

## Project: To-Do List API using Django REST Framework (DRF)

### Step 1: Project Setup

#### a. Create project folder

```
mkdir django_todo_api
```

```
cd django_todo_api
```

#### b. Create virtual environment

```
python -m venv venv
```

```
source venv/bin/activate # Windows: venv\Scripts\activate
```

#### c. Install Django and Django REST framework

```
pip install django djangorestframework
```

#### d. Create Django project and app

```
django-admin startproject todo_project .
```

```
python manage.py startapp todos
```

### Step 2: Update settings.py

#### todo\_project/settings.py:

```
INSTALLED_APPS = [  
    ...  
    'rest_framework',  
    'todos',  
]
```

### Step 3: Create the To-Do Model (todos/models.py)

```
from django.db import models  
  
class Todo(models.Model):  
    title = models.CharField(max_length=200)  
    description = models.TextField(blank=True)  
    completed = models.BooleanField(default=False)  
    created_at = models.DateTimeField(auto_now_add=True)  
    def __str__(self):  
        return self.title
```

### Step 4: Migrate the Database

```
python manage.py makemigrations
```

```
python manage.py migrate
```

### Step 5: Create a Serializer (todos/serializers.py)

```
from rest_framework import serializers
from .models import Todo
class TodoSerializer(serializers.ModelSerializer):
    class Meta:
        model = Todo
        fields = '__all__'
```

### Step 6: Create API Views (todos/views.py)

```
from rest_framework import viewsets
from .models import Todo
from .serializers import TodoSerializer
class TodoViewSet(viewsets.ModelViewSet):
    queryset = Todo.objects.all().order_by('-created_at')
    serializer_class = TodoSerializer
```

### Step 7: Define URLs (todos/urls.py)

```
from django.urls import path, include
from rest_framework.routers import DefaultRouter
from .views import TodoViewSet
router = DefaultRouter()
router.register(r'todos', TodoViewSet)
urlpatterns = [
    path("", include(router.urls)),
]
```

### Step 8: todo\_project/urls.py:

```
from django.contrib import admin
from django.urls import path, include
urlpatterns = [
    path('admin/', admin.site.urls),
    path('api/', include('todos.urls')),
]
```

### Step 9: Run the Development Server

```
python manage.py runserver
```

Visit the API at:

<http://127.0.0.1:8000/api/todos/>