

## **Docker Basic:-**

Download Docker:- <https://docs.docker.com/engine/install/ubuntu/>

### **Uninstall old versions**

Older versions of Docker went by the names of `docker`, `docker.io`, or `docker-engine`. Uninstall any such older versions before attempting to install a new version:

```
sudo apt-get remove docker docker-engine docker.io containerd runc
```

It's OK if `apt-get` reports that none of these packages are installed.

Images, containers, volumes, and networks stored in `/var/lib/docker/` aren't automatically removed when you uninstall Docker. If you want to start with a clean installation, and prefer to clean up any existing data, refer to the [uninstall Docker Engine](#) section.

## **Installation methods**

You can install Docker Engine in different ways, depending on your needs:

- Docker Engine comes bundled with [Docker Desktop for Linux](#). This is the easiest and quickest way to get started.
- You can also set up and install Docker Engine from [Docker's apt repository](#).
- [Install it manually](#) and manage upgrades manually.
- Using a [convenience scripts](#). Only recommended for testing and development environments.

### **Install using the repository**

Before you install Docker Engine for the first time on a new host machine, you need to set up the Docker repository. Afterward, you can install and update Docker from the repository.

## Set up the repository

1. Update the `apt` package index and install packages to allow `apt` to use a repository over HTTPS:

```
sudo apt-get update
```

- `sudo apt-get install \`  
    `ca-certificates \`  
    `curl \`  
    `gnupg \`  
    `lsb-release`

- Add Docker's official GPG key:

```
sudo mkdir -p /etc/apt/keyrings
```

- `curl -fsSL https://download.docker.com/linux/ubuntu/gpg | sudo gpg --dearmor -o /etc/apt/keyrings/docker.gpg`

- Use the following command to set up the repository:

```
3. echo \
4.  "deb [arch=$(dpkg --print-architecture) signed-by=/etc/apt/keyrings/docker.gpg]
   https://download.docker.com/linux/ubuntu \
5.  $(lsb_release -cs) stable" | sudo tee /etc/apt/sources.list.d/docker.list > /dev/null
6.
```

## Install Docker Engine

1. Update the `apt` package index:

```
sudo apt-get update
```

Receiving a GPG error when running `apt-get update`?

Your default [umask](#) may be incorrectly configured, preventing detection of the repository public key file. Try granting read permission for the Docker public key file before updating the package index:

- ```
sudo chmod a+r /etc/apt/keyrings/docker.gpg
```
- `sudo apt-get update`
  - Install Docker Engine, containerd, and Docker Compose.
    - Latest
    - Specific version

To install the latest version, run:

```
sudo apt-get install docker-ce docker-ce-cli containerd.io docker-compose-plugin
```

```
root@ip-172-31-42-87:/home/ubuntu# docker --version
```

Docker version 20.10.23, build 7155243

```
root@ip-172-31-42-87:/home/ubuntu# su Ubuntu
```

```
ubuntu@ip-172-31-42-87:~$ sudo docker ps
```

| CONTAINER ID | IMAGE | COMMAND | CREATED | STATUS | PORTS | NAMES |
|--------------|-------|---------|---------|--------|-------|-------|
|--------------|-------|---------|---------|--------|-------|-------|

```
ubuntu@ip-172-31-42-87:~$ docker ps
```

Got permission denied while trying to connect to the Docker daemon socket at unix:///var/run/docker.sock: Get "http://%2Fvar%2Frun%2Fdocker.sock/v1.24/containers/json": dial unix /var/run/docker.sock: connect: permission denied

```
ubuntu@ip-172-31-42-87:~$ sudo usermod -a -G docker $USER
```

```
ubuntu@ip-172-31-42-87:~$ reboot
```

```
ubuntu@ip-172-31-42-87:~$ docker ps
```

| CONTAINER ID | IMAGE | COMMAND | CREATED | STATUS | PORTS | NAMES |
|--------------|-------|---------|---------|--------|-------|-------|
|--------------|-------|---------|---------|--------|-------|-------|

```
ubuntu@ip-172-31-42-87:~$
```

```
+++++
```

Download MySQL from [hub.docker.com](https://hub.docker.com)

<https://hub.docker.com/search?q=mysql>

```
ubuntu@ip-172-31-42-87:~$ docker pull mysql
```

Using default tag: latest

latest: Pulling from library/mysql

2c57acc5afca: Pull complete

0a990ab965c1: Pull complete

7acb6a84f0f1: Pull complete

6a2351a691a4: Pull complete

cdd0aae0ac1a: Pull complete

0c024d6bf869: Pull complete

e536ea8ecf65: Pull complete

d24661dff86b: Pull complete

95ef82dfce7a: Pull complete

c9a31e1bffa1: Pull complete

4edb4789da39: Pull complete

Digest: sha256:6f54880f928070a036aa3874d4a3fa203adc28688eb89e9f926a0dcacbce3378

Status: Downloaded newer image for mysql:latest

docker.io/library/mysql:latest

ubuntu@ip-172-31-42-87:~\$

Download : [https://hub.docker.com/\\_/mysql](https://hub.docker.com/_/mysql)

ubuntu@ip-172-31-42-87:~\$ docker run -it --name my-deb mysql:latest

2023-01-22 05:42:55+00:00 [Note] [Entrypoint]: Entrypoint script for MySQL Server 8.0.32-1.el8 started.

2023-01-22 05:42:56+00:00 [Note] [Entrypoint]: Switching to dedicated user 'mysql'

2023-01-22 05:42:56+00:00 [Note] [Entrypoint]: Entrypoint script for MySQL Server 8.0.32-1.el8 started.

2023-01-22 05:42:56+00:00 [ERROR] [Entrypoint]: Database is uninitialized and password option is not specified

You need to specify one of the following as an environment variable:

- MYSQL\_ROOT\_PASSWORD
- MYSQL\_ALLOW\_EMPTY\_PASSWORD
- MYSQL\_RANDOM\_ROOT\_PASSWORD

ubuntu@ip-172-31-42-87:~\$ docker ps

| CONTAINER ID | IMAGE | COMMAND | CREATED | STATUS | PORTS | NAMES |
|--------------|-------|---------|---------|--------|-------|-------|
|--------------|-------|---------|---------|--------|-------|-------|

```
ubuntu@ip-172-31-42-87:~$ docker run -it --name my-deb -e MYSQL_ROOT_PASSWORD=test@123 mysql:latest
```

```
docker: Error response from daemon: Conflict. The container name "/my-deb" is already in use by container
```

```
"9c24c32b8c33db712a2cb071a70be0370190122d1a1edf7968c1d7706b24c89a". You have to remove (or rename) that container to be able to reuse that name.
```

```
See 'docker run --help'.
```

```
ubuntu@ip-172-31-42-87:~$ docker ps
```

```
CONTAINER ID  IMAGE  COMMAND  CREATED  STATUS  PORTS  NAMES
```

```
ubuntu@ip-172-31-42-87:~$ docker ps -a
```

```
CONTAINER ID  IMAGE      COMMAND          CREATED    STATUS          PORTS  NAMES
```

```
9c24c32b8c33  mysql:latest  "docker-entrypoint.s..."  2 minutes ago  Exited (1) 2 minutes ago  my-deb
```

```
ubuntu@ip-172-31-42-87:~$ docker rm 9c24c32b8c33
```

```
9c24c32b8c33
```

```
ubuntu@ip-172-31-42-87:~$
```

```
docker run -it --name my-deb -e MYSQL_ROOT_PASSWORD=test@123 mysql:latest
```

```
ubuntu@ip-172-31-42-87:~$ docker ps
```

```
CONTAINER ID  IMAGE      COMMAND          CREATED    STATUS          PORTS          NAMES
```

```
e5229354d866  mysql:latest  "docker-entrypoint.s..."  15 minutes ago  Up 15 minutes  3306/tcp, 33060/tcp  my-deb
```

```
ubuntu@ip-172-31-42-87:~$ docker exec -it e5229354d866 bash
```

```
bash-4.4# mysql
```

```
ERROR 1045 (28000): Access denied for user 'root'@'localhost' (using password: NO)
```

```
bash-4.4# mysql -u root -p
```

```
Enter password:
```

```
Welcome to the MySQL monitor.  Commands end with ; or \g.
```

```
Your MySQL connection id is 12
```

```
Server version: 8.0.32 MySQL Community Server - GPL
```

```
Copyright (c) 2000, 2023, Oracle and/or its affiliates.
```

```
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affiliates. Other names may be trademarks of their respective  
owners.
```

```
Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.
```

```
mysql> show databases;
```

```
+-----+
```

```
| Database      |
+-----+
| information_schema |
| mysql         |
| performance_schema |
| sys          |
+-----+

4 rows in set (0.27 sec)
```

```
mysql> exit
```

```
Bye
```

```
bash-4.4# exit
```

```
exit
```

```
ubuntu@ip-172-31-42-87:~$
```

```
+++++
```

```
ubuntu@ip-172-31-42-87:~$ docker exec -it e5229354d866 bash
```

```
bash-4.4# mysql -u root -p
```

```
Enter password:
```



Welcome to the MySQL monitor. Commands end with ; or \g.

Your MySQL connection id is 13

Server version: 8.0.32 MySQL Community Server - GPL

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affiliates. Other names may be trademarks of their respective  
owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

```
mysql> create database docker;
```

Query OK, 1 row affected (0.02 sec)

```
mysql> use docker;
```

Database changed

```
mysql> exit
```

Bye

bash-4.4#

+++++++

ubuntu@ip-172-31-42-87:~\$ docker pull jenkins

Using default tag: latest

Error response from daemon: manifest for jenkins:latest not found: manifest unknown: manifest unknown

ubuntu@ip-172-31-42-87:~\$ docker pull jenkins/jenkins

Using default tag: latest

latest: Pulling from jenkins/jenkins

bbeef03cda1f: Pull complete

a61ea04afc1d: Pull complete

6990a46c7b5c: Pull complete

e3d7c760cf41: Pull complete

cdb544bd23d8: Pull complete

4a1dc474877f: Pull complete

ab679c9157da: Pull complete

209b2c8639fb: Pull complete

42542409622a: Pull complete

4001cfe35ad4: Pull complete

1ddd2f03d6b8: Pull complete

c74adb4c5237: Pull complete

941a19fa743a: Pull complete

Digest: sha256:e36d66e72b00fb74b2025124cc5865d96cfd76bb443d8c6f8e19978fad85e1b5

Status: Downloaded newer image for jenkins/jenkins:latest

docker.io/jenkins/jenkins:latest

ubuntu@ip-172-31-42-87:~\$ docker run -d --name jenkins-server-docker jenkins/jenkins:latest

931da0801676a6b61178302e5d7c1aad2cbb63d1fdac33bf7bb61d5145d2dc90

ubuntu@ip-172-31-42-87:~\$ docker ps

| CONTAINER ID | IMAGE                  | COMMAND                  | CREATED        | STATUS        | PORTS               | NAMES                 |
|--------------|------------------------|--------------------------|----------------|---------------|---------------------|-----------------------|
| 931da0801676 | jenkins/jenkins:latest | "/usr/bin/tini -- /u..." | 25 seconds ago | Up 24 seconds | 8080/tcp, 50000/tcp | jenkins-server-docker |
| e5229354d866 | mysql:latest           | "docker-entrypoint.s..." | 30 minutes ago | Up 30 minutes | 3306/tcp, 33060/tcp | my-deb                |

ubuntu@ip-172-31-42-87:~\$

ubuntu@ip-172-31-42-87:~\$ docker ps

| CONTAINER ID | IMAGE                  | COMMAND                  | CREATED       | STATUS       | PORTS               | NAMES                 |
|--------------|------------------------|--------------------------|---------------|--------------|---------------------|-----------------------|
| 931da0801676 | jenkins/jenkins:latest | "/usr/bin/tini -- /u..." | 3 minutes ago | Up 3 minutes | 8080/tcp, 50000/tcp | jenkins-server-docker |

e5229354d866 mysql:latest "docker-entrypoint.s..." 33 minutes ago Up 33 minutes 3306/tcp, 33060/tcp my-deb

ubuntu@ip-172-31-42-87:~\$ docker stop 931da0801676

931da0801676

ubuntu@ip-172-31-42-87:~\$

ubuntu@ip-172-31-42-87:~\$ docker rm 931da0801676

931da0801676

ubuntu@ip-172-31-42-87:~\$ docker ps

| CONTAINER ID | IMAGE | COMMAND | CREATED | STATUS | PORTS | NAMES |
|--------------|-------|---------|---------|--------|-------|-------|
|--------------|-------|---------|---------|--------|-------|-------|

|              |              |                          |                |               |                     |        |
|--------------|--------------|--------------------------|----------------|---------------|---------------------|--------|
| e5229354d866 | mysql:latest | "docker-entrypoint.s..." | 35 minutes ago | Up 35 minutes | 3306/tcp, 33060/tcp | my-deb |
|--------------|--------------|--------------------------|----------------|---------------|---------------------|--------|

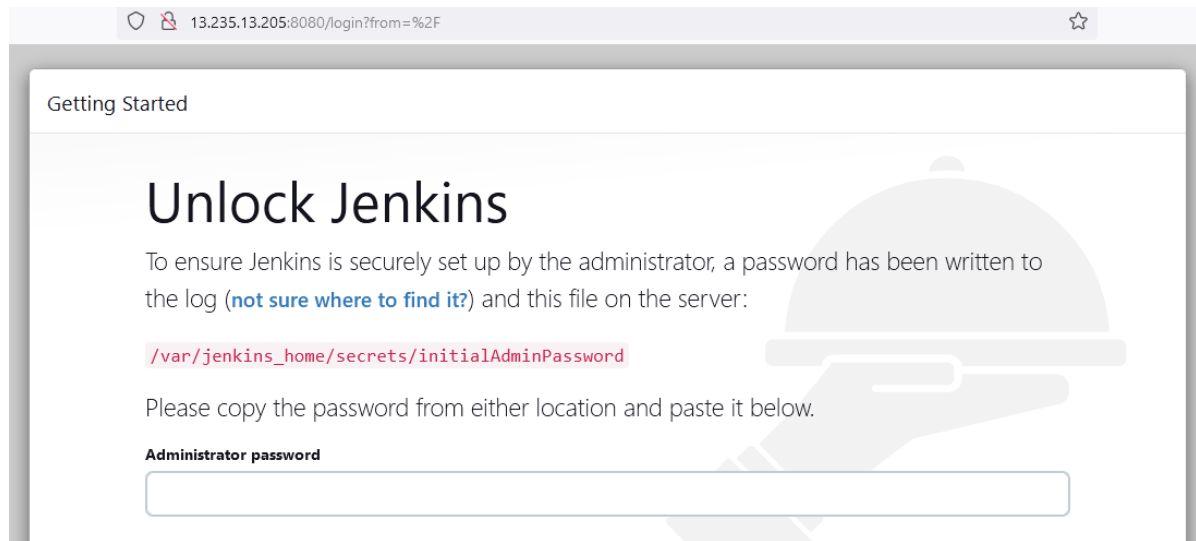
ubuntu@ip-172-31-42-87:~\$

ubuntu@ip-172-31-42-87:~\$ docker run -d --name jenkins-server-docker -p 8080:8080 jenkins/jenkins:latest

ba24cb126cbad4140f1cb7b92e3c7c1dbadd30160a2e8a9c1d5f3d8ee1de2c83

ubuntu@ip-172-31-42-87:~\$

<http://13.235.13.205:8080/>



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Another way to install Docker & create Docker file by connected new machine.

```
sudo apt-get update -y
```

```
sudo apt-get install docker.io
```

```
ubuntu@ip-172-31-41-99:~$ sudo usermod -a -G docker $USER
```

```
ubuntu@ip-172-31-41-99:~$ reboot
```

```
ubuntu@ip-172-31-41-99:~$ docker ps
```

| CONTAINER ID | IMAGE | COMMAND | CREATED | STATUS | PORTS | NAMES |
|--------------|-------|---------|---------|--------|-------|-------|
|--------------|-------|---------|---------|--------|-------|-------|

-Git Clone & install python

[https://github.com/LondheShubham153/react\\_django\\_demo\\_app](https://github.com/LondheShubham153/react_django_demo_app)

[https://github.com/LondheShubham153/react\\_django\\_demo\\_app.git](https://github.com/LondheShubham153/react_django_demo_app.git)

```
ubuntu@ip-172-31-41-99:~$ git clone https://github.com/LondheShubham153/react_django_demo_app.git
```

```
Cloning into 'react_django_demo_app'...
```

```
remote: Enumerating objects: 151, done.
```

```
remote: Counting objects: 100% (35/35), done.
```

```
remote: Compressing objects: 100% (28/28), done.
```

```
remote: Total 151 (delta 19), reused 17 (delta 7), pack-reused 116
```

```
Receiving objects: 100% (151/151), 509.89 KiB | 1.24 MiB/s, done.
```

```
Resolving deltas: 100% (29/29), done.
```

```
ubuntu@ip-172-31-41-99:~$ ls
```

```
memutilization.sh react_django_demo_app
```

```
ubuntu@ip-172-31-41-99:~$ cd react_django_demo_app/
```

```
ubuntu@ip-172-31-41-99:~/react_django_demo_app$ ls
```

```
Dockerfile api      docker-compose.yaml manage.py    tests
```

```
README.md db.sqlite3 frontend      requirements.txt todo_drf
```

```
ubuntu@ip-172-31-41-99:~/react_django_demo_app$ rm Dockerfile
```

```
ubuntu@ip-172-31-41-99:~/react_django_demo_app$
```

```
ubuntu@ip-172-31-41-99:~/react_django_demo_app$ ls
```

```
README.md db.sqlite3      frontend requirements.txt todo_drf
```

```
api      docker-compose.yaml manage.py tests
```

```
ubuntu@ip-172-31-41-99:~/react_django_demo_app$ python --version
```

```
Command 'python' not found, did you mean:
```

```
command 'python3' from deb python3
```

```
command 'python' from deb python-is-python3
```

<https://linuxize.com/post/how-to-install-python-3-9-on-ubuntu-20-04/>

```
ubuntu@ip-172-31-41-99:~/react_django_demo_app$ sudo apt install software-properties-common
```

```
Reading package lists... Done
```

```
Building dependency tree... Done
```

```
Reading state information... Done
```

```
software-properties-common is already the newest version (0.99.22.4).
```

```
software-properties-common set to manually installed.
```

```
0 upgraded, 0 newly installed, 0 to remove and 6 not upgraded.
```

```
ubuntu@ip-172-31-41-99:~/react_django_demo_app$
```

```
ubuntu@ip-172-31-41-99:~/react_django_demo_app$ sudo add-apt-repository ppa:deadsnakes/ppa
```

```
ubuntu@ip-172-31-41-99:~/react_django_demo_app$
```

```
sudo apt install python3.9
```

```
ubuntu@ip-172-31-41-99:~/react_django_demo_app$
```

```
sudo apt install python3.9
```

```
ubuntu@ip-172-31-41-99:~/react_django_demo_app$
```

```
python3.9 --version
```

```
ubuntu@ip-172-31-41-99:~/react_django_demo_app$
```

```
python3.9 --version
```

```
Python 3.9.16
```

```
ubuntu@ip-172-31-41-99:~/react_django_demo_app$
```

```
python3 --version
```

```
Python 3.10.6
```

```
ubuntu@ip-172-31-41-99:~/react_django_demo_app$
```

```
ubuntu@ip-172-31-41-99:~/react_django_demo_app$ sudo apt install python3-pip
```

```
ubuntu@ip-172-31-41-99:~/react_django_demo_app$ pip install django==3.2
```

```
Defaulting to user installation because normal site-packages is not writeable
```

```
Collecting django==3.2
```



Downloading Django-3.2-py3-none-any.whl (7.9 MB)

7.9/7.9 MB 66.8 MB/s eta 0:00:00

Collecting sqlparse>=0.2.2

Downloading sqlparse-0.4.3-py3-none-any.whl (42 kB)

42.8/42.8 KB 8.0 MB/s eta 0:00:00

Requirement already satisfied: pytz in /usr/lib/python3/dist-packages (from django==3.2) (2022.1)

Collecting asgiref<4,>=3.3.2

Downloading asgiref-3.6.0-py3-none-any.whl (23 kB)

Installing collected packages: sqlparse, asgiref, django

WARNING: The script sqlformat is installed in '/home/ubuntu/.local/bin' which is not on PATH.

Consider adding this directory to PATH or, if you prefer to suppress this warning, use --no-warn-script-location.

WARNING: The script django-admin is installed in '/home/ubuntu/.local/bin' which is not on PATH.

Consider adding this directory to PATH or, if you prefer to suppress this warning, use --no-warn-script-location.

Successfully installed asgiref-3.6.0 django-3.2 sqlparse-0.4.3

ubuntu@ip-172-31-41-99:~/react\_django\_demo\_app\$

ubuntu@ip-172-31-41-99:~/react\_django\_demo\_app\$ ls

README.md db.sqlite3 frontend requirements.txt todo\_drf

api docker-compose.yaml manage.py tests

```
ubuntu@ip-172-31-41-99:~/react_django_demo_app$ python3 manage.py runserver
```

```
CTRL+c
```

```
ubuntu@ip-172-31-41-99:~/react_django_demo_app$ cat requirements.txt
```

```
asgiref==3.2.3
```

```
Django==3.0.3
```

```
django-cors-headers==3.2.1
```

```
django-rest-framework==3.11.0
```

```
pytz==2019.3
```

```
sqlparse==0.3.0
```

```
ubuntu@ip-172-31-41-99:~/react_django_demo_app$
```

```
pip3 install Django==3.0.3
```

### **CREATE Docker file:-**

```
ubuntu@ip-172-31-41-99:~/react_django_demo_app$ ls
```

```
README.md db.sqlite3 frontend requirements.txt todo_drf
```

```
api docker-compose.yaml manage.py tests
```

```
ubuntu@ip-172-31-41-99:~/react_django_demo_app$ vim Dockerfile
```

```
ubuntu@ip-172-31-41-99:~/react_django_demo_app$ cat Dockerfile
```

```
FROM python:3.9
```

COPY . .

RUN pip install -r requirements.txt

EXPOSE 8000

CMD ["python","manage.py","runserver","0.0.0.0:8000"]

ubuntu@ip-172-31-41-99:~/react\_django\_demo\_app\$

ubuntu@ip-172-31-41-99:~/react\_django\_demo\_app\$ sudo docker build . -t django-app

Sending build context to Docker daemon 2.676MB

Step 1/5 : FROM python:3.9

---> b05aba0a4b15

Step 2/5 : COPY . .

---> Using cache

---> ace61e27461f

Step 3/5 : RUN pip install -r requirements.txt

---> Using cache

---> 7dbdbf5b3fb6

Step 4/5 : EXPOSE 8000

---> Using cache

---> bd446c3255a6

Step 5/5 : CMD ["python","manage.py","runserver","0.0.0.0:8000"]

---> Using cache

---> 95721f0cf06e

Successfully built 95721f0cf06e

Successfully tagged django-app:latest

ubuntu@ip-172-31-41-99:~/react\_django\_demo\_app\$

ubuntu@ip-172-31-41-99:~/react\_django\_demo\_app\$

ubuntu@ip-172-31-41-99:~/react\_django\_demo\_app\$ docker images

| REPOSITORY | TAG    | IMAGE ID     | CREATED            | SIZE  |
|------------|--------|--------------|--------------------|-------|
| django-app | latest | 95721f0cf06e | About a minute ago | 962MB |
| <none>     | <none> | 5fdc0c2e5326 | 4 minutes ago      | 918MB |
| <none>     | <none> | f231727d0c83 | 15 minutes ago     | 962MB |
| <none>     | <none> | 1a9f4e4acc99 | 16 minutes ago     | 918MB |
| python     | 3.9    | b05aba0a4b15 | 4 days ago         | 915MB |

```
ubuntu@ip-172-31-41-99:~/react_django_demo_app$
```

```
ubuntu@ip-172-31-41-99:~/react_django_demo_app$ docker run -d -p 8000:8000 django-app:latest
```

```
b9347d29014e11164380e8573a1c14ced026d71402b0408dd03ee931e43ffcea
```

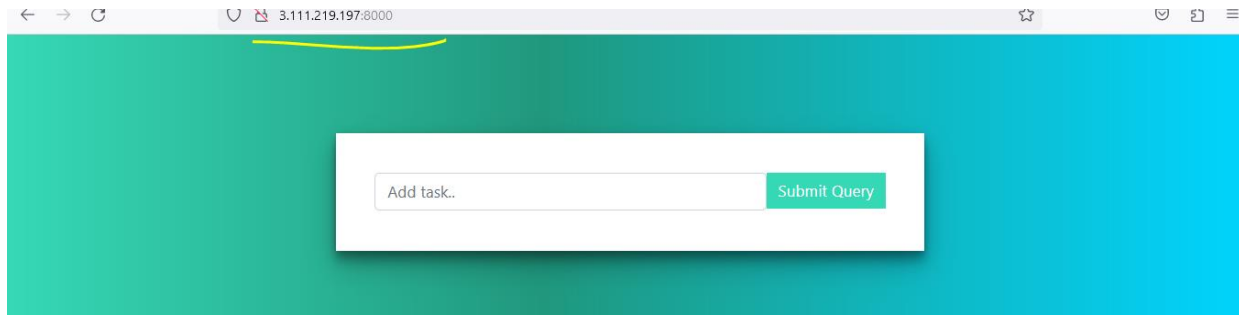
```
ubuntu@ip-172-31-41-99:~/react_django_demo_app$
```

```
ubuntu@ip-172-31-41-99:~/react_django_demo_app$ docker ps
```

| CONTAINER ID | IMAGE             | COMMAND                  | CREATED        | STATUS        | PORTS                                     | NAMES          |
|--------------|-------------------|--------------------------|----------------|---------------|-------------------------------------------|----------------|
| b9347d29014e | django-app:latest | "python manage.py ru..." | 20 seconds ago | Up 20 seconds | 0.0.0.0:8000->8000/tcp, :::8000->8000/tcp | friendly_jones |

```
ubuntu@ip-172-31-41-99:~/react_django_demo_app$
```

<http://3.111.219.197:8000/>



END.

