Securing Django Admin login with OTP (2 Factor Authentication)

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Multi factor authentication is one of the most basic principle when adding security for our applications. In this tutorial, we will be adding multi factor authentication using OTP Method. This article is in continuation of Blog CMS Project in Django. Check this out here – Building Blog CMS (Content Management System) with Django

Setup 2 Factor Authentication for Django Project

We will install TOTP package for our blog CMS which will add OTP security for our admin login. First install django-otp package

```
pip install django-otp
```

and add '**django_otp, django_otp.plugins.otp_totp**' in our installed apps and **django_otp.middleware.OTPMiddleware** in middleware section of our settings file.

Python3

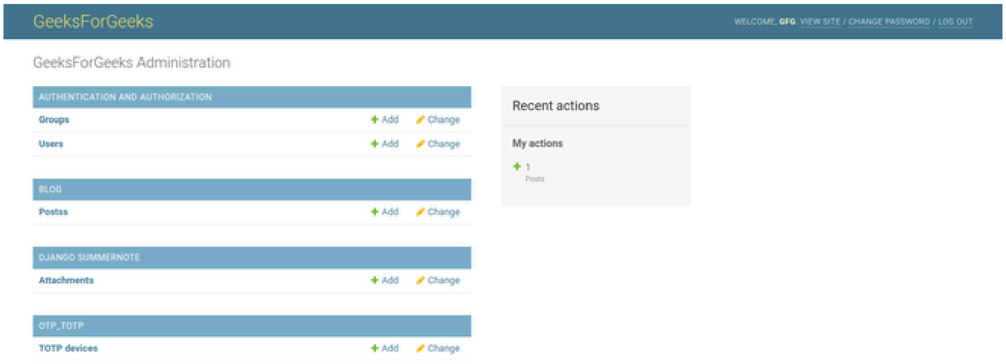
```
INSTALLED_APPS = [
    'django.contrib.admin',
    'django.contrib.auth',
    'django.contrib.contenttypes',
    'django.contrib.sessions',
    'django.contrib.messages',
    'django.contrib.staticfiles',
    'django_otp',
    'django_otp.plugins.otp_totp'

]

MIDDLEWARE = [
    'django.middleware.security.SecurityMiddleware',
    'django.contrib.sessions.middleware.SessionMiddleware',
    'django.middleware.common.CommonMiddleware',
    'django.middleware.csrf.CsrfViewMiddleware',
    'django.contrib.auth.middleware.AuthenticationMiddleware',
    'django.contrib.messages.middleware.MessageMiddleware',
    'django.middleware.clickjacking.XFrameOptionsMiddleware',
    'django_otp.middleware.OTPMiddleware'
]
```

Now run,

```
# migrate our app
python3 manage.py migrate
```

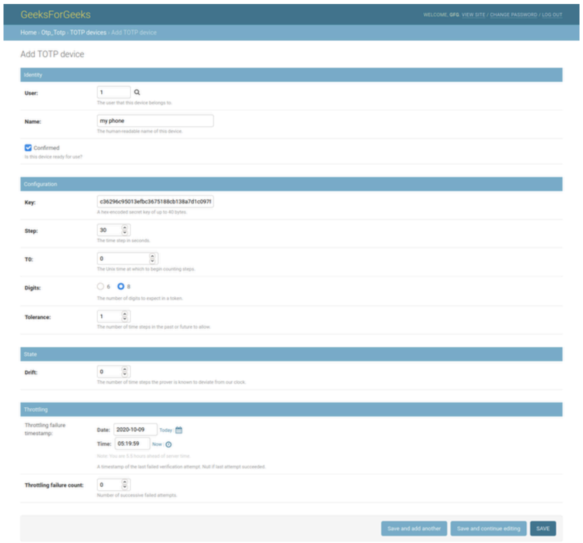
Creating a TOTP Device –

Now log into django admin to create an TOTP device. You can see it after logging in



login page

Click add and fill the details to create a new TOTP qrcode



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Home › Otp_Totp › TOTP devices › Add TOTP device

Add TOTP device

Identity

User: 1
The user that this device belongs to.

Name: my phone
The human-readable name of this device.

☑ Confirmed
Is this device ready for use?

Configuration

Key: c36296c95013efbc3675188cb138a7d1c097f
A hex-encoded secret key of up to 40 bytes.

Step: 30
The time step in seconds.

T0: 0
The Unix time at which to begin counting steps.

Digits: ○ 6 ● 8
The number of digits to expect in a token.

Tolerance: 1
The number of time steps in the past or future to allow.

State

Drift: 0
The number of time steps the prover is known to deviate from our clock.

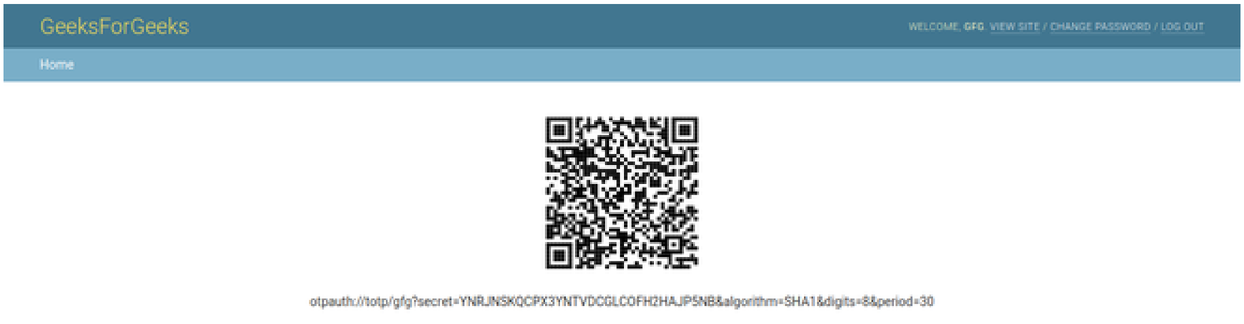
Throttling

Throttling failure timestamp: Date: 2020-10-09 Today | Time: 05:19:59 Now |
Note: You are 5.5 hours ahead of server time.
A timestamp of the last failed verification attempt. Null if last attempt succeeded.

Throttling failure count: 0
Number of successive failed attempts.

add TOTP devices

Now again go into totp device section and open the QRcode and scan it with your TOTP apps like Authy, Google Authenticator apps.



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Home

otpauth://totp/gfg?secret=YNRJNSKQCPX3YNTVDCGLCOFH2HAJP5NB&algorithm=SHA1&digits=8&period=30

scan the qrcode

Set Admin OTP Class –

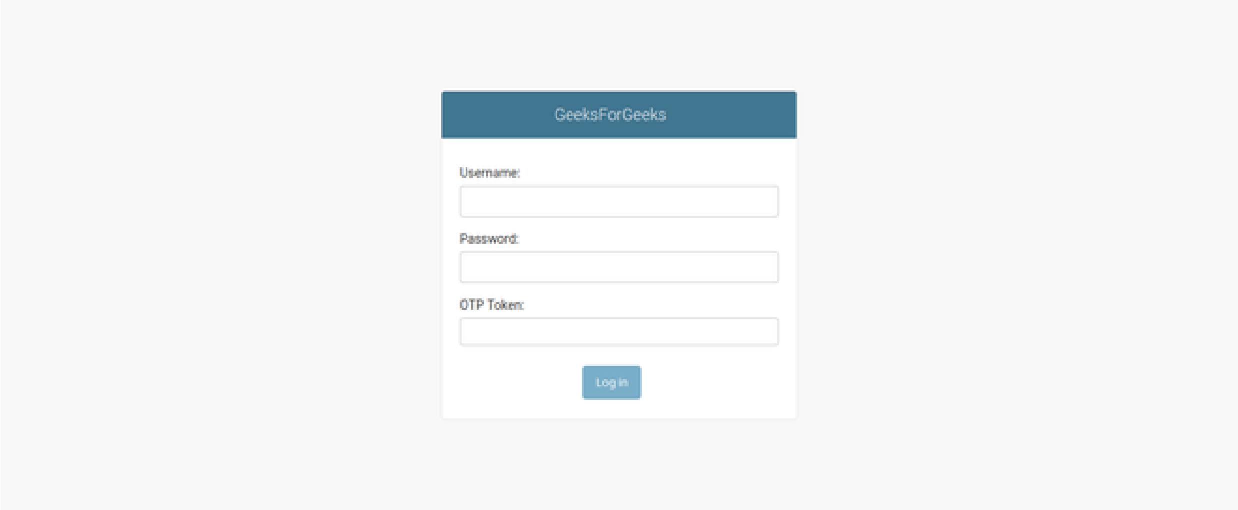
Now go into django urls.py file in gfgblog, not in blog urls.py and add the lines

Python3

```
from django_otp.admin import OTPAdminSite

admin.site.__class__ = OTPAdminSite
```

Now logout and login into django admin you have enter OTP everytime you need to login into django admin.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Username:

Password:

OTP Token:

django admin with OTP

Some Basic Security Principles to follow

- Keep Debug = False in Production
- Limit Allowed hosted to our Server IP, localhost, and hostnames
- Keep Secret key strong and safe
- All ways use HTTPS in Production
- Keep a check on user uploads if being managed by multiple users
- Keep your database secure and don't use SQLite in Production
- Try to use Security and content headers in production, a few headers are given below add these in Settings.py

Python3

```
SECURE_SSL_REDIRECT = True
SESSION_COOKIE_SECURE = True
SESSION_COOKIE_SECURE = True
SECURE_BROWSER_XSS_FILTER = True
SECURE_HSTS_SECONDS = 31536000
SECURE_HSTS_INCLUDE_SUBDOMAINS = True
SECURE_HSTS_PRELOAD = True
SECURE_CONTENT_TYPE_NOSNIFF = True
CSRF_COOKIE_SECURE = True
```

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