

Lab 9 Part 6

Database Population

Sometimes you may need to transfer your Django project database into a fresh environment with a new database. This could be the case if you are changing from one type of database to another, or if you want to share an entire copy of a project with someone else. You may not want to have to add in all your content all over again.

One of the easiest solutions to this problem is Django fixtures and two commands `dumpdata` and `loaddata`.

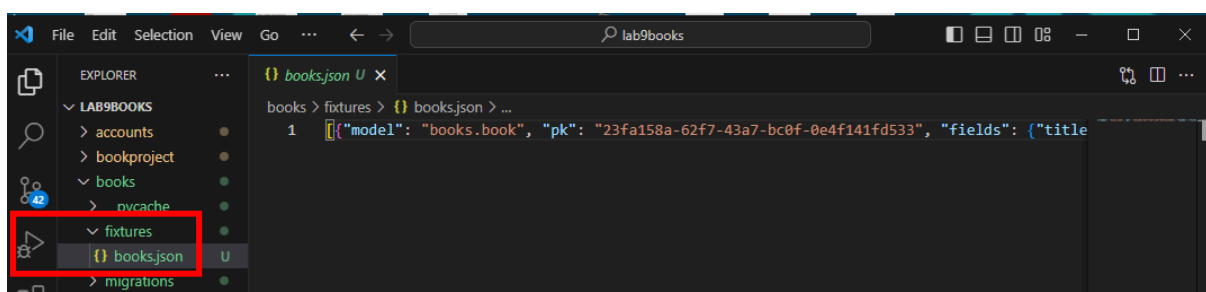
A fixture is a collection of data that Django knows how to import into a database. We can make this data available in a **json** file. JSON (JavaScript Object Notation) is a syntax for storing and exchanging data.

We will try this out with our **books** app where we will export a copy of the Books table into a json file. You should have at least 3 book objects in the database table called `books_book`.

Create a new folder inside the **books** app called **fixtures**. Run the following command to export the data from the **books** app into a file called **books.json**:

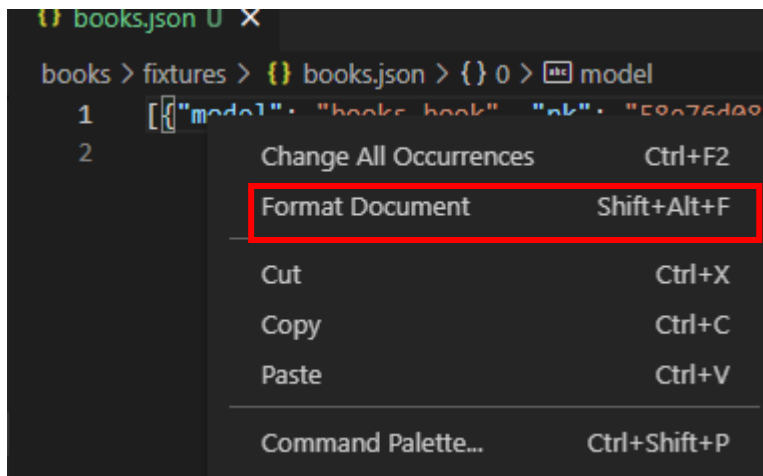
`python manage.py dumpdata books > books/fixtures/books.json`

You should see the json file in your project explorer



Open the file and you will see that the content is not very well formatted and appears all on a single line.

Right-click inside the document window and click the option “**Format Document**”. You may be asked to choose a formatting tool first.



The content of the document is formatted as shown below:

```
{ } books.json U X
books > fixtures > { } books.json > ...
1  [
2    {
3      "model": "books.book",
4      "pk": "23fa158a-62f7-43a7-bc0f-0e4f141fd533",
5      "fields": {
6        "title": "Django Unleashed",
7        "author": "Andrew Pinkham",
8        "price": "40.00",
9        "date_publication": "2015-11-26"
10     }
11   },
12   {
13     "model": "books.book",
14     "pk": "510d41ea-0bb3-499e-bc60-c42d6e5cb13c",
15     "fields": {
16       "title": "Python Cookbook: Recipes for Mastering Python",
17       "author": "David Beazley and Brian K. Jones",
18       "price": "58.23",
19       "date_publication": "2013-05-23"
20     }
21   },
22   {
23     "model": "books.book",
24     "pk": "d29b7b41-562b-4675-8b30-b82e819a9e16",
25     "fields": {
26       "title": "Lightweight Django",
27       "author": "Julia Elman and Mark Lavin",
28       "price": "35.83",
29       "date_publication": "2014-11-11"
30     }
31   }
32 ]
```

These are the main characteristics of the JSON format:

1. There is a sequence of key-value pairs surrounded by curly brackets {}.

```
1  [
2    {
3      "model": "books.book",
4      "pk": "23fa158a-62f7-43a7-bc0f-0e4f141fd533",
5      "fields": {
6        "title": "Django Unleashed",
7        "author": "Andrew Pinkham",
8        "price": "40.00",
9        "date_publication": "2015-11-26"
10     }
11  },
```

2. Each key is mapped to a particular value using this format:

"key": <value> e.g. "price": "40.00"

The values that require quotes must be surrounded by double quotes.

3. Key-value pairs are separated by a comma. Only the last pair is not followed by a comma.

```
{
    "date_publication": "2015-11-26",
    "cover": "covers/Lightweight.jpg" # No comma here
}
```

To try out the json file we will delete the database.

- Delete everything in the migrations folders for each app except for `__init__.py`
- Delete `db.sqlite` file

Run the following two commands again to create the database tables:

`python manage.py makemigrations`

`python manage.py migrate`

Create the superuser account again and log into Django Admin and add a profile for this user.

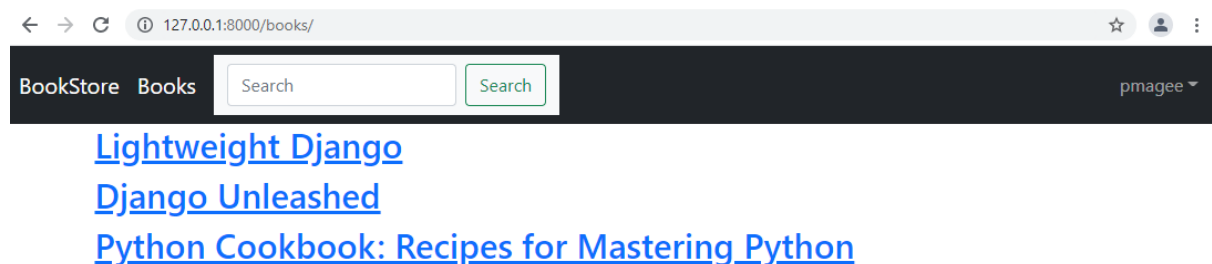
We will now populate the `books_book` table with the data from the json file.

`python manage.py loaddata books.json`

You should see the following output indicating that 3 objects have been created:

```
(env) C:\Users\pmagee\django\projects\lab-9-upload-pmagee>python manage.py loaddata books.json
Installed 3 object(s) from 1 fixture(s)
```

If you go to the home page and click on the **Books** item in the navbar, the three books will be displayed:



Stop the server and run the following git commands to update the local and remote repositories:

`git add -A`

`git commit -m "lab 9 part 6 commit"`

`git push -u origin main`