**REST API (Django Rest Framework-DRF)**

**Session-15**

**Authentication and Permissions in DRF:**

* Authentication is the mechanism of associating an incoming request with a set of identifying credentials, such as the user the request came from, or the token that it was signed with.
* Authentication is the process of checking the user credentials are correct or not (username and password)**.**
* REST framework provides several authentication schemes, and also allows you to implement custom schemes.
* Authentication always runs at the very start of the view, before the permission checks occur, and before any other code is allowed to proceed.
* Don't forget that **authentication by itself won't allow or disallow an incoming request**; it simply identifies the credentials that the request was made with.

**Types of Authentication:**

1. Basic Authentication
2. Token Authentication
3. Session Authentication
4. Remote User Authentication
5. Custom Authentication

**Permissions:**

* Permissions determine whether a request should be granted or denied access.
* Permission checks are always run at the very start of the view, before any other code is allowed to proceed. Permission checks will typically use the authentication information in the request.user and request.auth properties to determine if the incoming request should be permitted.
* Permissions are used to grant or deny access for different classes of users to different parts of the API.
* The simplest style of permission would be to allow access to any authenticated user, and deny access to any unauthenticated user. This corresponds to the IsAuthenticated class in REST framework.

**Permission classes:**

* REST Framework will provide list of permission classes

1. AllowAny
2. IsAuthenticated
3. IsAdminUser
4. IsAuthenticatedorReadOnly
5. DjangoModelPermissions
6. DjangoModelPermissionsorAnonReadOnly
7. DjangoObjectPermissions

**Settings.py:**

INSTALLED\_APPS = [  
 **'django.contrib.admin'**,  
 **'django.contrib.auth'**,  
 **'django.contrib.contenttypes'**,  
 **'django.contrib.sessions'**,  
 **'django.contrib.messages'**,  
 **'django.contrib.staticfiles'**,  
 **'myapp.apps.MyappConfig'**,  
 **'rest\_framework'**,  
  
 **'myapp7'**,  
]

**Models.py:**

**from** django.db **import** models  
  
*# Create your models here.***class** Manager(models.Model):  
 name=models.CharField(max\_length=20)  
 address=models.CharField(max\_length=20)  
 mail = models.CharField(max\_length=20)  
 age = models.IntegerField()

**admin.py:**

**from** django.contrib **import** admin  
**from** myapp7.models **import** Manager  
*# Register your models here.*@admin.register(Manager)  
**class** ManagerAdmin(admin.ModelAdmin):  
 list\_display = [**'id'**,**'name'**,**'address'**,**'mail'**,**'age'**]

**Now go to terminal and then type the following commands**

* Python manage.py makemigrations
* Python manage.py migrate
* Python manage.py createsuperuser
* Now run server: python manage.py runserver
* Now go to browser: <http://127.0.0.1:8000/admin>
* Insert few records

Create a new python file with the name serializers.py.

**serializer.py:**

**from** rest\_framework **import** serializers  
**from** myapp7.models **import** Manager  
  
**class** ManagerSerializer(serializers.ModelSerializer):  
 **class** Meta:  
 model=Manager  
 fields=[**'id'**,**'name'**,**'address'**,**'mail'**,**'age'**]

**views.py:**

**from** django.shortcuts **import** render  
**from** myapp7.models **import** Manager  
**from** myapp7.serializers **import** ManagerSerializer  
**from** rest\_framework **import** viewsets  
**from** rest\_framework.authentication **import** BasicAuthentication  
**from** rest\_framework.permissions **import** IsAuthenticated,AllowAny,IsAdminUser  
  
*# Create your views here.***class** ManagerModelViewSet(viewsets.ModelViewSet):  
 queryset = Manager.objects.all()  
 serializer\_class = ManagerSerializer  
 *#authentication\_classes = [BasicAuthentication]  
 #permission\_classes = [AllowAny]  
 #permission\_classes = [IsAuthenticated]  
 #permission\_classes = [IsAdminUser]*

**urls.py**:

**from** django.contrib **import** admin  
**from** django.urls **import** path,include  
**from** myapp7 **import** views  
**from** rest\_framework.routers **import** DefaultRouter  
  
*#create a router object*router=DefaultRouter()  
  
*#register your viewset with router*router.register(**'ManagerViewset'**,views.ManagerModelViewSet,basename=**'manager'**)  
  
urlpatterns = [  
 path(**'admin/'**, admin.site.urls),  
 path(**''**,include(router.urls)),  
  
]

**Note**: instead of implement authentication in views.py file we can also use settings.py file code like below.

**settings.py:**

REST\_FRAMEWORK={  
 **'DEFAULT\_AUTHENTICATION\_CLASSES'**:[**'rest\_framework.authentication.BasicAuthentication'**],  
 **'DEFAULT\_PERMISSION\_CLASSES'**:[**'rest\_framework.permissions.IsAuthenticated'**]  
}