

Token Authentication:-

By using token authentication model, user (or) clients are authenticated by using the token value. For every user admin person generates a token value and it will be stored inside tokens table.

To create the token value inside tokens table, add one default application which name as "rest-framework.authtoken" inside Installed app section in settings.py

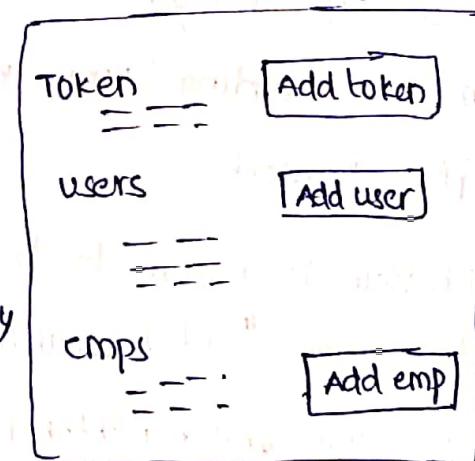
For this application purpose, execute make migrations and migrate commands, then only tokens table created inside database.

Generating the token value :-

1. Create the superuser credentials and login into admin site
2. Admin person can create new users if required any, by click 'Add user'
Then all user names are stored in users table in admin site
3. To creating the token value for any particular user, then click token table and click add token button, then it displays one dropdown menu which shows all existing users

users

→ Now select any required user and click save button, the successfully created value for this user



* Before accessing the rest API urls, a user has to get a token value from the database by sending username & password

* When we are sending username and password in the form of json request then one built-in view is responsible to get the token value from tokens table by taken User credentials

→ This view name is obtain-auth-token, which is available in

from rest-framework.authtoken.Views import obtain_auth_token

* To executing this view we required one url

url(r'^gettoken/\$', obtain_auth_token),

* This view is getting the token values from tokens table with respect to username and password

* Now by using this token value we will send API request to communicate the database

* After obtaining the token value, user has to send this token value with 'Authorization' header to access the restAPI.

Eg:- open postman → headers

Enter key as 'Authorization' and value as 'Token token-value'

Q which type of request is required to get the token value from the db?

Sol: we are sending 'post' request only to get the token value but not 'GET' request

Q which view is responsible to get the token value from db?

Sol: by using "obtain-auth-token" view available in rest-framework.authtoken.Views

Q How do we get token value from database?

Sol: by using ~~username and password~~ 'gettken' and username & password

Drawbacks of Token Authentication:

* Drawback: for every request, it will check in database for username and password so it creates reduce scalability.

Project :

create a project to providing the token authentication to access the APIs

step-1: project name : tokenauthenticationpro

step-2: application name : tokenauthenticationapp

step-3: db name : token db

step-4: open settings.py add our app name , rest-framework , rest-framework-authToken

INSTALLED_APPS = [

.....

'tokenauthenticationapp',

'rest_framework',

'rest_framework-authToken',

]

step-5: configure the database in 'settings.py'

step-6: Add project level security (in step 5) token authentication setting by using rest-framework dictionary variable

REST_FRAMEWORK = {

'DEFAULT_AUTHENTICATION_CLASSES':

(rest_framework-authentication.TokenAuthentication,),

'DEFAULT_PERMISSION_CLASSES':

(rest_framework.permissions.IsAuthenticated,),

}

step-7: open models.py

```
from django.models import
```

```
from django.db import models
```

```
class Emp (models.Model):
```

empid = models. Integerfield (primary_key = True)

empname = models. CharField (max_length = 200)

empsal = models. DecimalField (max_digits = 10, decimal_places = 2)

created = models. DateTimeField (auto_now_add = True)

modified = models. DateTimeField (auto_now = True)

step-8: open serializers.py

```
from .models import Emp
```

```
from .rest_framework import serializers
```

```
class empserializers(serializers.ModelSerializer):
```

```
    class Meta :
```

```
        model = Emp
```

```
        fields = '__all__'
```

step-9: open views.py

```
from .models import Emp
```

```
from rest_framework import viewsets
```

```
from django import views
```

```
from .serializers import empserializer
```

```
class Emp_viewset(viewsets.ModelViewsets):
```

```
    queryset = Emp.objects.all()
```

```
    serializer_class = empserializers
```

```
    authentication_classes = (SessionAuthentication,)
```

```
    permission_classes = (IsAdminUser,)
```

step-10: open project level urls

```
- from django.contrib import admin
```

```
- from django.conf.urls import url, include
```

```
- from rest_framework.authtoken import views
```

```
urlpatterns = [
```

```
    url(r'^admin/', admin.site.urls),
    url(r'^api/$', include('tokenAuthenticationApp.urls')),
    url(r'^gettokens/$', views.obtain_auth_token),
```

```
]
```

Step-11:-

open app level urls.py

```
from django.conf.urls import url, include
```

```
from .views import EmpViewSet
```

```
from rest_framework.routers import DefaultRouter
```

```
router = DefaultRouter()
```

```
router.register(r'^emp$', EmpViewSet)
```

```
urlpatterns = [
```

```
    url(r'^', include(router.urls)),
```

```
]
```

Step-12: Execute makemigrations, migrate and create superUser and runserver

NOTE:-

→ create one admin user , username : srinivas

password : admin123

→ create another user like active person (Not admin) username : flarish
password : admin123

→ open postman and access the 'srinivas' related token value

POST 127.0.0.1:8000/api/gettoken

Headers : Body

key	value
Username	srinivas
Password	admin123

Then we will get survival token value

```
{ "token": "fd635786cfdfgh1239f44"
```

}

→ select GET method and select url and click on headers

key

value

Authorization

Token fd635786cfdfgh1239f44

Then we will get successfully data from database

→ Now execute above process with 'naveen' credentials then we are getting message like

```
{ "detail": "you do not have permission to perform this action"
```

}

Bcz, this person is a normal user, but we used permission class as 'ISAdminUser', that why only admin persons can access APIs