

## Задание

Вариант	Предметная область	
	Класс 1	Класс 2
26	Студенческая группа	Учебный курс

1. Создайте проект Python Django с использованием стандартных средств Django.
2. Создайте модель Django ORM, содержащую две сущности, связанные отношением один-ко-многим в соответствии с Вашим вариантом из условий рубежного контроля №1.
3. С использованием стандартного механизма Django сгенерируйте по модели макет веб-приложения, позволяющий добавлять, редактировать и удалять данные.
4. Создайте представление и шаблон, формирующий отчет, который содержит соединение данных из двух таблиц.

---

Исходный код

## settings.py

```
"""
Django settings for RK_2 project.

Generated by 'django-admin startproject' using Django 4.0.

For more information on this file, see
https://docs.djangoproject.com/en/4.0/topics/settings/

For the full list of settings and their values, see
https://docs.djangoproject.com/en/4.0/ref/settings/
"""

from pathlib import Path

# Build paths inside the project like this: BASE_DIR / 'subdir'.
BASE_DIR = Path(__file__).resolve().parent.parent

# Quick-start development settings - unsuitable for production
# See https://docs.djangoproject.com/en/4.0/howto/deployment/checklist/

# SECURITY WARNING: keep the secret key used in production secret!
SECRET_KEY = 'django-insecure-
x@6c#51*5efslu(ypwc93jb=ue32a)t@e_tnp4pg402i@9)raz'

# SECURITY WARNING: don't run with debug turned on in production!
DEBUG = True

ALLOWED_HOSTS = []

# Application definition

INSTALLED_APPS = [
    'django.contrib.admin',
```

```

'django.contrib.auth',
'django.contrib.contenttypes',
'django.contrib.sessions',
'django.contrib.messages',
'django.contrib.staticfiles',
'rest_framework',
'App.apps.AppConfig',
]

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',
]

ROOT_URLCONF = 'RK_2.urls'

TEMPLATES = [
{
    'BACKEND': 'django.template.backends.django.DjangoTemplates',
    'DIRS': [BASE_DIR / 'templates']
    ,
    'APP_DIRS': True,
    'OPTIONS': {
        'context_processors': [
            'django.template.context_processors.debug',
            'django.template.context_processors.request',
            'django.contrib.auth.context_processors.auth',
            'django.contrib.messages.context_processors.messages',
        ],
    },
},
]

WSGI_APPLICATION = 'RK_2.wsgi.application'

```

```

# Database
# https://docs.djangoproject.com/en/4.0/ref/settings/#databases

```

```

DATABASES = {
    'default': {
        'ENGINE': 'django.db.backends.sqlite3',
        'NAME': BASE_DIR / 'db.sqlite3',
    }
}

```

```

# Password validation
# https://docs.djangoproject.com/en/4.0/ref/settings/#auth-password-validators

```

```

AUTH_PASSWORD_VALIDATORS = [
{
    'NAME':
'django.contrib.auth.password_validation.UserAttributeSimilarityValidator',

```

```

    },
    {
        'NAME':
'django.contrib.auth.password_validation.MinimumLengthValidator',
    },
    {
        'NAME':
'django.contrib.auth.password_validation.CommonPasswordValidator',
    },
    {
        'NAME':
'django.contrib.auth.password_validation.NumericPasswordValidator',
    },
]

# Internationalization
# https://docs.djangoproject.com/en/4.0/topics/i18n/

LANGUAGE_CODE = 'ru-ru'

TIME_ZONE = 'UTC'

USE_I18N = True

USE_TZ = True

# Static files (CSS, JavaScript, Images)
# https://docs.djangoproject.com/en/4.0/howto/static-files/

STATIC_URL = 'static/'

# Default primary key field type
# https://docs.djangoproject.com/en/4.0/ref/settings/#default-auto-field

DEFAULT_AUTO_FIELD = 'django.db.models.BigAutoField'

```

## models.py

```

from django.db import models

# Create your models here.
class Course(models.Model):
    number = models.CharField('Название курса', max_length=50)

class Group(models.Model):
    course = models.ForeignKey(Course, on_delete=models.CASCADE)
    number = models.CharField('Номер группы', max_length=50)

```

## serializers.py

```

from rest_framework import serializers
from .models import Course, Group

class CourseSerializer(serializers.ModelSerializer):
    class Meta:

```

```
model = Course
fields = ['id', 'number']
```

```
class GroupSerializer(serializers.ModelSerializer):
    class Meta:
        model = Group
        fields = ['id', 'course', 'number']
```

## views.py

```
from rest_framework import viewsets
from .serializers import CourseSerializer, GroupSerializer
from .models import Course, Group
from django.shortcuts import render
from django.http import Http404
```

*# Create your views here.*

```
class CourseViewSet(viewsets.ModelViewSet):
    queryset = Course.objects.all()
    serializer_class = CourseSerializer
```

```
class GroupViewSet(viewsets.ModelViewSet):
    queryset = Group.objects.all()
    serializer_class = GroupSerializer
```

```
def CourseList(request):
    return render(request, 'course/list.html', {'c_list':
Course.objects.all()})
```

```
def GroupList(request):
    return render(request, 'group/list.html', {'g_list': Group.objects.all()})
```

```
def CourseView(request, course_id=0):
    try:
        c = Course.objects.get(id=course_id)
    except:
        raise Http404('Курс не найден!')
    return render(request, 'course/detail.html', {'course': c})
```

```
def GroupView(request, group_id):
    try:
        g = Group.objects.get(id=group_id)
    except:
        raise Http404('Группа не найдена!')
    return render(request, 'group/detail.html', {'group': g})
```

## urls.py

*"""RK\_2 URL Configuration*

*The `urlpatterns` list routes URLs to views. For more information please see:  
<https://docs.djangoproject.com/en/4.0/topics/http/urls/>*

Examples:

Function views

1. Add an import: `from my_app import views`
2. Add a URL to urlpatterns: `path('', views.home, name='home')`

Class-based views

1. Add an import: `from other_app.views import Home`
2. Add a URL to urlpatterns: `path('', Home.as_view(), name='home')`

Including another URLconf

1. Import the `include()` function: `from django.urls import include, path`
2. Add a URL to urlpatterns: `path('blog/', include('blog.urls'))`

```
"""
from django.contrib import admin
from django.urls import path, include
from rest_framework import routers
from App import views as app_views

router = routers.DefaultRouter()
router.register(r'courses', app_views.CourseViewSet)
router.register(r'groups', app_views.GroupViewSet)

# Wire up our API using automatic URL routing.
# Additionally, we include login URLs for the browsable API.
urlpatterns = [
    path('', include(router.urls)),
    path('admin/', admin.site.urls),
    path('app/c_list', app_views.CourseList),
    path('app/g_list', app_views.GroupList),
    path('app/c/<int:course_id>', app_views.CourseView, name='course_detail'),
    path('app/g/<int:group_id>', app_views.GroupView, name='group_detail')
]
```

## base.html

```
<!DOCTYPE html>
<html lang="ru">
<head>
    <meta charset="UTF-8">
    <title>{% block title %}Рубежный контроль № 2{% endblock %}</title>
</head>
<body>

    {% block content %}{% endblock %}

<hr>
<center>Семёнова А. А. ИУ5Ц-74Б</center>

</body>
</html>
```

## course/list.html

```
{% extends 'base.html' %}

{% block title %}ПК №2{% endblock %}

{% block content %}

    <center><h1>Список курсов</h1></center><hr><br>

    {% if c_list %}
        {% for c in c_list %}
```

```

        <a href="{% url 'course_detail' c.id %}">{{ c.number }}</a><br>
    {% endfor %}
{% else %}
    Список пуст
{% endif %}

{% endblock %}

```

## course/detail.html

```

{% extends 'base.html' %}

{% block title %}{{ course.number }}{% endblock %}

{% block content %}

    <center><h1>{{ course.number }}</h1></center><hr><br>

    <table border="1" cellpadding="5">
    <tr>
        <th>Номер курса</th>
        <th>{{ course.number }}</th>
    </tr>
    </table>
    <br><hr><br>
    <a href="/App/c_list">Назад</a>

{% endblock %}

```

## group/list.html

```

{% extends 'base.html' %}

{% block title %}PK №2{% endblock %}

{% block content %}

    <center><h1>Список групп</h1></center><hr><br>

    {% if g_list %}
        {% for g in g_list %}
            <a href="{% url 'group_detail' g.id %}">{{ g.number }}</a><br>
        {% endfor %}
    {% else %}
        Список пуст
    {% endif %}

{% endblock %}

```

## group/detail.html

```

{% extends 'base.html' %}

{% block title %}{{ group.number }}{% endblock %}

{% block content %}

    <center><h1>{{ group.number }}</h1></center><hr><br>

    <table border="1" cellpadding="5">
    <tr>

```

```

        <th>Курс</th>
        <th>{{ group.course.number }}</th>
    </tr>
    <tr>
        <th>Группа</th>
        <th>{{ group.number }}</th>
    </tr>
</table>
<br><hr><br>
<a href="/App/g_list">Назад</a>

{% endblock %}

```

# Добавление, изменение и удаление данных через API


## Добавление курса

POST	http://127.0.0.1:8000/courses/	Send	201 Created	129 ms	21 B			
JSON	Auth	Query	Header 1	Docs	Preview	Header 10	Cookie	Timeline
<pre>1 { "number": 1 }</pre>				<pre>1 { 2   "id": 1, 3   "number": "1" 4 }</pre>				

## Удаление курса

DELETE	http://127.0.0.1:8000/courses/1	Send	204 No Content	92.3 ms	0 B			
Body	Auth	Query	Header	Docs	Preview	Header 9	Cookie	Timeline
				No body returned for response				

## Список курсов

GET	http://127.0.0.1:8000/courses/	Send	200 OK	10.6 ms	148 B			
Body	Auth	Query	Header	Docs	Preview	Header 10	Cookie	Timeline
 <p>Select a body type from above</p>				<pre>1 [ 2   { 3     "id": 3, 4     "number": "1-й" 5   }, 6   { 7     "id": 4, 8     "number": "2" 9   }, 10  { 11    "id": 5, 12    "number": "3-й" 13  }, 14  { 15    "id": 6, 16    "number": "4-й" 17  }, 18  { 19    "id": 7, 20    "number": "5-й" 21  }, 22  { 23    "id": 8, 24    "number": "6-й" 25  } 26 ]</pre>				

## Изменение курса

PUT	http://127.0.0.1:8000/courses/4/	Send	200 OK	93 ms	24 B			
JSON	Auth	Query	Header 1	Docs	Preview	Header 10	Cookie	Timeline
<pre>1 { 2   "number": "2-й" 3 }</pre>				<pre>1 { 2   "id": 4, 3   "number": "2-й" 4 }</pre>				



## Добавление группы

POST http://127.0.0.1:8000/groups/ **Send** 201 Created 97.4 ms 43 B

JSON Auth Query Header 1 Docs Preview Header 10 Cookie Timeline

```
1 {
2   "course": 3,
3   "number": "Группа"}
4
5 }
```

```
1 {
2   "id": 1,
3   "course": 3,
4   "number": "Группа"
5 }
```

## Изменение группы

PUT http://127.0.0.1:8000/groups/1/ **Send** 200 OK 109 ms 64 B

JSON Auth Query Header 1 Docs Preview Header 10 Cookie Timeline

```
1 {
2   "course": 3,
3   "number": "Изменённая группа"
4 }
```

```
1 {
2   "id": 1,
3   "course": 3,
4   "number": "Изменённая группа"
5 }
```

## Удаление группы

DELETE http://127.0.0.1:8000/groups/1/ **Send** 204 No Content 526 ms 0 B

Body Auth Query Header Docs Preview Header 9 Cookie Timeline


No body returned for response

## Список групп

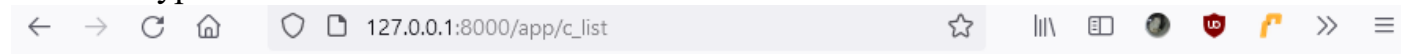
GET http://127.0.0.1:8000/groups/ **Send** 200 OK 8.87 ms 281 B

Body Auth Query Header Docs Preview Header 10 Cookie Timeline

```
1 [
2   {
3     "id": 2,
4     "course": 3,
5     "number": "УЧ1-11"
6   },
7   {
8     "id": 3,
9     "course": 3,
10    "number": "УЧ1-12"
11  },
12  {
13    "id": 4,
14    "course": 3,
15    "number": "УЧ1-13"
16  },
17  {
18    "id": 5,
19    "course": 3,
20    "number": "УЧ1-14"
21  },
22  {
23    "id": 6,
24    "course": 4,
25    "number": "УЧ5-31"
26  },
27  {
28    "id": 7,
29    "course": 4,
30    "number": "УЧ5-32"
31  },
32  {
33    "id": 8,
34    "course": 5,
35    "number": "УЧ5-51"
36  }
37 ]
```

  
Select a body type from above

## Список курсов



# Список курсов

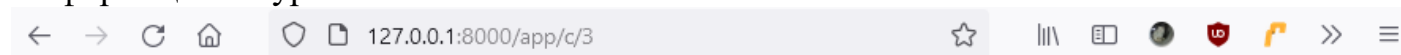
---

[1-й](#)  
[2-й](#)  
[3-й](#)  
[4-й](#)  
[5-й](#)  
[6-й](#)

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## Информация о курсе



# 1-й

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Номер курса
-------------

1-й
-----

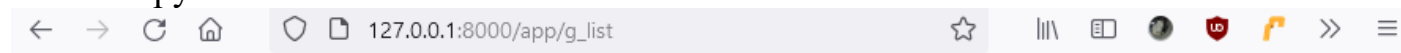
---

[Назад](#)

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## Список групп



# Список групп

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[ИУ1-11](#)  
[ИУ1-12](#)  
[ИУ1-13](#)  
[ИУ1-14](#)  
[ИУ5-31](#)  
[ИУ5-32](#)  
[ИУ5-51](#)

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Информация о группе. Соединение двух таблиц.

## ИУ1-11

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Курс	1-й
Группа	ИУ1-11

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[Назад](#)

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