

## How to connect MongoDB database with Django



---

Home

 **Kajal Kumari** – Published On June 16, 2021

Beginner Data Engineering MongoDB NoSQL

This article was published as a part of the [Data Science Blogathon](#)

## Introduction

Let's consider a scenario where you are working on a real-time project. The data you have to work on is unstructured and has millions of records. This is where MongoDB comes into the picture. It can store unstructured data with easy access to it. Now that we have a basic understanding let's explore a little bit in-depth about MongoDB and Django.

At the end of this article you will have a basic understanding of the following:

- What is MongoDB?
- What is Django?
- Methods to connect with MongoDB using Django.

Now without further ado let's start.....

## 1. What is MongoDB?

First, let's see the official definition...

MongoDB is a document database, which means it stores data in JSON-like documents. We believe this is the most natural way to think about data and is much more expressive and powerful than the traditional row/column model.

---

---

Source: <https://www.mongodb.com/>

In simple words.... the traditional way of storing and using any data is structured (table or row/column format). But in real-time, this is not how data is received or stored. Data can have any number of fields or parameters to store. MongoDB stores the data in a similar format using JSON-like documents and NoSQL is used to access the stored data.

## 2. What is Django?

Django is a high-level Python Web framework that encourages rapid development and clean, pragmatic design. Built by experienced developers, it takes care of much of the hassle of Web development, so you can focus on writing your app without needing to reinvent the wheel. It's free and open source.

Source: <https://www.djangoproject.com/>

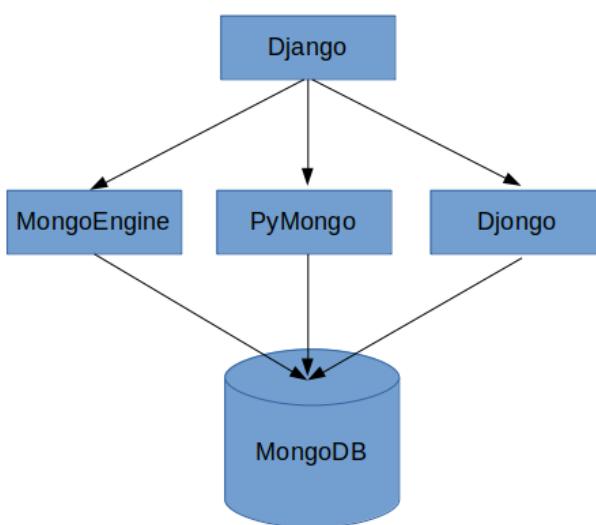
Django was designed to build websites of almost any type and because of its a property that it understands almost any format including HTML, RSS feeds, JSON, XML, etc. it can also be used to connect with MongoDB because MongoDB

## How to connect MongoDB database with Django



### 3. Methods to connect with MongoDB using Django

There are three different ways to connect with MongoDB using Django easily as shown in below figure. Let's see each method one by one.



Source: [myself](#)

In this article, we will focus on the Djongo method in detail.

#### 3.1 MongoEngine

MongoEngine is a Document-Object Mapper (think ORM but for document databases) for working with MongoDB from Python. (Source: <http://mongoengine.org/#home>)

Let's see how to set up MongoEngine and connect with MongoDB using it.

#### Step 1: Installation:

```
pip install -u mongoengine
```

#### Step 2: Requirements:

1. MongoDB 3.4, 3.6, 4.0 (<https://www.mongodb.com/try/download/community>)
2. pymongo>=3.4 (<https://pypi.org/project/pymongo/>)

Make sure you have the above requirements installed before proceeding to the next steps.

#### Step 3: project/settings.py

After starting the Django project open the settings.py file and add these lines to it. Also, remove or comment out the DATABASES section as shown in the below code snippet.

## How to connect MongoDB database with Django



```
# 'default': {
# 'ENGINE': 'djongo', #'django.db.backends.sqlite3',
# 'NAME': 'blogs', # DB name
# 'USER': 'root', # DB User name <optional>
# }
```

No need to do **migrate** and **makemigrations** because you are using MongoEngine ORM.

Also, your models.py file will look as shown in below code snippet.

### Step 4: project/models.py

```
from mongoengine import Document, fields

class Blogs(Document):
    name = fields.StringField()
    topic = fields.StringField()
    date = fields.DateTimeField()
    addition_info = fields.DictField()
```

Now, you are ready to go and also you can check more about MongoEngine here <http://docs.mongoengine.org/> and <https://github.com/MongoEngine/mongoengine>

## 3.2 PyMongo

This is a tool that contains python distribution for working with MongoDB. This is good for writing and saving JSON data to your MongoDB. This tool will let you use all of the mongo queries in your code.

Let's see the step to set up pymongo and connect to MongoDB using this approach.

### Step 1: Installation:

```
pip install pymongo
```

### Step 2: project/utils.py

After starting the Django project do the following:

Create utils.py in the project folder and add these lines

```
from pymongo import MongoClient
def get_db_handle(db_name, host, port, username, password):
    client = MongoClient(host=host,
                          port=int(port),
                          username=username,
                          password=password
                         )
    db_handle = client[db_name]
    return db_handle, client
def get_collection_handle(db_handle,collection_name):
    return db_handle[collection_name]
```

Now, you can use the above-mentioned functions in your views.py file or anywhere you want to fetch or write data into your MongoDB

### Step 3: project/views.py

## How to connect MongoDB database with Django



```
collection_handle = get_collection_handle(db_handle, REGIONS_COLLECTION)
collection_handle.find({})
collection_handle.insert({})
collection_handle.update({...})
```

No need to do anything in project/models.py when you are using PyMongo. Also, no need to add anything in the project/settings.py but don't forget to comment out the DATABASES part in the project/settings.py file.

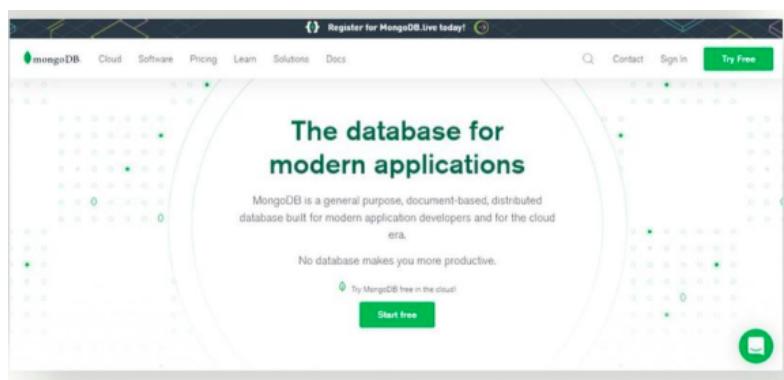
## 3.3 Djongo

Here we will see how to install MongoDB, Django and connect using the Djongo method.

Let's start.....

### Step 1: How to Install MongoDB

Go to the official website of MongoDB and download the MongoDB community server.



Source: <https://www.mongodb.com/try/download/community>

### Step 2: How to Download MongoDB Compass

Please follow the below-mentioned link to download and install MongoDB Compass.

Source: <https://www.mongodb.com/try/download/compass>

### Step 3: Creating Database using MongoDB Compass

After installation is complete open MongoDB Compass on your system and creates MongoDB or NoSQL Database as shown below.

Database Name	Storage Size	Collections	Indexes
admin	16.0KB	0	1
config	4.0KB	0	2
local	32.0KB	1	1

## How to connect MongoDB database with Django



Here database is created

### Step 4: How to Install Django Package

Open the terminal or git\_bash(if you are using Windows OS) and just type hit this command to install this package in your system.

```
pip install django
```

### Step 5: Create Project

Go to the location of your choice and create a Django project using the below command in the terminal:

```
django-admin startproject mysite
```

### Step 6: Make changes in the settings.py file

Open the setting.py file and simply add this database setting

```
#If your database is in your local machine
DATABASES = {
    'default': {
        'ENGINE': 'djongo',
        'NAME': 'your-db-name',
    }
}
```

### Step 7: Execute migrate Command

```
python3 manage.py migrate
```

If you do not see any error message then you have successfully connected to MongoDB using djongo.

That's it.. 😊

## Conclusion

In this article, we explore what is MongoDB, Django, and ways to connect with MongoDB using Django. I hope now you

## How to connect MongoDB database with Django



the content of my article.



Have a great day ... :)

[Kajal Kumari](#)

*The media shown in this article are not owned by Analytics Vidhya and are used at the Author's discretion.*

### Our Top Authors

[blogathon](#) [Django](#) [MongoDB](#) [python](#)



[view more](#)

### Download

Analytics Vidhya App for the Latest blog/Article



### Next Post

[Best Practices for Becoming A Good Python Developer](#)

## One thought on "How to connect MongoDB database with Django"



Anonymous says:

January 03, 2023 at 2:16 pm

Nice article, thanks for sharing. Could you please also write an article about how we can use Foreign Key, Many to Many Relationships, etc, that we generally use in Django SQL Database.

[Reply](#)

### Leave a Reply

Your email address will not be published. Required fields are marked \*

Comment

Name\*

Email\*

Website

Notify me of follow-up comments by email.  Notify me of new posts by email.

Submit

## How to connect MongoDB database with Django



## Top Resources



[Make Money While Sleeping: Side Hustles to Generate Passive Income..](#)

[Aayush Tyagi](#) - APR 27, 2023

© Copyright 2013-2023 Analytics Vidhya.

[Privacy Policy](#)   [Terms of Use](#)   [Refund Policy](#)