Московский государственный технический университет им. Н.Э. Баумана

Факультет «Информатика и системы управления»

Кафедра «Автоматизированные системы обработки информации и управления»



**Отчет**

**Домашнее задание**

**По курсу «Разработка интернет приложений»**

**ИСПОЛНИТЕЛЬ:**

Группа ИУ5-55Б

Герасименко А.В.

"13" января 2020 г.

**ПРЕПОДАВАТЕЛЬ:**

Гапанюк Ю.Е.

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Москва 2020

1. **Задание**

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

* Две модели, связанные отношением один-ко-многим
* Стандартное средство администрирования Django позволяет редактировать данные моделей. Желательно настроить русификацию ввода и редактирования данных.
* Веб0приложение формирует отчет в виде отдельного view/template, отчет выводит HTML-страницу, содержащую связанные данные из двух моделей.
* Для верстки шаблонов используется фреймворк Bootstrap, или аналогичный фреймворк по желанию студента

Расширенные задания:

* Реализация связи много-ко-многим (с возможностью редактирования данных в пользовательском интерфейсе) и развертывание приложения на облачном сервисе (например, heroku)

1. **Текст программы**

HW\settings.py

*"""  
Django settings for HW project.  
  
Generated by 'django-admin startproject' using Django 3.1.5.  
  
For more information on this file, see  
https://docs.djangoproject.com/en/3.1/topics/settings/  
  
For the full list of settings and their values, see  
https://docs.djangoproject.com/en/3.1/ref/settings/  
"""***from** pathlib **import** Path  
**import** os  
  
*# 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/3.1/howto/deployment/checklist/  
  
# SECURITY WARNING: keep the secret key used in production secret!*SECRET\_KEY = **'y\*!-975h7$d\*$-&r5mxzdt+(t5bg#7knza&^26hpbm5@7shc2r'***# SECURITY WARNING: don't run with debug turned on in production!*DEBUG = **False**ALLOWED\_HOSTS = [**'supply-schedule.herokuapp.com'**, **'127.0.0.1'**]  
  
  
*# Application definition*INSTALLED\_APPS = [  
 **'schedule.apps.ScheduleConfig'**,  
 **'django.contrib.admin'**,  
 **'django.contrib.auth'**,  
 **'django.contrib.contenttypes'**,  
 **'django.contrib.sessions'**,  
 **'django.contrib.messages'**,  
 **'django.contrib.staticfiles'**,  
]  
  
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'**,  
 **'whitenoise.middleware.WhiteNoiseMiddleware'**,  
]  
  
ROOT\_URLCONF = **'HW.urls'**TEMPLATES = [  
 {  
 **'BACKEND'**: **'django.template.backends.django.DjangoTemplates'**,  
 **'DIRS'**: [],  
 **'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 = **'HW.wsgi.application'***# Database  
# https://docs.djangoproject.com/en/3.1/ref/settings/#databases*DATABASES = {  
 **'default'**: {  
 **'ENGINE'**: **'django.db.backends.sqlite3'**,  
 **'NAME'**: BASE\_DIR / **'db.sqlite3'**,  
 }  
}  
  
  
*# Password validation  
# https://docs.djangoproject.com/en/3.1/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/3.1/topics/i18n/*LANGUAGE\_CODE = **'ru'**TIME\_ZONE = **'UTC'**USE\_I18N = **True**USE\_L10N = **True**USE\_TZ = **True***# Static files (CSS, JavaScript, Images)  
# https://docs.djangoproject.com/en/3.1/howto/static-files/*STATIC\_URL = **'/static/'**STATIC\_ROOT = os.path.join(BASE\_DIR, **'staticfiles'**)

HW\urls.py

*"""HW URL Configuration  
  
The `urlpatterns` list routes URLs to views. For more information please see:  
 https://docs.djangoproject.com/en/3.1/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** include, path  
**from** django.conf **import** settings  
**from** django.conf.urls.static **import** static  
  
urlpatterns = [  
 path(**'supply/'**, include(**'schedule.urls'**)),  
 path(**'admin/'**, admin.site.urls),  
]

Procfile

web: gunicorn HW.wsgi

schedule\models.py

**from** django.db **import** models  
  
  
**class** Product(models.Model):  
 name = models.CharField(max\_length=50, verbose\_name=**'Название'**)  
 price = models.CharField(max\_length=50, verbose\_name=**'Цена'**)  
 im = models.ImageField(upload\_to=**'static/schedule/images/products'**, verbose\_name=**'Вид'**)  
  
 **def** \_\_str\_\_(self):  
 **return** self.name  
  
 **class** Meta:  
 verbose\_name = **'Товар'** verbose\_name\_plural = **'Товары'** ordering = [**'name'**]  
  
  
**class** Supplier(models.Model):  
 name = models.CharField(max\_length=50, verbose\_name=**'ФИО'**)  
 product = models.ManyToManyField(Product, through=**'Supply'**)  
  
 **def** \_\_str\_\_(self):  
 **return** self.name  
  
 **class** Meta:  
 verbose\_name = **'Поставщик'** verbose\_name\_plural = **'Поставщики'** ordering = [**'name'**]  
  
  
**class** Supply(models.Model):  
 supplier= models.ForeignKey(Supplier, on\_delete=models.CASCADE, verbose\_name=**'Поставщик'**)  
 product = models.ForeignKey(Product, on\_delete=models.CASCADE, verbose\_name=**'Товар'**)  
 supply\_time = models.DateTimeField(verbose\_name=**'Дата поставки'**)  
  
 **class** Meta:  
 verbose\_name = **'Поставка'** verbose\_name\_plural = **'Поставки'** ordering = [**'supply\_time'**]

schedule\admin.py

**from** django.contrib **import** admin  
**from** .models **import** Product, Supplier, Supply  
  
  
*# class ExamAdmin(admin.ModelAdmin):  
# list\_display = ('name', 'lecturer')  
# search\_fields = ('name', 'lecturer')  
#  
#  
# class ScheduleAdmin(admin.ModelAdmin):  
# list\_display = ('group', 'lesson', 'lesson\_time', 'consultation\_time')*admin.site.register(Product)  
admin.site.register(Supplier)  
admin.site.register(Supply)

schedule\ursl.py

**from** django.urls **import** path  
**from** . **import** views  
  
app\_name = **'schedule'**urlpatterns = [  
 path(**''**, views.index, name=**'index'**),  
 path(**'<int:product\_id>/'**, views.detail\_student, name=**'detail\_student'**),  
 path(**'<str:name>/'**, views.detail\_lecturer, name=**'detail\_lecturer'**)  
]

schedule\views.py

**from** django.shortcuts **import** get\_list\_or\_404, render  
**from** django.http **import** HttpResponseRedirect  
**from** django.template **import** loader  
**from** django.http **import** HttpResponse  
**from** .models **import** Product, Supplier, Supply  
  
  
**def** index(request):  
 group\_list = Supplier.objects.all()  
 exam\_list = Product.objects.all()  
 context = {**'supplier\_list'**: group\_list, **'product\_list'**: exam\_list}  
 **return** render(request, **'schedule/index.html'**, context)  
  
  
**def** detail\_student(request, product\_id):  
 product\_list = Product.objects.all()  
 **for** i **in** product\_list:  
 **if** i.id == product\_id:  
 product = i  
 **return** render(request, **'schedule/detail\_student.html'**, {**'product'**: product})  
  
  
**def** detail\_lecturer(request, name):  
 supplier\_list = Supplier.objects.all()  
 **for** i **in** supplier\_list:  
 **if** i.name == name:  
 supplier = i  
 schedule\_list = get\_list\_or\_404(Supply, supplier=supplier)  
  
 **if** request.method == **"POST"**:  
 product\_change\_name = request.POST.get(**"product\_name"**)  
 product\_list = Product.objects.all()  
 **for** product **in** product\_list:  
 **if** product.name == product\_change\_name:  
 product\_change = product  
 **for** schedule **in** schedule\_list:  
 **if** schedule.product == product\_change **and** schedule.supplier == supplier:  
 schedule.supply\_time = request.POST.get(**"supply\_time"**)  
 schedule.save()  
 **return** HttpResponseRedirect(**f"/supply/{**name**}"**)  
 **else**:  
 **return** render(request, **'schedule/detail\_lecturer.html'**, {**'supplier'**: supplier, **'schedule\_list'**: schedule\_list})

templates\schedule\index.html

<!DOCTYPE **html**>  
<**html lang="en"**>  
<**head**>  
 <**meta charset="UTF-8"**>  
 <**title**>Schedule</**title**>  
  
 <**link rel="stylesheet" href="https://stackpath.bootstrapcdn.com/bootstrap/5.0.0-alpha1/css/bootstrap.min.css" integrity="sha384-r4NyP46KrjDleawBgD5tp8Y7UzmLA05oM1iAEQ17CSuDqnUK2+k9luXQOfXJCJ4I" crossorigin="anonymous"**>  
 {% load static %}  
 <**link rel="stylesheet" type="text/css" href="{% static 'schedule/css/style.css' %}"**>  
</**head**>  
  
<**body**>  
 <**nav class="navbar navbar-expand-lg navbar-dark bg-light"**>  
 <**div class="container-fluid modal-header"**>  
 <**a class="navbar-brand" href="/supply/"**>  
 <**h3 class="text-dark"**>Товары и расписание их поставок</**h3**>  
  
 </**a**>  
 <**div class="float-end"**>  
 <**div class="justify-content-center"**>  
 <**table**>  
 <**tr**>  
 <**td class="text-center"**>  
 <**img class="img-fluid" src="{% static "schedule**/images/BMSTU\_logo.png" %}" alt="BMSTU logo" width="70" height="70">  
 </**td**>  
 </**tr**>  
 <**tr**>  
 <**td class="text-center"**>  
 <**p class="text-dark"**>Художественные принадлежности</**p**>  
 </**td**>  
  
 </**tr**>  
 </**table**>  
 </**div**>  
 </**div**>  
 </**div**>  
 </**nav**>  
  
 <**main class="container-fluid bg-light"**>  
 <**div class="row"**>  
 <**div class="col-10"**>  
 <**table class="table table-light table-borderless"**>  
 <**tr**>  
 <**th**><**h4**>Продукты</**h4**></**th**>  
 <**th**><**h4**>Поставщики</**h4**></**th**>  
 </**tr**>  
 <**tr**>  
 <**td**>  
 {% if product\_list %}  
 <**ul**>  
 {% for product in product\_list %}  
 <**li**>  
 <**a href="{% url 'schedule:detail\_student' product.id %}"**><**h5**>{{ product.name }}</**h5**></**a**>  
 </**li**>  
 {% endfor %}  
 </**ul**>  
 {% else %}  
 <**p**>No group are available.</**p**>  
 {% endif %}  
 </**td**>  
 <**td**>  
 {% if supplier\_list %}  
 <**ul**>  
 {% for supplier in supplier\_list %}  
 <**li**>  
 <**a href="{% url 'schedule:detail\_lecturer' supplier.name %}"**><**h5**>{{ supplier.name }}</**h5**></**a**>  
 </**li**>  
 {% endfor %}  
 </**ul**>  
 {% else %}  
 <**p**>No lecturer are available.</**p**>  
 {% endif %}  
 </**td**>  
 </**tr**>  
 </**table**>  
  
 </**div**>  
 </**div**>  
 </**main**>  
  
 <**footer class="modal-footer bg-light"**>  
 <**address class="container-fluid"**>  
 <**p style="color: darkslateblue"**>Контакты: +7-(977)-777-77-88</**p**>  
 </**address**>  
 <**p class="container-fluid text-center" style="color: darkslateblue"**>2021 BMSTU</**p**>  
 </**footer**>  
</**body**>  
</**html**>

templates\schedule\detail\_student.html

<!DOCTYPE **html**>  
<**html lang="en"**>  
<**head**>  
 <**meta charset="UTF-8"**>  
 <**title**>Detail for student</**title**>  
  
 <**link rel="stylesheet" href="https://stackpath.bootstrapcdn.com/bootstrap/5.0.0-alpha1/css/bootstrap.min.css" integrity="sha384-r4NyP46KrjDleawBgD5tp8Y7UzmLA05oM1iAEQ17CSuDqnUK2+k9luXQOfXJCJ4I" crossorigin="anonymous"**>  
 <**script src="https://kit.fontawesome.com/941547f2e9.js" crossorigin="anonymous"**></**script**>  
 {% load static %}  
 <**link rel="stylesheet" type="text/css" href="{% static 'schedule/css/style.css' %}"**>  
</**head**>  
<**body**>  
 <**nav class="navbar navbar-expand-lg navbar-dark bg-light"**>  
 <**div class="container-fluid modal-header"**>  
 <**div**>  
 <**a class="navbar-brand" href="/supply/"**><**i class="fas fa-reply text-dark navbar-brand"**></**i**>  
 <**h5 class="text-dark"**>Назад</**h5**>  
 </**a**>  
 </**div**>  
 </**div**>  
 </**nav**>  
 <**main class="container-fluid bg-light"**>  
 <**div class="row justify-content-around"**>  
 <**div class="col-6"**>  
 <**h1 class="text-center text-dark"**>{{ product.name }}</**h1**>  
 <**table class="table table-light table-borderless"**>  
 <**tr class="text-center"**>  
 {%if product.id == 1%}  
 <**td**><**img class="rounded img-fluid" width="500px" height="500px" src="{% static "schedule**/images/products/1.jpg" %}"></**td**>  
 {%endif%}  
 {%if product.id == 2%}  
 <**td**><**img class="rounded img-fluid" width="500px" height="500px" src="{% static "schedule**/images/products/2.jpg" %}"></**td**>  
 {%endif%}  
 {%if product.id == 3%}  
 <**td**><**img class="rounded img-fluid" width="500px" height="500px" src="{% static "schedule**/images/products/3.jpg" %}"></**td**>  
 {%endif%}  
 {%if product.id == 4%}  
 <**td**><**img class="rounded img-fluid" width="500px" height="500px" src="{% static "schedule**/images/products/4.png" %}"></**td**>  
 {%endif%}  
 {%if product.id == 5%}  
 <**td**><**img class="rounded img-fluid" width="500px" height="500px" src="{% static "schedule**/images/products/5.jpg" %}"></**td**>  
 {%endif%}  
 {%if product.id == 6%}  
 <**td**><**img class="rounded img-fluid" width="500px" height="500px" src="{% static "schedule**/images/products/6.jpg" %}"></**td**>  
 {%endif%}  
 </**tr**>  
 <**tr**>  
 <**td class="text-center text-dark"**>Цена: {{product.price}}</**td**>  
 </**tr**>  
 </**table**>  
 </**div**>  
 </**div**>  
 </**main**>  
 <**footer class="high bg-light"**>  
 </**footer**>  
</**body**>  
</**html**>

templates\schedule\detail\_lecturer.html

<!DOCTYPE **html**>  
<**html lang="en"**>  
<**head**>  
 <**meta charset="UTF-8"**>  
 <**title**>Detail for lecturer</**title**>  
  
 <**link rel="stylesheet" href="https://stackpath.bootstrapcdn.com/bootstrap/5.0.0-alpha1/css/bootstrap.min.css" integrity="sha384-r4NyP46KrjDleawBgD5tp8Y7UzmLA05oM1iAEQ17CSuDqnUK2+k9luXQOfXJCJ4I" crossorigin="anonymous"**>  
 <**script src="https://kit.fontawesome.com/941547f2e9.js" crossorigin="anonymous"**></**script**>  
  
 {% load static %}  
 <**link rel="stylesheet" type="text/css" href="{% static 'schedule/css/style.css' %}"**>  
 <**link href="{% static 'schedule/css/c3.min.css' %}" rel="stylesheet"**>  
</**head**>  
<**body**>  
 <**nav class="navbar navbar-expand-lg navbar-dark bg-light"**>  
 <**div class="container-fluid modal-header"**>  
 <**div**>  
 <**a class="navbar-brand" href="/supply/"**><**i class="fas fa-reply text-dark navbar-brand"**></**i**>  
 <**h5 class="text-dark"**>Назад</**h5**>  
 </**a**>  
 </**div**>  
 <**div class="float-end"**>  
 *<!-- Button trigger modal -->* <**button type="button" class="btn btn-info" data-toggle="modal" data-target="#signUpModal"**>  
 Внести изменения  
 </**button**>  
  
 *<!-- Modal -->* <**div class="modal fade" id="signUpModal" tabindex="-1" aria-labelledby="signUpModalLabel" aria-hidden="true"**>  
 <**div class="modal-dialog"**>  
 <**div class="modal-content"**>  
 <**div class="modal-header"**>  
 <**h5 class="modal-title" id="signUpModalLabel"**>Внести изменения</**h5**>  
 <**button type="button" class="close" data-dismiss="modal" aria-label="Close"**>  
 <**span aria-hidden="true"**>**&times;**</**span**>  
 </**button**>  
 </**div**>  
 <**div class="modal-body"**>  
 <**form class="g-3 needs-validation signup" method="post" novalidate**>  
 {% csrf\_token %}  
 <**p**></**p**>  
 <**label for="validationCustom01" class="form-label"**>Товар</**label**>  
 <**select class="form-select" id="validationCustom01" value="{{ schedule\_list.product }}" name="product\_name" required**>  
 <**option selected disabled value=""**>Выберите...</**option**>  
 {% for i in schedule\_list %}  
 <**option**>{{ i.product }}</**option**>  
 {% endfor %}  
 </**select**>  
 <**div class="invalid-feedback"**>  
 Пожалуйста выберите товар  
 </**div**>  
 <**p**></**p**>  
 <**label for="validationCustom02" class="form-label"**>Время поставки</**label**>  
 <**input type="datetime-local" class="form-control" id="validationCustom02" value="{{ schedule.supply\_time }}" name="supply\_time" required**>  
 <**div class="invalid-feedback"**>  
 Пожалуйста выберите время поставки  
 </**div**>  
 <**p**></**p**>  
 <**div class="modal-footer"**>  
 <**input class = "btn btn-success" type="submit" value="Save" name="\_save"**>  
 <**button class="btn btn-danger" type="button" data-dismiss="modal"**>Close</**button**>  
 </**div**>  
 <**script**>  
 // JavaScript for disabling form submissions if there are invalid fields  
 (function () {  
 'use strict'  
  
 // Fetch all the forms we want to apply custom Bootstrap validation styles to  
 var forms = document.querySelectorAll('.needs-validation')  
  
 // Loop over them and prevent submission  
 Array.prototype.slice.call(forms)  
 .forEach(function (form) {  
 form.addEventListener('submit', function (event) {  
 if (!form.checkValidity()) {  
 event.preventDefault()  
 event.stopPropagation()  
 }  
  
 form.classList.add('was-validated')  
 }, false)  
 })  
 })()  
 </**script**>  
 </**form**>  
 </**div**>  
 </**div**>  
 </**div**>  
 </**div**>  
 </**div**>  
 </**div**>  
 </**nav**>  
 <**main class="container-fluid bg-light"**>  
 <**div class="row justify-content-around"**>  
 <**div class="col-6"**>  
 <**h1 class="text-dark text-center"**>{{ supplier.name }}</**h1**>  
 <**table class="table table-light table-borderless table-striped"**>  
 <**tr**>  
 <**th class="text-center"**>Товар</**th**>  
 <**th class="text-center"**>Дата поставки</**th**>  
 </**tr**>  
 {% for schedule in schedule\_list %}  
 <**tr**>  
 <**td class="text-center"**>{{ schedule.product }}</**td**>  
 <**td class="text-center"**>{{ schedule.supply\_time }}</**td**>  
  
 </**tr**>  
 {% endfor %}  
 </**table**>  
 </**div**>  
 </**div**>  
 </**main**>  
 <**footer class="high bg-light"**>  
 </**footer**>  
  
 <**script src="https://d3js.org/d3.v5.min.js"**></**script**>  
 <**script src="{% static 'schedule/js/c3.min.js' %}"**></**script**>  
  
 <**script src="https://cdn.jsdelivr.net/npm/popper.js@1.16.0/dist/umd/popper.min.js" integrity="sha384-Q6E9RHvbIyZFJoft+2mJbHaEWldlvI9IOYy5n3zV9zzTtmI3UksdQRVvoxMfooAo" crossorigin="anonymous"**></**script**>  
 <**script src="https://stackpath.bootstrapcdn.com/bootstrap/5.0.0-alpha1/js/bootstrap.min.js" integrity="sha384-oesi62hOLfzrys4LxRF63OJCXdXDipiYWBnvTl9Y9/TRlw5xlKIEHpNyvvDShgf/" crossorigin="anonymous"**></**script**>  
</**body**>  
</**html**>

static\schedule\style.css

.img-fluid {  
 max-width: 100%;  
 height: auto;  
}  
.text-center {  
 text-align: center;  
}  
.td-text-short {  
 width: 50%;  
}  
.high {  
 height: 700px;  
}  
.list {  
 color: darkslateblue; */\* Цвет обычной ссылки \*/* text-decoration: none; */\* Убираем подчеркивание у ссылок \*/* }  
a:hover {  
 color: aqua; */\* Цвет ссылки при наведении на нее курсора мыши \*/* text-decoration: none; */\* Добавляем подчеркивание \*/*}  
li {  
 list-style-type: none;  
 }  
ul {  
 margin-left: 0;  
 padding-left: 0;  
}  
.logo {  
 width: 30px;  
 height: 30px;  
}  
.navbar-logo {  
 font-size: 2em;  
 color: darkslateblue; */\* Цвет обычной ссылки \*/* text-decoration: none; */\* Убираем подчеркивание у ссылок \*/*}  
.navbar-logo:hover {  
 color: darkslateblue; */\* Цвет ссылки при наведении на нее курсора мыши \*/* text-decoration: none; */\* Добавляем подчеркивание \*/*}  
img {  
 align-content: center;  
}  
.text-dark{  
 color: darkslateblue;  
}

1. **Экранные формы с примерами выполнения программы**



















