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Факультет «Информатика и системы управления»
Кафедра ИУ5 «Системы обработки информации и управления»

Курс «Разработка интернет приложений»

Рубежный контроль №2

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Описание задания:

Рубежный контроль представляет собой разработку веб-приложения с использованием фреймворка Django. Веб-приложение должно выполнять следующие функции:

- 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.

Сущности: “Компьютер”, “Дисплейный класс”.

Текст программы

models.py:

```
from django.db import models

class DisplayClass(models.Model):
    disp_id = models.AutoField('disp_id', primary_key=True)
    room_number = models.CharField(max_length=50)
    square = models.IntegerField(verbose_name='Square')
    def __str__(self):
        return f'{self.room_number}{self.square}'

class Computer(models.Model):
    comp_id = models.AutoField('comp_id', primary_key=True)
    cpu = models.CharField(max_length=80, verbose_name='CPU')
    graphic_card = models.CharField(max_length=80, verbose_name='Graphic Card')
    disp_id = models.ForeignKey('DisplayClass', models.DO_NOTHING,
db_column='disp_id', verbose_name='Display Class')
```

urls.py:

```
from django.urls import path
from application import views

urlpatterns = [
    path('', views.index),
    path('class', views.dispclass_list),
    path('class/create', views.DisplayClassCreate.as_view()),
```

```

        path('class/<int:disp_id>/update',
views.DisplayClassUpdate.as_view(), name='class_update'),
        path('class/<int:disp_id>/delete',
views.DisplayClassDelete.as_view(), name='class_delete'),
        path('computer', views.computers_list),
        path('computer/create', views.ComputerCreate.as_view()),
        path('computer/<int:comp_id>/update',
views.ComputerUpdate.as_view(), name='computer_update'),
        path('computer/<int:comp_id>/delete',
views.ComputerDelete.as_view(), name='computer_delete'),
        path('report', views.report)
]

```

views.py:

```

from django import forms
from django.shortcuts import render
from django.views.generic.edit import CreateView, UpdateView, DeleteView
from .models import Computer, DisplayClass

def index(request):
    return render(request, 'index.html')

def report(request):
    computers = Computer.objects.all()
    params = {'computers': computers}
    return render(request, 'report.html', params)

def dispclass_list(request):
    classes = DisplayClass.objects.all().values()
    params = {'entity': 'DisplayClass', 'objects': classes}
    return render(request, 'list.html', params)

def computers_list(request):
    computers = Computer.objects.all().values()
    params = {'entity': 'Computer', 'objects': computers}
    return render(request, 'list.html', params)

class DisplayClassCreate(CreateView):
    model = DisplayClass
    fields = ['room_number', 'square']
    success_url = '/class'
    template_name = 'class_form.html'

class DisplayClassUpdate(UpdateView):
    model = DisplayClass
    fields = ['room_number', 'square']
    pk_url_kwarg = 'disp_id'
    success_url = '/class'
    template_name = 'class_form.html'

class DisplayClassDelete>DeleteView):
    model = DisplayClass
    pk_url_kwarg = 'disp_id'
    success_url = '/class'

```

```

    template_name = 'class_delete_form.html'

class ComputerCreate(CreateView):
    model = Computer
    fields = ['cpu', 'graphic_card', 'disp_id']
    success_url = '/computer'
    template_name = 'computer_form.html'

    def get_context_data(self, **kwargs):
        context = super(ComputerCreate, self).get_context_data(**kwargs)
        context['form'].fields['disp_id'] =
forms.ModelFormChoiceField(queryset=DisplayClass.objects.all(),
empty_label=None, label='Дисплейный класс')
        return context

class ComputerUpdate(UpdateView):
    model = Computer
    fields = ['cpu', 'graphic_card', 'disp_id']
    pk_url_kwarg = 'comp_id'
    success_url = '/computer'
    template_name = 'computer_form.html'

    def get_context_data(self, **kwargs):
        context = super(ComputerUpdate, self).get_context_data(**kwargs)
        context['form'].fields['disp_id'] =
forms.ModelFormChoiceField(queryset=DisplayClass.objects.all(),
empty_label=None, label='Дисплейный класс')
        return context

class ComputerDelete(DeleteView):
    model = Computer
    pk_url_kwarg = 'comp_id'
    success_url = '/computer'
    template_name = 'computer_delete_form.html'

```

base.html:

```

<!DOCTYPE html>
<html lang="en" class="h-100">
    <head>
        <meta charset="utf-8" />
        <title>{% block title %}RK2{% endblock %}</title>
        <style type="text/css"></style>
    </head>
    <body>
        <div>
            <a style="margin: 5px" href="/">Main Page</a>
            <a style="margin: 5px" href="/computer">Computers</a>
            <a style="margin: 5px" href="/class">Display Classes</a>
            <a style="margin: 5px" href="/report">Report</a>
        </div>
        {% block content %} {% endblock %}
    </body>
</html>

```

index.html:

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

{% block title %}
Main Page
{% endblock %}

{% block content %}
<h2>Main Page</h2>
<span>RK2</span>
<span>Vaganov Daniil IU5-52B</span>
{% endblock %}
```

report.html:

```
{% extends 'base.html' %}
{% block title %}Computers{% endblock %}
{%block content %}
<h2>List of all computers:</h2>
<ul>
    {% for comp in computers %}
        <li>
            <div>
                <b>CPU:</b> {{comp.cpu}}<br>
                <b>Graphic Card:</b> {{comp.graphic_card}}<br>
                <b>Display Class:</b> {{comp.disp_id.room_number}}<br><br>
            </div>
        </li>
    {% endfor %}
</ul>
{% endblock %}
```

computer_form.html:

```
{% extends 'base.html' %}
{% block title %}Update{% endblock %}
{%block content %}
<h2>Update computer's properties</h2>
<form action='' method='post'>
    {% csrf_token %}
    <table style="text-align: left;">
        {{form.as_table}}
    </table>
    <input type="submit" value="Update"/>
</form>
{% endblock %}
```

computer_delete_form.html:

```
{% extends 'base.html' %}
{% block title %}Update{% endblock %}
{%block content %}
<h2>Delete data</h2>
<p>Are you sure you want to delete computer {{object.comp_id}}?</p>
<form action='' method='post'>
    {% csrf_token %}
```

```
        <input type="submit" value="Delete" />
    </form>
{% endblock %}
```

class_form.html:

```
{% extends 'base.html' %}
{% block title %}Update{% endblock %}
{%block content %}
<h2>Update data</h2>
<form action='' method='post'>
    {% csrf_token %}
    <table>
        {{form.as_table}}
    </table>
    <input type="submit" value="Update"/>
</form>
{% endblock %}
```

class_delete_form.html:

```
{% extends 'base.html' %}
{% block title %}Update{% endblock %}
{%block content %}
<h2>Delete data</h2>
<p>Are you sure you want to delete {{object.room_number}}?</p>
<form action='' method='post'>
    {% csrf_token %}
    <input type="submit" value="Delete" />
</form>
{% endblock %}
```

Скриншоты:

Главная страница:

[Main Page](#) [Computers](#) [Display Classes](#) [Report](#)

Main Page

RK2 Vaganov Daniil IU5-52B

Компьютеры:

[Main Page](#) [Computers](#) [Display Classes](#) [Report](#)

Entity Computer

CPU: AMD A8-9600 AM4

Graphic Card: NVIDIA GEFORCE RTX 3070

Update

Delete

CPU: Intel Core i3 10100F

Graphic Card: NVIDIA GEFORCE RTX 3060 Ti

Update

Delete

CPU: Intel Core i5-11600K

Graphic Card: GIGABYTE GeForce GTX 1660

Update

Delete

CPU: Intel Core i9-10900X

Graphic Card: GeForce RTX 3060

Update

Delete

CPU: Intel Xeon E5420

Graphic Card: NVIDIA GEFORCE RTX 3070

Update

Delete

Add computer

[Main Page](#) [Computers](#) [Display Classes](#) [Report](#)

Update computer's properties

CPU:

AMD A8-9600 AM4

Graphic Card:

NVIDIA GEFORCE RTX 307

Дисплейный класс:

501ю80

Update

Дисплейные классы:

[Main Page](#) [Computers](#) [Display Classes](#) [Report](#)

Entity DisplayClass

Class number: 501ю

Square: 80m²

Update

Delete

Class number: 404э

Square: 65m²

Update

Delete

Class number: 306

Square: 40m²

Update

Delete

Add class

[Main Page](#) [Computers](#) [Display Classes](#) [Report](#)

Update data

Room number:

501ю

Square:

80

Update

Полная информация о компьютерах:

[Main Page](#) [Computers](#) [Display Classes](#) [Report](#)

List of all computers:

- **CPU:** AMD A8-9600 AM4
Graphic Card: NVIDIA GEFORCE RTX 3070
Display Class: 501ю
- **CPU:** Intel Core i3 10100F
Graphic Card: NVIDIA GEFORCE RTX 3060 Ti
Display Class: 501ю
- **CPU:** Intel Core i5-11600K
Graphic Card: GIGABYTE GeForce GTX 1660
Display Class: 501ю
- **CPU:** Intel Core i9-10900X
Graphic Card: GeForce RTX 3060
Display Class: 404э
- **CPU:** Intel Xeon E5420
Graphic Card: NVIDIA GEFORCE RTX 3070
Display Class: 306