



# Sending Data from a Flask app to MongoDB Database

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This article covers how we can configure a [MongoDB](#) database with a [Flask](#) app and store some data in the database after configuring it. Before directly moving to the configuration phase here is a short overview of all tools and software we will use.

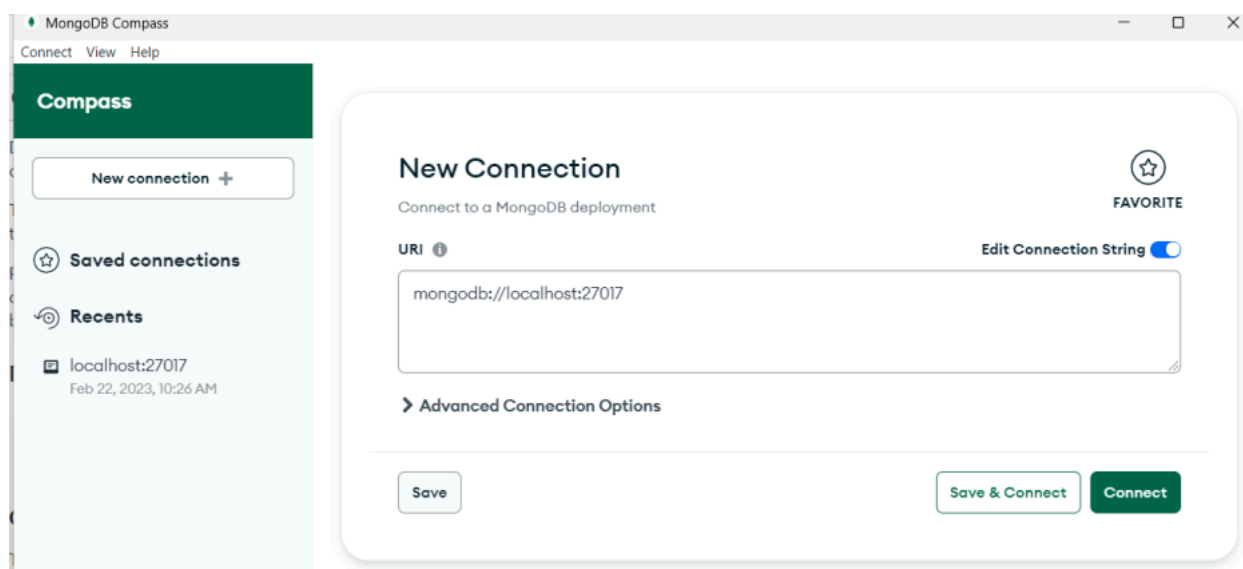
MongoDB is an open-source database that stores data in [JSON](#)-like documents. It is classified as a [NoSQL](#) database because it is based on different fundamentals as compared to a [SQL](#) relational database.

## Prerequisites

- A decent understanding of [Python](#) and a machine with [Python installed](#).
- Understanding of basic concepts of [Flask](#).
- MongoDB is installed on your local machine if not you can refer to this [article](#).

## Configuring MongoDB

Till this step, you have a local machine with MongoDB installed on it now run the MongoDB compass and the following screen will appear. You can edit the settings or just click connect and MongoDB will be running on your local machine.



## Setup a Development Environment

Let's configure the virtual environment for development, this step can be skipped but it is always recommended to use a dedicated development environment for each project to avoid dependency clash, this can be achieved using a Python [virtual environment](#).

```
# Create gfg folder
$ mkdir gfg

# Move to gfg folder
$ cd gfg
```

```
PS C:\Users\hariv> mkdir gfg

Directory: C:\Users\hariv

Mode                LastWriteTime         Length Name
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d-----          12-03-2023 11:54 PM             gfg

PS C:\Users\hariv> cd .\gfg\
PS C:\Users\hariv\gfg>
```

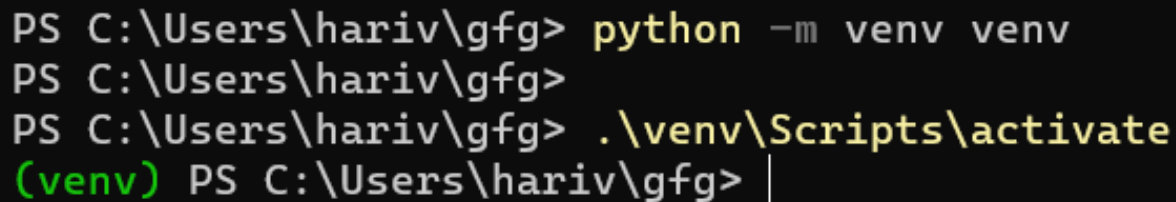
We created a folder named `gfg` for the project, you can name it anything you want and `cd` (change directory) to go into your newly created directory then run the following command that will create a virtual environment for your project.

```
$ python -m venv venv
```

Now to use the virtual environment we need to first activate it, this can be done by executing the activated binary file.

```
$ .\venv\Scripts\activate # for Windows OS
```

```
$ source venv/bin/activate # for Linux OS
```

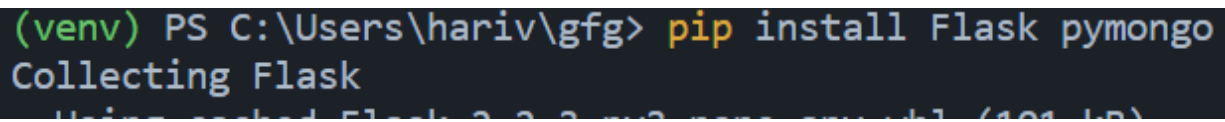


```
PS C:\Users\hariv\gfg> python -m venv venv
PS C:\Users\hariv\gfg>
PS C:\Users\hariv\gfg> .\venv\Scripts\activate
(venv) PS C:\Users\hariv\gfg> |
```

## Installing Dependencies for the Project

We are done configuring a development environment now let us install the tools that we will be using including [Flask](#), `pymongo` which provide the interface for Python-based apps to the [MongoDB](#) database.

```
$ pip install Flask pymongo
```



```
(venv) PS C:\Users\hariv\gfg> pip install Flask pymongo
Collecting Flask
Using cached Flask-2.2.2-py3-none-any.whl (101 kB)
```

Next, we'll connect a FLask app to MongoDB and send some data into it.

## Creating a Flask App

We are done with the database setup and installing the required libraries now we will [create a Flask app](#) and connect it to the MongoDB we created and

insert some user data into it. First, let's create a Flask app as follows.

Create a `main.py` file in the project directory and add the following code to the file.

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## Python3

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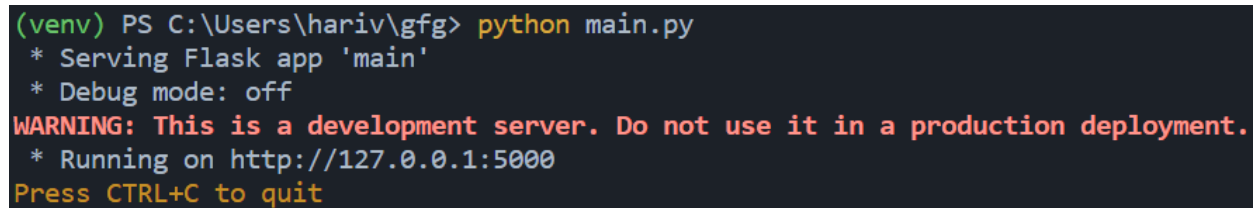
```
app = Flask(__name__)

@app.route('/')
def hello_world():
    return 'Hello, World!'

if __name__ == '__main__':
    app.run()
```

Over here we have created a starter Flask App with a single route that returns a string "Hello, World!", Now test this thing out by running the app as shown below:

### Output:

A terminal window with a dark background. The prompt is (venv) PS C:\Users\hariv\gfg>. The command python main.py has been executed. The output shows: \* Serving Flask app 'main', \* Debug mode: off, a red WARNING message: WARNING: This is a development server. Do not use it in a production deployment., \* Running on http://127.0.0.1:5000, and a prompt to Press CTRL+C to quit. A cursor is visible on the line following the prompt.

```
(venv) PS C:\Users\hariv\gfg> python main.py
* Serving Flask app 'main'
* Debug mode: off
WARNING: This is a development server. Do not use it in a production deployment.
* Running on http://127.0.0.1:5000
Press CTRL+C to quit
```

The app is up and running now let us test the output at `http://127.0.0.1:5000`,



# Hello, World!

## Connecting Flask App to Database

We have got a running starter Flask App with some basic code let's connect it to the MongoDB database using the following script.

### Python3

```
from flask import Flask, request
from pymongo import MongoClient

# Flask app object
app = Flask(__name__)

# Set up MongoDB connection
client = MongoClient('mongodb://localhost:27017/')
db = client['demo']
collection = db['data']
```

The above script will connect to the MongoDB database that we configured earlier now we need a post route to add some data in the database which can be done as follow:

### Python3

```
@app.route('/add_data', methods=['POST'])
def add_data():
    # Get data from request
```

```
data = request.json

# Insert data into MongoDB
collection.insert_one(data)

return 'Data added to MongoDB'
```

Here we created a route named `/add\_data` which when invoked with a post request reads the JSON data from the body and inserts it into the database.

For reference here is the overall code that I used for the demo.

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## Python3

```
from flask import Flask, request
from pymongo import MongoClient

app = Flask(__name__)

# root route
@app.route('/')
def hello_world():
    return 'Hello, World!'

# Set up MongoDB connection and collection
client = MongoClient('mongodb://localhost:27017/')

# Create database named demo if they don't exist already
db = client['demo']

# Create collection named data if it doesn't exist already
collection = db['data']

# Add data to MongoDB route
@app.route('/add_data', methods=['POST'])
def add_data():
    # Get data from request
    data = request.json

    # Insert data into MongoDB
    collection.insert_one(data)

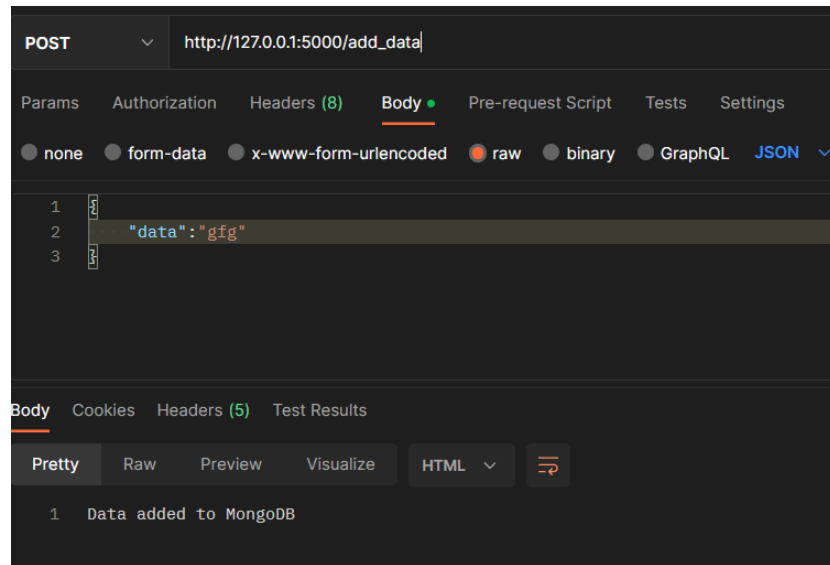
    return 'Data added to MongoDB'

if __name__ == '__main__':
```

```
app.run()
```

## Sending Data from Flask to MongoDB

Now let us test the entire script and if we can insert some data into the database using it, First run the Flask App shown before then make a POST request to `/add\_data` a route using a tool like [Postman](#).



The response above looks fine let us check the MongoDB database if there is any data inserted or not.



As you can see a database named demo is created with a collection of `data` with a single document that we just inserted using Flask.

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3

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