

Creating Django virtual environment and activating it.

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL

Microsoft Windows [Version 10.0.19045.4355]
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J:\My Drive\Acumen Cognitive task\Django>python -m venv django_venv

J:\My Drive\Acumen Cognitive task\Django>"j:\My Drive\Acumen Cognitive task\Django\django_venv\Scripts\activate"

(django_venv) J:\My Drive\Acumen Cognitive task\Django>
```

Installing Django

```
(django_venv) J:\My Drive\Acumen Cognitive task\Django>pip install django
Collecting django
  Downloading Django-5.0.6-py3-none-any.whl (8.2 MB)
    | 8.2 MB 119 kB/s
Collecting tzdata
  Downloading tzdata-2024.1-py2.py3-none-any.whl (345 kB)
    | 345 kB 123 kB/s
Collecting sqlparse>=0.3.1
  Downloading sqlparse-0.5.0-py3-none-any.whl (43 kB)
    | 43 kB 71 kB/s
Collecting asgiref<4,>=3.7.0
  Downloading asgiref-3.8.1-py3-none-any.whl (23 kB)
Collecting typing-extensions>=4
  Downloading typing_extensions-4.12.2-py3-none-any.whl (37 kB)
Installing collected packages: typing-extensions, tzdata, sqlparse, asgiref, django
Successfully installed asgiref-3.8.1 django-5.0.6 sqlparse-0.5.0 typing-extensions-4.12.2 tzdata-2024.1
WARNING: You are using pip version 21.2.4; however, version 24.1 is available.
You should consider upgrading via the 'J:\My Drive\Acumen Cognitive task\Django\django_venv\Scripts\python.exe -m pip install --upgrade pip' command.

(django_venv) J:\My Drive\Acumen Cognitive task\Django>
```

Starting project and creating app

```
(django_venv) J:\My Drive\Acumen Cognitive task\Django>django-admin startproject apiproject

(django_venv) J:\My Drive\Acumen Cognitive task\Django>cd apiproject

(django_venv) J:\My Drive\Acumen Cognitive task\Django\apiproject>python manage.py startapp apiapp

(django_venv) J:\My Drive\Acumen Cognitive task\Django\apiproject>
```

Installing Rest framework

```
(django_venv) J:\My Drive\Acumen Cognitive task\Django\apiproject>pip install djangorestframework
Collecting djangorestframework
  Downloading djangorestframework-3.15.2-py3-none-any.whl (1.1 MB)
    | 1.1 MB 105 kB/s
Requirement already satisfied: django>=4.2 in j:\my drive\acumen cognitive task\django\django_venv\lib\site-packages (3.2.15)
Requirement already satisfied: asgiref<4,>=3.7.0 in j:\my drive\acumen cognitive task\django\django_venv\lib\site-packages (3.8.1)
Requirement already satisfied: tzdata in j:\my drive\acumen cognitive task\django\django_venv\lib\site-packages (2024.1)
Requirement already satisfied: sqlparse>=0.3.1 in j:\my drive\acumen cognitive task\django\django_venv\lib\site-packages (0.5.0)
Requirement already satisfied: typing-extensions>=4 in j:\my drive\acumen cognitive task\django\django_venv\lib\site-packages (4.12.2)
Installing collected packages: djangorestframework
Successfully installed djangorestframework-3.15.2
WARNING: You are using pip version 21.2.4; however, version 24.1 is available.
You should consider upgrading via the 'J:\My Drive\Acumen Cognitive task\Django\apiproject\Scripts\python.exe -m pip install --upgrade pip' command.
```

Registering framework and app in settings.py

```
settings.py X
apiproject > apiproject > settings.py > ...
33 INSTALLED_APPS = [
34     'django.contrib.admin',
35     'django.contrib.auth',
36     'django.contrib.contenttypes',
37     'django.contrib.sessions',
38     'django.contrib.messages',
39     'django.contrib.staticfiles',
40     'rest_framework',
41     'apiapp',
42 ]
```

Creating **app_urls.py** in app

Include app_urls at project level in urls.py

```
17 from django.contrib import admin
18 from django.urls import path, include
19
20 urlpatterns = [
21     path('admin/', admin.site.urls),
22     path('', include('myapp.urls')),
23 ]
```

Creating template folder and registering in settings.py

```
55
56 import os
57 TEMPLATES = [
58     {
59         'BACKEND': 'django.template.backends.django.DjangoTemplates',
60         'DIRS': [os.path.join(BASE_DIR, 'templates')],
61         'APP_DIRS': True,
62         'OPTIONS': {
```

Creating **user_form.html** in templates

```

templates > apiapp > <> user_form.html > ...
1  <!DOCTYPE html>
2  <html lang="en">
3  <head>
4      <meta charset="UTF-8">
5      <meta http-equiv="X-UA-Compatible" content="IE=edge">
6      <meta name="viewport" content="width=device-width, initial-scale=1.0">
7      <title>User Form</title>
8  </head>
9  <body>
10     <h1>User Details</h1>
11     <form action="{% url 'process_form' %}" method="post">
12         {% csrf_token %}
13         <label for="name">Name:</label>
14         <input type="text" id="name" name="name"><br>
15         <label for="age">Age:</label>
16         <input type="number" id="age" name="age"><br>
17         <label for="salary">Salary:</label>
18         <input type="number" id="salary" name="salary"><br>
19         <input type="submit" value="Submit">
20     </form>
21 </body>
22 </html>

```

Models.py

```

apiproject > apiapp > models.py > ...
1  from django.db import models
2
3  # Create your models here.
4
5  class User(models.Model):
6      name = models.CharField(max_length=50, null=False)
7      age = models.PositiveIntegerField()
8      salary = models.PositiveIntegerField()
9

```

View.py

```

7  # Create your views here.
8
9  class Userdetails(APIView):
10     def get(self, request):
11         users = User.objects.all().values()
12         return Response({"User": users})
13
14
15     def post(self, request):
16         User.objects.create(name = request.data["name"],
17                             age = request.data["age"],
18                             salary = request.data["salary"],)
19         users = User.objects.all().filter( name = request.data["name"]).values()
20         return Response({"Message": "New user added", "User": users})

```

Makemigrations and migrate

```
(django_venv) J:\My Drive\Acumen Cognitive task\Django\apiproject>python manage.py makemigrations
Migrations for 'apiapp':
  apiapp\migrations\0001_initial.py
    - Create model User

(django_venv) J:\My Drive\Acumen Cognitive task\Django\apiproject>python manage.py migrate
Operations to perform:
  Apply all migrations: apiapp
Running migrations:
  Applying apiapp.0001_initial... OK
```

Runserver

```
(django_venv) J:\My Drive\Acumen Cognitive task\Django\apiproject>python manage.py runserver
```

Django REST framework

Userdetails

OPTIONS GET

GET /user/?format=api

HTTP 200 OK
 Allow: GET, POST, HEAD, OPTIONS
 Content-Type: application/json
 Vary: Accept

```
{
  "User": []
}
```

Media type: application/json

Content:

```
Allow: GET, POST, HEAD, OPTIONS
Content-Type: application/json
Vary: Accept

{
  "Message": "New user added",
  "User": [
    {
      "id": 1,
      "name": "Yash",
      "age": 23,
      "salary": 25000
    }
  ]
}
```

Performing form validation

Creating serializers.py

```
apiproject > apiapp > serializers.py > ...
1
2 from rest_framework import serializers
3
4
5 class Userserializer(serializers.Serializer):
6     name = serializers.CharField(label = "Enter name:")
7     age = serializers.PositiveIntegerField(label = "Enter age:")
8     salary = serializers.PositiveIntegerField(label = "Enter salary:")
```

Changes in views.py

```
class Userdetails(APIView):  
    serializer_class = Userserializer  
  
    def get(self, request):  
        users = User.objects.all().values()  
        return Response({"User": users})  
  
    def post(self, request):  
        print("request data: ", request.data)  
        serializer_obj = Userserializer(data= request.data)  
  
        if (serializer_obj.is_valid()):  
            User.objects.create(name = request.data["name"],  
                                age = request.data["age"],  
                                salary = request.data["salary"],)  
  
        users = User.objects.all().filter( name = request.data["name"]).values()  
        return Response({"Message": "New user added", "User": users})
```

Runserver

Raw data HTML form

Enter name:

Enter age:

Enter salary:

POST

127.0.0.1:8000/user/?format=json

```
1 {  
2   "User": [  
3     {  
4       "id": 1,  
5       "name": "Yash",  
6       "age": 23,  
7       "salary": 25000  
8     },  
9     {  
10      "id": 2,  
11      "name": "Amit",  
12      "age": 17,  
13      "salary": 20000  
14    }  
15  ]  
16 }
```

Submitting task incomplete because of deadline, some errors to be solve