5 bg-info text-white ">
    <h1 class="display-2">Newspaper app</h1>
    <p class="lead">A Newspaper website built with Django.</p>
    <p><a class="btn btn-primary btn-lg" href="{% url 'article_list' %}"
      role="button" >View all articles</a></p>
</div>`
{% endblock content %}
```

Start up the server again and navigate to our homepage to see the new link in nav:



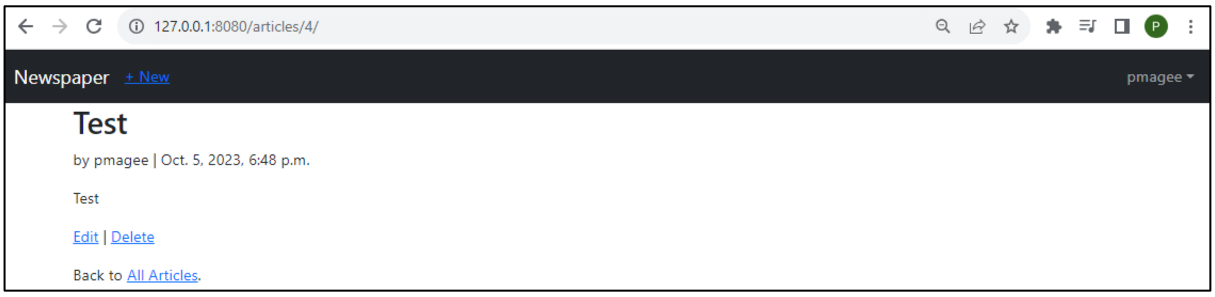
Click on the link for “+ New” in the top navbar and you will be redirected to the create page.

Create page



Go ahead and create a new article. Then click on the “Save” button. You will be redirected to the detail page. Why? Because in our **models.py** file we set the **get_-absolute_url** method to article_detail. This is a good approach because if we later change the url pattern for the detail page to, say, articles/details/4/, the redirect will still work. Whatever route is associated with **article_detail** will be used; there is no hardcoding of the route itself.

Detail page


127.0.0.1:8080/articles/4/

Newspaper + New pmagee

Test

by pmagee | Oct. 5, 2023, 6:48 p.m.

Test

Edit | Delete

Back to All Articles.

Note also that the primary key here is 4 in the URL. Even though we're only displaying three articles right now, Django doesn't reorder the primary keys just because we deleted one. In practice, most real-world sites don't actually delete anything; instead they "hide" deleted fields since this makes it easier to maintain the integrity of a database and gives the option to "undelete" later on if needed. With our current approach once, something is deleted it's gone for good!

Run the following git commands to update the local and remote repositories:

git add -A

git commit -m "lab 6 part 4 commit"

git push -u origin main