

Московский государственный технический университет имени Н. Э. Баумана

Факультет «Информатика и системы управления»

Кафедра ИУ5

Отчёт по

домашнему заданию

«Разработка интернет приложений»

Подготовил:

Кан Андрей Дмитриевич

Группа ИУ5-54Б

Подпись\_\_\_\_\_

Дата\_\_\_\_\_

Москва  
2020г.

**Цель домашнего задания:** изучение возможностей создания прототипа веб-приложения на основе базы данных с использованием фреймворка Django.

### **Стандартное задание:**

Создайте прототип веб-приложения с использованием фреймворка Django на основе базы данных, реализующий концепцию master/detail. Прототип должен содержать:

1. Две модели, связанные отношением один-ко-многим.
2. Стандартное средство администрирования Django позволяет редактировать данные моделей. Желательно настроить русификацию ввода и редактирования данных.
3. Веб-приложение формирует отчет в виде отдельного view/template, отчет выводит HTML-страницу, содержащую связанные данные из двух моделей.
4. Для верстки шаблонов используется фреймворк Bootstrap, или аналогичный фреймворк по желанию студента.

### **Расширенные задания, добавляющие +1 балл на экзамене:**

1. Реализация домашнего задания с использованием фреймворка для разработки SPA-приложений (React, Angular, ...).
2. Реализация связи много-ко-многим (с возможностью редактирования данных в пользовательском интерфейсе) и развертывание приложения на облачном сервисе (например, heroku).
3. Реализация в отчете (пункт 3 стандартного задания) графика на основе данных отчета с использованием библиотек JavaScript (например, <https://c3js.org/>) и развертывание приложения на облачном сервисе (например, heroku).
4. Подготовка черновика статьи по тематике курса (тематика статьи согласовывается с преподавателем).

### **Текст программы:**

g1.html

```
<!DOCTYPE html>
<html lang="en" dir="ltr">

<head>
  <meta charset="utf-8">
  <meta name="viewport" content="width=device-width, initial-scale=1">
  <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.0.0-beta1/dist/css/bootstrap.min.css"
rel="stylesheet" integrity="sha384-
```

```

gijF6kkoqNQ00vy+HMDP7azOuL0xtbflcaT9wjKHr8RbDVddVHyTfAAsrekwKmP1"
crossorigin="anonymous">
  <script
src="https://cdn.jsdelivr.net/npm/bootstrap@5.0.0-beta1/dist/js/bootstrap.bundle.min.js"
integrity="sha384-ygbV9kiqUc6oa4msXn9868pTtWMgiQaeYH7/t7LECLbyPA2x65Kgf80OJFdroaf
W" crossorigin="anonymous"></script>
  <title></title>
</head>
<body>
  <nav class="navbar navbar-expand-lg navbar-light bg-light">
    <div class="container-fluid">
      <a class="navbar-brand" href="#">Sport School</a>
      <button class="navbar-toggler" type="button" data-bs-toggle="collapse" data-bs-
target="#navbarNavDropdown" aria-controls="navbarNavDropdown" aria-expanded="false"
aria-label="Toggle navigation">
        <span class="navbar-toggler-icon"></span>
      </button>
      <div class="collapse navbar-collapse" id="navbarNavDropdown">
        <ul class="navbar-nav">
          <li class="nav-item dropdown">
            <a class="nav-link dropdown-toggle" href="#" id="navbarDropdownMenuLink"
role="button" data-bs-toggle="dropdown" aria-expanded="false">
              Karate
            </a>
            <ul class="dropdown-menu" aria-labelledby="navbarDropdownMenuLink">
              <li><a class="dropdown-item" href="k1.html">K-1</a></li>
              <li><a class="dropdown-item" href="k2.html">K-2</a></li>
            </ul>
          </li>
          <li class="nav-item dropdown">
            <a class="nav-link dropdown-toggle active" href="#" id="navbarDropdownMenuLink1"
role="button" data-bs-toggle="dropdown" aria-expanded="false">
              Gym
            </a>
            <ul class="dropdown-menu" aria-labelledby="navbarDropdownMenuLink1">
              <li><a class="dropdown-item" href="g1.html">G-1</a></li>
            </ul>
          </li>
          <li class="nav-item">
            <a class="nav-link" aria-current="page" href="index.html">Schedule</a>
          </li>
        </ul>
      </div>
    </div>
  </nav>

```

```

<table class="table table-hover">
  <thead>
    <tr>
      <th scope="col">#</th>
      <th scope="col">Full name</th>
      <th scope="col">Discipline</th>
      <th scope="col">Birthdate</th>
    </tr>
  </thead>
  <tbody>
    {% for group in group_list %}

```

```

{% if group.group_name_text == "G-1"%}
{% for student in group.students.all %}
    <tr>
    <th scope="row">{{student.id}}</th>
    <td>{{student.full_name_text}}</td>
    <td>{{group.discipline}}</td>
    <td>{{student.birth_date}}</td>
    </tr>
{% endfor %}
{% endif %}
{% endfor %}
</tbody>
</table>
</body>

```

## k1.html

```

<!DOCTYPE html>
<html lang="en" dir="ltr">

<head>
    <meta charset="utf-8">
    <meta name="viewport" content="width=device-width, initial-scale=1">
    <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.0.0-beta1/dist/css/bootstrap.min.css"
rel="stylesheet" integrity="sha384-
gijF6kkoqNQ00vy+HMDP7azOuL0xtbfIcaT9wjKHr8RbDVddVHyTfAAsrekwKmP1"
crossorigin="anonymous">
    <script
src="https://cdn.jsdelivr.net/npm/bootstrap@5.0.0-beta1/dist/js/bootstrap.bundle.min.js"
integrity="sha384-ygbV9kiqUc6oa4msXn9868pTtWMgiQaeYH7/t7LECLbyPA2x65Kgf80OJFdroaf
W" crossorigin="anonymous"></script>
    <title></title>
</head>
<body>
    <nav class="navbar navbar-expand-lg navbar-light bg-light">
        <div class="container-fluid">
            <a class="navbar-brand" href="#">Sport School</a>
            <button class="navbar-toggler" type="button" data-bs-toggle="collapse" data-bs-
target="#navbarNavDropdown" aria-controls="navbarNavDropdown" aria-expanded="false"
aria-label="Toggle navigation">
                <span class="navbar-toggler-icon"></span>
            </button>
            <div class="collapse navbar-collapse" id="navbarNavDropdown">
                <ul class="navbar-nav">
                    <li class="nav-item dropdown">
                        <a class="nav-link dropdown-toggle active" href="#" id="navbarDropdownMenuLink"
role="button" data-bs-toggle="dropdown" aria-expanded="false">
                            Karate
                        </a>
                        <ul class="dropdown-menu" aria-labelledby="navbarDropdownMenuLink">
                            <li><a class="dropdown-item" href="k1.html">K-1</a></li>
                            <li><a class="dropdown-item" href="k2.html">K-2</a></li>
                        </ul>
                    </li>
                    <li class="nav-item dropdown">
                        <a class="nav-link dropdown-toggle" href="#" id="navbarDropdownMenuLink1"
role="button" data-bs-toggle="dropdown" aria-expanded="false">
                            Gym
                        </a>
                        <ul class="dropdown-menu" aria-labelledby="navbarDropdownMenuLink1">
                            <li><a class="dropdown-item" href="g1.html">G-1</a></li>

```

```

        </ul>
      </li>
      <li class="nav-item">
        <a class="nav-link" aria-current="page" href="index.html">Schedule</a>
      </li>
    </ul>
  </div>
</div>
</nav>

```

```

<table class="table table-hover">
  <thead>
    <tr>
      <th scope="col">#</th>
      <th scope="col">Full name</th>
      <th scope="col">Discipline</th>
      <th scope="col">Birthdate</th>
    </tr>
  </thead>
  <tbody>
    {% for group in group_list %}
      {% if group.group_name_text == "K-1"%}
        {% for student in group.students.all %}
          <tr>
            <th scope="row">{{student.id}}</th>
            <td>{{student.full_name_text}}</td>
            <td>{{group.discipline}}</td>
            <td>{{student.birth_date}}</td>
          </tr>
        {% endfor %}
      {% endif %}
    {% endfor %}
  </tbody>
</table>
</body>

```

## k2.html

```

<!DOCTYPE html>
<html lang="en" dir="ltr">

<head>
  <meta charset="utf-8">
  <meta name="viewport" content="width=device-width, initial-scale=1">
  <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.0.0-beta1/dist/css/bootstrap.min.css"
rel="stylesheet" integrity="sha384-
gijF6kkoqNQ00vy+HMDP7azOuL0xtbfIcaT9wjKHr8RbDVddVHYTfAAsrekwKmp1"
crossorigin="anonymous">
  <script
src="https://cdn.jsdelivr.net/npm/bootstrap@5.0.0-beta1/dist/js/bootstrap.bundle.min.js"
integrity="sha384-ygbV9kiqUc6oa4msXn9868pTtWMgiQaeYH7/t7LECLbyPA2x65Kgf80OJFdroaf
W" crossorigin="anonymous"></script>
  <title></title>
</head>
<body>
  <nav class="navbar navbar-expand-lg navbar-light bg-light">

```

```

<div class="container-fluid">
  <a class="navbar-brand" href="#">Sport School</a>
  <button class="navbar-toggler" type="button" data-bs-toggle="collapse" data-bs-
target="#navbarNavDropdown" aria-controls="navbarNavDropdown" aria-expanded="false"
aria-label="Toggle navigation">
    <span class="navbar-toggler-icon"></span>
  </button>
  <div class="collapse navbar-collapse" id="navbarNavDropdown">
    <ul class="navbar-nav">
      <li class="nav-item dropdown">
        <a class="nav-link dropdown-toggle active" href="#" id="navbarDropdownMenuLink"
role="button" data-bs-toggle="dropdown" aria-expanded="false">
          Karate
        </a>
        <ul class="dropdown-menu" aria-labelledby="navbarDropdownMenuLink">
          <li><a class="dropdown-item" href="k1.html">K-1</a></li>
          <li><a class="dropdown-item" href="k2.html">K-2</a></li>
        </ul>
      </li>
      <li class="nav-item dropdown">
        <a class="nav-link dropdown-toggle" href="#" id="navbarDropdownMenuLink1"
role="button" data-bs-toggle="dropdown" aria-expanded="false">
          Gym
        </a>
        <ul class="dropdown-menu" aria-labelledby="navbarDropdownMenuLink1">
          <li><a class="dropdown-item" href="g1.html">G-1</a></li>
        </ul>
      </li>
      <li class="nav-item">
        <a class="nav-link" aria-current="page" href="index.html">Schedule</a>
      </li>
    </ul>
  </div>
</div>
</nav>

```

```

<table class="table table-hover">
  <thead>
    <tr>
      <th scope="col">#</th>
      <th scope="col">Full name</th>
      <th scope="col">Discipline</th>
      <th scope="col">Birthdate</th>
    </tr>
  </thead>
  <tbody>
    {% for group in group_list %}
      {% if group.group_name_text == "K-2"%}
        {% for student in group.students.all %}
          <tr>
            <th scope="row">{{ student.id }}</th>
            <td>{{ student.full_name_text }}</td>
            <td>{{ group.discipline }}</td>
            <td>{{ student.birth_date }}</td>
          </tr>
        {% endfor %}
      {% endif %}
    {% endfor %}
  </tbody>
</table>

```

```

        {% endfor %}
    </tbody>
</table>
</body>

```

## index.html

```

<!DOCTYPE html>
<html lang="en" dir="ltr">

<head>
    <meta charset="utf-8">
    <meta name="viewport" content="width=device-width, initial-scale=1">
    <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.0.0-beta1/dist/css/bootstrap.min.css"
rel="stylesheet" integrity="sha384-
gijF6kkoqNQ00vy+HMDP7azOuL0xtbfIcaT9wjKHr8RbDVddVHyTfAAsrekwKmP1"
crossorigin="anonymous">
    <script
src="https://cdn.jsdelivr.net/npm/bootstrap@5.0.0-beta1/dist/js/bootstrap.bundle.min.js"
integrity="sha384-ygbV9kiqUc6oa4msXn9868pTtWMgiQaeYH7/t7LECLbyPA2x65Kgf80OJFdroaf
W" crossorigin="anonymous"></script>
    <title></title>
</head>
<body>
    <nav class="navbar navbar-expand-lg navbar-light bg-light">
        <div class="container-fluid">
            <a class="navbar-brand" href="#">Sport School</a>
            <button class="navbar-toggler" type="button" data-bs-toggle="collapse" data-bs-
target="#navbarNavDropdown" aria-controls="navbarNavDropdown" aria-expanded="false"
aria-label="Toggle navigation">
                <span class="navbar-toggler-icon"></span>
            </button>
            <div class="collapse navbar-collapse" id="navbarNavDropdown">
                <ul class="navbar-nav">
                    <li class="nav-item dropdown">
                        <a class="nav-link dropdown-toggle" href="#" id="navbarDropdownMenuLink"
role="button" data-bs-toggle="dropdown" aria-expanded="false">
                            Karate
                        </a>
                        <ul class="dropdown-menu" aria-labelledby="navbarDropdownMenuLink">
                            <li><a class="dropdown-item" href="k1.html">K-1</a></li>
                            <li><a class="dropdown-item" href="k2.html">K-2</a></li>
                        </ul>
                    </li>
                    <li class="nav-item dropdown">
                        <a class="nav-link dropdown-toggle" href="#" id="navbarDropdownMenuLink1"
role="button" data-bs-toggle="dropdown" aria-expanded="false">
                            Gym
                        </a>
                        <ul class="dropdown-menu" aria-labelledby="navbarDropdownMenuLink1">
                            <li><a class="dropdown-item" href="g1.html">G-1</a></li>
                        </ul>
                    </li>
                    <li class="nav-item">
                        <a class="nav-link active" aria-current="page" href="index.html">Schedule</a>
                    </li>
                </ul>
            </div>
        </div>
    </nav>

```

```

<table class="table table-hover">
  <thead>
    <tr>
      <th scope="col">#</th>
      <th scope="col">Group</th>
      <th scope="col">Discipline</th>
      <th scope="col">Date</th>
    </tr>
  </thead>
  <tbody>
    {% for class in schedule_list %}
      <tr>
        <th scope="row">{{ class.id }}</th>
        {%for group in group_list%}
          {% if group == class.group%}
            <td>{{ group.group_name_text }}</td>
            <td>{{ group.discipline }}</td>
            {% endif%}
            {% endfor %}
            <td>{{ class.date_time }}</td>
          </tr>
        {% endfor %}
      </tbody>
    </table>
  </body>

```

## models.py

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

```

class Student(models.Model):
    full_name_text = models.CharField(max_length=20)
    birth_date = models.DateTimeField()

```

```

    def __str__(self):
        return self.full_name_text

```

```

class Discipline(models.Model):
    discipline_name_text = models.CharField(max_length=20)

```

```

    def __str__(self):
        return self.discipline_name_text

```

```

    def __repr__(self):
        return self.discipline_name_text

```

```

class Group(models.Model):
    group_name_text = models.CharField(max_length=20)
    students = models.ManyToManyField(Student)
    discipline = models.ForeignKey(Discipline, on_delete=models.CASCADE)

```

```

    def __str__(self):

```



```
return self.group_name_text
```

```
class Schedule(models.Model):  
    group = models.ForeignKey(Group, on_delete=models.CASCADE)  
    date_time = models.DateTimeField()
```

## views.py

```
from django.shortcuts import render  
from django.http import HttpResponse  
from .models import Student, Group, Discipline, Schedule  
from django.template import loader
```

```
def index(request):  
    schedule_list = Schedule.objects.all()  
    group_list = Group.objects.all()  
    template = loader.get_template('dz/index.html')  
    context = {  
        'schedule_list': schedule_list,  
        'group_list': group_list,  
    }  
    return HttpResponse(template.render(context, request))
```

```
def k1(request):  
  
    student_list = Student.objects.all()  
    group_list = Group.objects.all()  
    discipline_list = Discipline.objects.all()  
    template = loader.get_template('dz/k1.html')  
    context = {  
        'student_list': student_list,  
        'group_list': group_list,  
        'discipline_list': discipline_list  
    }  
    return HttpResponse(template.render(context, request))
```

```
def k2(request):  
  
    student_list = Student.objects.all()  
    group_list = Group.objects.all()  
    discipline_list = Discipline.objects.all()  
    template = loader.get_template('dz/k2.html')  
    context = {  
        'student_list': student_list,  
        'group_list': group_list,  
        'discipline_list': discipline_list  
    }  
    return HttpResponse(template.render(context, request))
```

```
def g1(request):  
  
    student_list = Student.objects.all()  
    group_list = Group.objects.all()  
    discipline_list = Discipline.objects.all()
```

```
template = loader.get_template('dz/g1.html')
context = {
    'student_list': student_list,
    'group_list': group_list,
    'discipline_list': discipline_list
}
return HttpResponse(template.render(context, request))
```

## Экранные формы:

Sport School   Karate ▾   Gym ▾   Schedule			
#	Full name	Discipline	Birthdate
1	Van Squerepants	Gym	Dec. 16, 2000, 11:31 a.m.
2	Igor Shpak	Gym	Sept. 27, 2000, 11:31 a.m.
4	Ivan Mazurin	Gym	Oct. 15, 2000, 12:42 p.m.

Sport School   Karate ▾   Gym ▾   Schedule			
#	Full name	Discipline	Birthdate
3	Ellie Williams	Karate	Dec. 16, 2000, 7:50 p.m.
4	Ivan Mazurin	Karate	Oct. 15, 2000, 12:42 p.m.

Sport School   Karate ▾   Gym ▾   Schedule			
#	Full name	Discipline	Birthdate
1	Van Squerepants	Karate	Dec. 16, 2000, 11:31 a.m.
2	Igor Shpak	Karate	Sept. 27, 2000, 11:31 a.m.

Sport School   Karate ▾   Gym ▾   Schedule			
#	Full name	Discipline	Birthdate
1	Van Squerepants	Gym	Dec. 16, 2000, 11:31 a.m.
2	Igor Shpak	Gym	Sept. 27, 2000, 11:31 a.m.
4	Ivan Mazurin	Gym	Oct. 15, 2000, 12:42 p.m.