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ФАКУЛЬТЕТ **ИНФОРМАТИКА И СИСТЕМЫ УПРАВЛЕНИЯ**

КАФЕДРА **СИСТЕМЫ ОБРАБОТКИ ИНФОРМАЦИИ И УПРАВЛЕНИЯ**

Отчет по лабораторной работе № 5
«Работа с СУБД»
по курсу “Разработка интернет-приложений”

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_____ 29.11.2018

Москва, 2018

Задание лабораторной работы

В этой лабораторной работе вы познакомитесь с популярной СУБД MySQL, создадите свою базу данных. Также вам нужно будет дополнить свои классы предметной области, связав их с созданной базой. После этого вы создадите свои модели с помощью Django ORM, отобразите объекты из БД с помощью этих моделей и ClassBasedViews.
Для сдачи вы должны иметь:

- Скрипт с подключением к БД и несколькими запросами.
- Набор классов вашей предметной области с привязкой к СУБД (класс должен уметь хотя бы получать нужные записи из БД и преобразовывать их в объекты этого класса)
- Модели вашей предметной области
- View для отображения списка ваших сущностей

Исходный код

urls.py

```
from django.contrib import admin
from django.conf.urls import url
from django.views.generic import RedirectView
from testApp.views import PicturesView, ListPicturesView
from django.urls import path

urlpatterns = [
    url(r'^admin/', admin.site.urls),
    url(r'^favicon\.ico$',
RedirectView.as_view(url='/static/images/favicon.ico')),
    url(r'^$', ListPicturesView.as_view(), name='pictures-list'),
    path('pictures/', PicturesView.as_view()),
#    path('pictures_list', ListPicturesView.as_view()),
    url(r'^pictures/(?P<pictures_id>\d+)', PicturesView.as_view())
]
```

models.py

```
from __future__ import unicode_literals
from django.db import models


# Create your models here.

class Pictures(models.Model):
    name = models.CharField(max_length=50,)
    description = models.CharField(max_length=1000,)
    place = models.CharField(max_length=30,)

    def __str__(self):
        return ' '.join([self.name, ' in ', self.place, ])
```

views.py

```
from __future__ import unicode_literals
from django.shortcuts import render
from django.http import HttpResponse
from django.views.generic import View, ListView
```

```
from testApp.models import Pictures


# Create your views here.

def function_view(request):
    return HttpResponse('response from function view')

class ListPicturesView(ListView):
    model = Pictures
    template_name = 'pictures_list.html'
    def get(self, request):
        data = {
            'pictures': [
                {'name': 'Black square', 'description':'It was painting by
Malevich',
                 'place': 'Tretiakov gallery'},
                {'name': 'The starry night', 'description': 'It was painting
by van Gogh',
                 'place': 'Museum of Modern Art'},
            ]
        }
        return render(request, 'pictures_list.html', data)

class PicturesView(View):
    def get(self, request):
        data = {
            'pictures': [
                {'description': 'Many people go there everyday jast to see
something wonderful',
                 'place': 'Museums'},
            ]
        }
        return render(request, 'pictures.html', data)
```

connection.py

```
import pymysql

pymysql.install_as_MySQLdb()

class Connection:

    def __init__(self, user, password, db, host='localhost'):
        self.host = host
        self.user = user
        self.password = password
        self.db = db
        self.use_unicode = True
        self.charset = "utf8"
        self._connection = None

    @property
    def connection(self):
        return self._connection

    def __enter__(self):
        self.connect()

    def __exit__(self, exc_type, exc_val, exc_tb):
        self.disconnect()

    def connect(self):
        if not self._connection:
```

```
            self._connection = pymysql.connect(
                host=self.host,
                user=self.user,
                password=self.password,
                db=self.db,
                use_unicode=self.use_unicode,
                charset=self.charset
            )

    def disconnect(self):
        if self._connection:
            self._connection.close()


class Picture:
    def __init__(self, db_connection, name, description):
        self.db_connection = db_connection.connection
        self.name = name
        self.description = description

    def save(self):
        c = self.db_connection.cursor()
        c.execute("INSERT INTO pictures (name, description) VALUES(%s, %s);",
(self.name, self.description))

        self.db_connection.commit()
        c.close()


connection = Connection('root', '22121998', 'pic', 'localhost')
with connection:
    picture = Picture(connection,
                      'The Birth of Venus',
                      'Painting that depicts the emergence of Goddess Venus
from the sea as a beautiful woman')
    picture.save()
```

base.html

```
{% load staticfiles %}

<!DOCTYPE html>
<html lang="en">
    <head>
        <meta charset="utf-8">
        <meta http-equiv="X-UA-Compatible" content="IE=edge">
        <meta name="viewport" content="width=device-width, initial-scale=1">

        <meta name="description" content="">
        <meta name="place" content="">

        <title>{% block title %}{% endblock %}</title>

        <link href="{% static 'css/bootstrap.min.css' %}" rel="stylesheet">

        <style>
            body {
                padding-top: 30px;
                background-color: lavender;
            }
        </style>
    </head>

    <body>
```

```
        <nav class="navbar navbar-inverse navbar-fixed-top">
            <div class="container-fluid">
                <div class="navbar-header">
                    <button type="button" class="navbar-toggle collapsed"
data-toggle="collapse" data-target="#bs-example-navbar-collapse-1" aria-
expanded="false">
                        <span class="sr-only">Toggle navigation</span>
                        <span class="icon-bar"></span>
                        <span class="icon-bar"></span>
                        <span class="icon-bar"></span>
                    </button>
                    <!--a class="navbar-brand" href="/">lab4</a-->
                </div>
                <div class="collapse navbar-collapse" id="bs-example-navbar-
collapse-1">
                    {% block navbar-links %}
                    {% endblock %}
                </div>
            </div>
        </nav>

        <div class="container">
          <div class="starter-template">
              {% block body %}
              {% endblock %}
          </div>
        </div>
        <script
scr="https://ajax.googleapis.com/ajax/libs/jquery/1.12.4/jquery.min.js"></scr
ipt>
        <script scr="{% static 'js/bootstrap.js' %}"></script>
    </body>
</html>
```

pictures.html

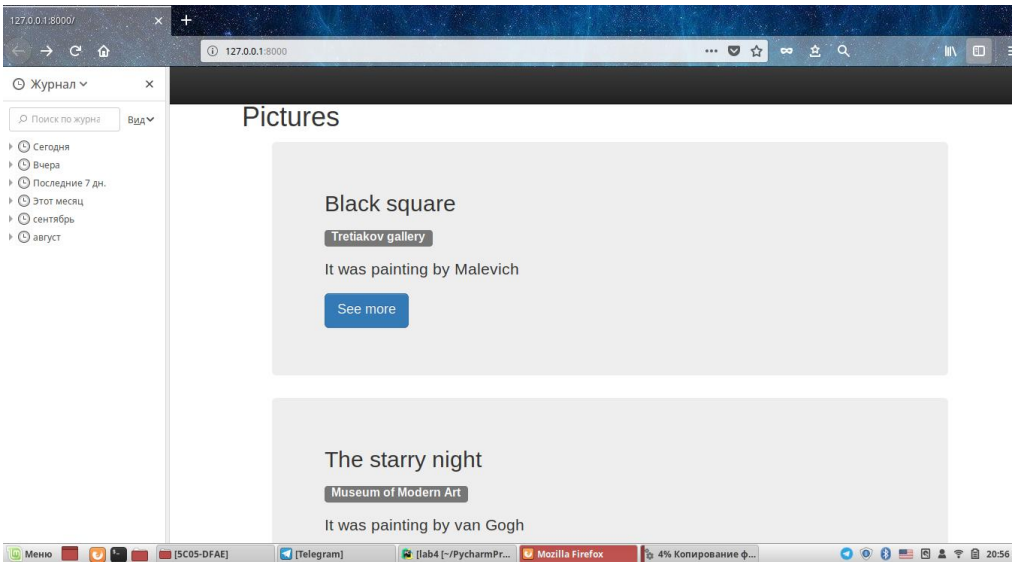
```
{% extends 'base.html' %}

{% block title %} {% endblock %}

{% block navbar-links %}

    <ul class="nav navbar-nav">
        <li><a href="/">< back to pictures</a></li>
    </ul>
{% endblock %}

{% block body %}
     <ul>
        {% for picture in pictures %}
            <h1>{{ pictures.name }}</h1>
            <div class="media">
                <div class="media-body">
                    <div class="jumbotron">
                        <h2>{{ picture.place }}</h2>
                    </div>
                    <div class="jumbotron">
                        <p>{{ picture.description }}</p>
                    </div>
                    <p><a class="btn btn-lg btn-success"
role="button">Watch</a></p>
                </div>
            </div>
      {% endfor %}
```

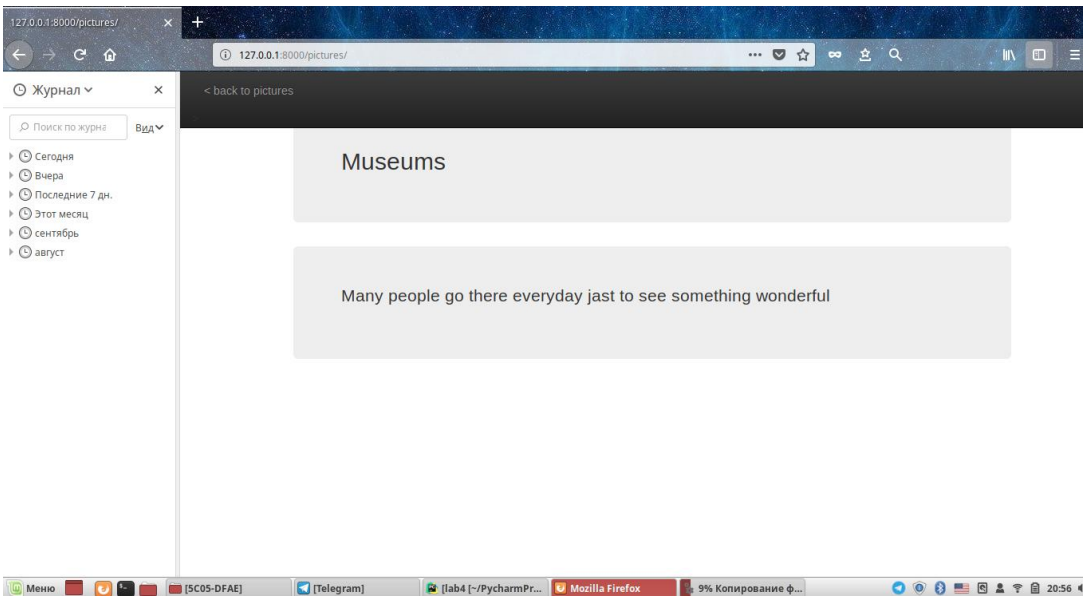
```
    </ul>
{% endblock %}
```

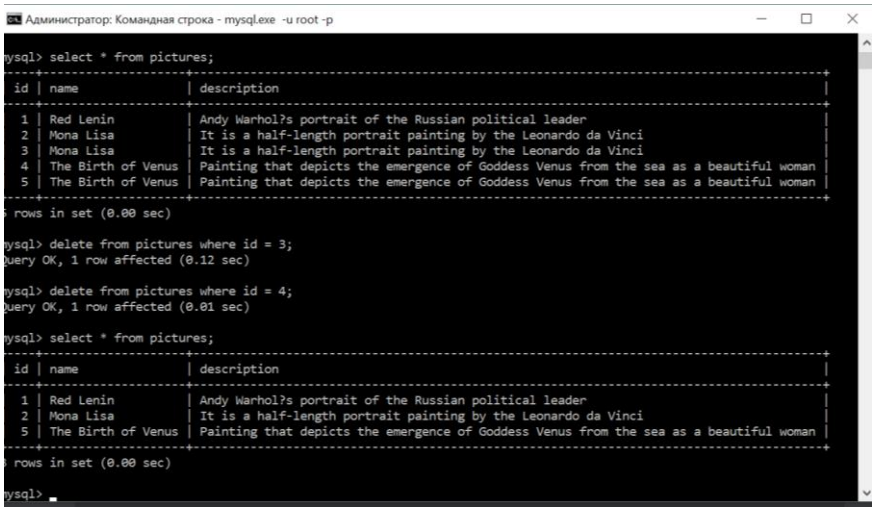
pictures_list.html

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

{% block title %} {% endblock %}

{% block navbar-links %} {% endblock %}

{% block body %}
    <h1>Pictures</h1>
    <ul>
        {% for picture in pictures %}
            <div class="jumbotron">
                <div class="media-left media-bottom">
                    <a href="#">
                        <h1 class="label label-default" alt="{{ picture.name
}}"></h1>
                    </a>
                </div>
                <div class="media-body">
                    <h2>{{ picture.name }}</h2>
                    <p><span class="label label-default">{{ picture.place
}}</span></p>
                    <p>{{ picture.description }}</p>
                    <p><a class="btn btn-primary btn-lg" href="pictures/{{
picture.id }}" role="button">See more</a></p>
                </div>
            </div>
        {% endfor %}
    </ul>
{% endblock %}
```

Результаты выполнения




127.0.0.1:8000/pictures/
127.0.0.1:8000/pictures/
Журнал
Поиск по журна
Вид
Сегодня
Вчера
Последние 7 дн.
Этот месяц
сентябрь
август
< back to pictures
Museums
Many people go there everyday jast to see something wonderful
Меню
[5C05-DFAE]
[Telegram]
[lab4 [~/PycharmPr...
Mozilla Firefox
9% Копирование ф...
20:56


Администратор: Командная строка - mysql.exe -u root -p
ysql> select * from pictures;
id	name	description
1	Red Lenin	Andy Warhol?s portrait of the Russian political leader
2	Mona Lisa	It is a half-length portrait painting by the Leonardo da Vinci
3	Mona Lisa	It is a half-length portrait painting by the Leonardo da Vinci
4	The Birth of Venus	Painting that depicts the emergence of Goddess Venus from the sea as a beautiful woman
5	The Birth of Venus	Painting that depicts the emergence of Goddess Venus from the sea as a beautiful woman
rows in set (0.00 sec)
ysql> delete from pictures where id = 3;
uery OK, 1 row affected (0.12 sec)
ysql> delete from pictures where id = 4;
uery OK, 1 row affected (0.01 sec)
ysql> select * from pictures;
id	name	description
1	Red Lenin	Andy Warhol?s portrait of the Russian political leader
2	Mona Lisa	It is a half-length portrait painting by the Leonardo da Vinci
5	The Birth of Venus	Painting that depicts the emergence of Goddess Venus from the sea as a beautiful woman
rows in set (0.00 sec)
ysql>