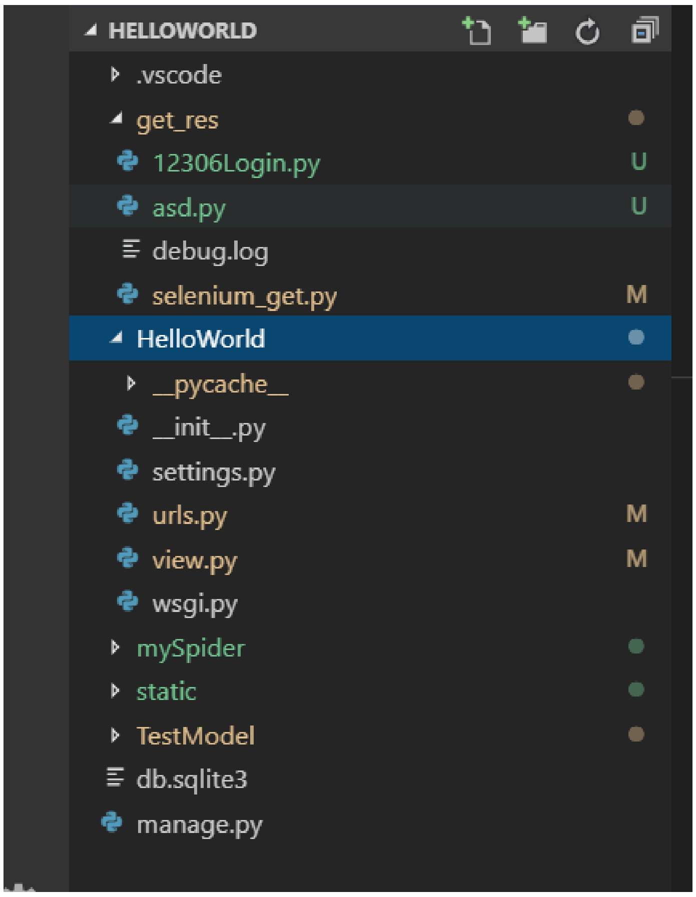
目录

基于 **Bootstrap** 的 **Django** 网站
将爬虫爬到的数据显示在网站

当前项目的目录结构



```
HELLOWORLD
  .vscode
  get_res                 ●
    12306Login.py         U
    asd.py                U
    debug.log
    selenium_get.py       M
  HelloWorld              ●
    __pycache__           ●
    __init__.py
    settings.py
    urls.py               M
    view.py               M
    wsgi.py
  mySpider                ●
  static                  ●
  TestModel               ●
  db.sqlite3
  manage.py
```

模型设计 **models.py**

```python
# models.py
from django.db import models
from django.contrib.auth.models import User

class Test(models.Model):
    name = models.CharField('分类',max_length=128)

    def __str__(self):
        return self.name

    class Meta:
        verbose_name='博客分类'
        verbose_name_plural=verbose_name

class Tag(models.Model):
    name=models.CharField('标签',max_length=128)

    def __str__(self):
        return self.name

    class Meta:
        verbose_name='博客标签'
        verbose_name_plural=verbose_name

class Entry(models.Model):
    title = models.CharField('文章标题',max_length=128)
    author = models.ForeignKey(User,verbose_name='作者
',on_delete=models.CASCADE)
    img =
models.ImageField(upload_to='blog_img',null=True,blank=True,verbose_nam
e='博客配图')
    body = models.TextField('正文',)
    abstract = models.TextField('摘要
',max_length=256,null=True,blank=True)
    visiting = models.PositiveIntegerField('访问量',default=0)
    category = models.ManyToManyField('Test',verbose_name='博客分类')
    tags = models.ManyToManyField('Tag',verbose_name='标签')
    created_time = models.DateTimeField('创建时间',auto_now_add=True)
    modifyed_time = models.DateTimeField('修改时间',auto_now=True)

    def __str__(self):
        return self.title

    class Meta:
        ordering = ['-created_time']
        verbose_name = '博客正文'
        verbose_name_plural = verbose_name

class phone(models.Model):
    img_url=models.CharField(max_length=128)
    link=models.CharField(max_length=128)
    price=models.CharField(max_length=128)
    name=models.CharField(max_length=128)
    comment=models.CharField(max_length=128)
```

在 settings 中设置连接数据库

```
DATABASES = {
   'default': {
        'ENGINE': 'django.db.backends.mysql',
        'NAME': 'test',
        'USER': 'root',
        'PASSWORD': '123456',
        'HOST':'localhost',
        'PORT':'3306',
    }
}
```

Urls 及视图设计

Helloword/urls.py

```
class  IndexView(View):
    def get(self,request):
        return render(request,'TestModel/index.html')

class LoginView(View):
    def get(self,request):
        return render(request,'TestModel/login.html')

    def post(self,request):
        adminlist=models.admin.objects.filter()
        print(request.POST)
        username=request.POST.get("username",None)
        pwd=request.POST.get("pwd",None)
        print(username,pwd)

        for admin in adminlist:
            if username==admin.adminkey and pwd==admin.adminpwd:
                request.session['username']="管理员"
                request.session.set_expiry(600)
                return redirect("/TestModel/")
            else:
                error_msg="用户名或者密码错误"
                return render(request,"login.html",{"error":error_msg})

urlpatterns = [
    url(r'^admin/',admin.site.urls),
    url(r'^TestModel/',include('TestModel.urls'),name='TestModel'),
    url(r'^$',LoginView.as_view(),name='login')
]
```

Helloword/view.py

```
from django.shortcuts import render
from TestModel import models

def login(request):
    adminlist=models.admin.opject.all()
    return
render(request,'TestModel/login.html',{"adminlist":adminlist})
```

Testmodel/urls.py

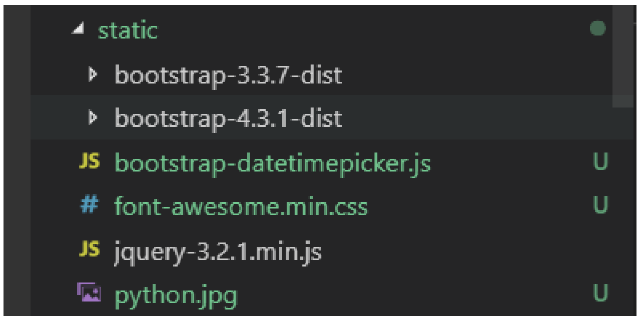
```
from django.conf.urls import url
from . import views
app_name = 'TestModel'

urlpatterns = [
    url(r'^$', views.index,name='blog_index'),
    url(r'^(?P<blog_id>[0-9]+)', views.detail,name='blog_detail'),
    url(r'^show/',views.lists,name='movie_show'),
    url(r'^selemiun_show/',views.phone_msg,name="phone_show")
]
```

TestModel/views.py

```
from django.shortcuts import render
from . import models

```

```
def index(request):
    return render(request,'TestModel/index.html',locals())


def detail(request,blog_id):

    return render(request,'TestModel/detail.html',locals())

def lists(request):
    movie_list=models.Test.objects.all()
    return
render(request,'TestModel/show.html',{"movie_list":movie_list})

def phone_msg(request):
    phone_list=models.phone.objects.all()
    return
render(request,'TestModel/selemiun_show.html',{"phone_list":phone_list}
)
```

Bootstrap 和 font-awesome 放在了 static 目录下



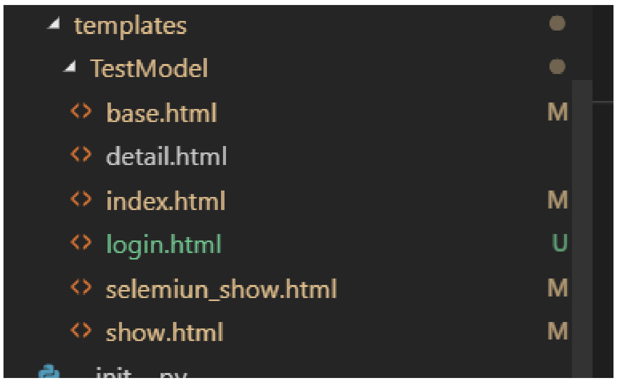
```
static
  bootstrap-3.3.7-dist
  bootstrap-4.3.1-dist
  bootstrap-datetimepicker.js   U
  font-awesome.min.css          U
  jquery-3.2.1.min.js
  python.jpg                    U
```

在 settings 中设置路径

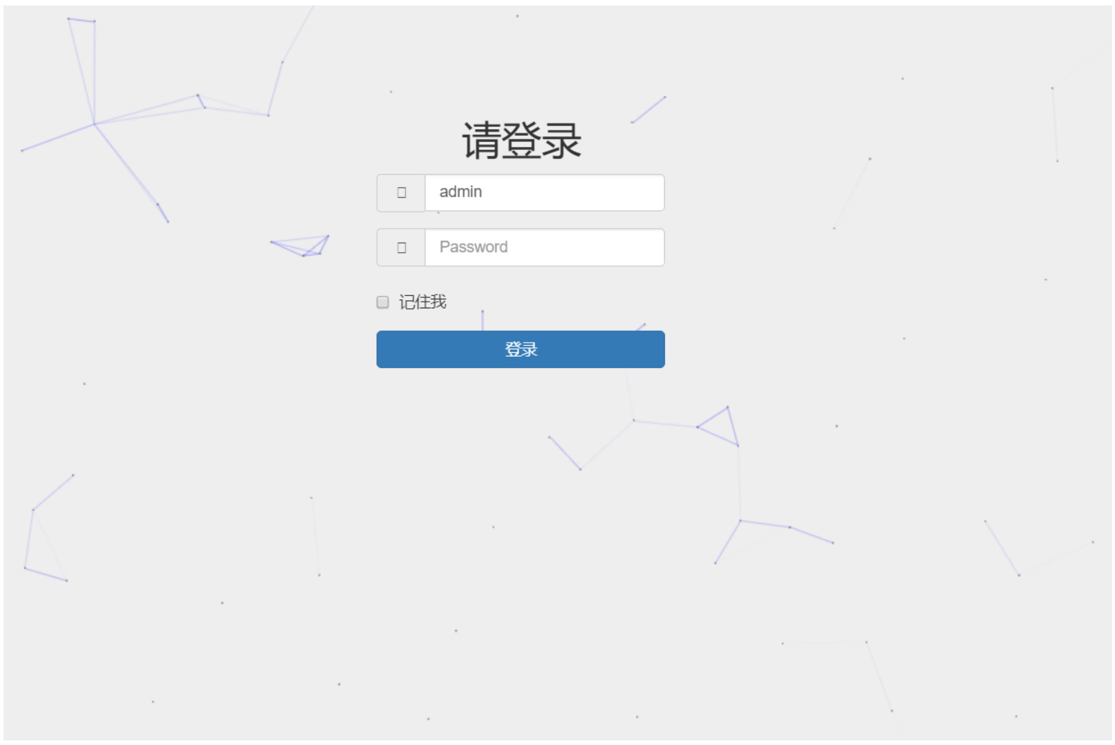
```
STATICFILES_DIRS = [
    os.path.join(BASE_DIR,'static'),
]
```

前端页面设计

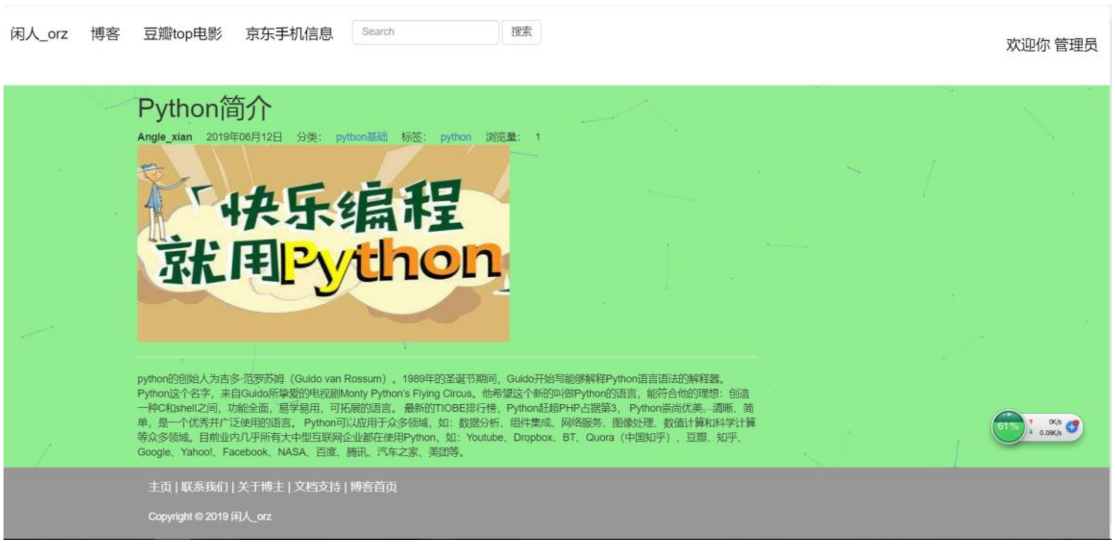
网站拥有页面如下


templates
TestModel
base.html M
detail.html
index.html M
login.html U
selemiun_show.html M
show.html M

其中 **base.html** 是公共页
index.html 是首页
login.html 是登录页面
Show.html 是展示爬到的豆瓣电影的数据
Selemiun_show.html 展示的是动态爬取的京东手机商品的数据
登录页面



首页



Python简介

Angle_xian 2019年06月12日 分类: python基础 标签: python 浏览量: 1

python的创始人为吉多·范罗苏姆（Guido van Rossum）。1989年的圣诞节期间，Guido开始写能够解释Python语言语法的解释器。Python这个名字，来自Guido所挚爱的电视剧Monty Python's Flying Circus。他希望这个新的叫做Python的语言，能符合他的理想：创造一种C和shell之间，功能全面，易学易用，可拓展的语言。最新的TIOBE排行榜，Python赶超PHP占据第3，Python崇尚优美、清晰、简单，是一个优秀并广泛使用的语言。Python可以应用于众多领域，如：数据分析、组件集成、网络服务、图像处理、数值计算和科学计算等众多领域。目前业内几乎所有大中型互联网企业都在使用Python，如：Youtube、Dropbox、BT、Quora（中国知乎）、豆瓣、知乎、Google、Yahoo!、Facebook、NASA、百度、腾讯、汽车之家、美团等。

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代码

Index.html

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

{% block title %}博客首页{% endblock %}

{% block content %}
    {% for line in show %}
    <div class="container">
        <div class="row">
            <div class="col-md-9">
                <h1>Python 简介</h1>
                <p>
                    <strong>Angle_xian</strong>
                    &nbsp;&nbsp;&nbsp;&nbsp;{{line.created_time|date:'Y 年
m 月 d 日' }}
                    &nbsp;&nbsp;&nbsp;&nbsp;分类:
                        &nbsp;&nbsp;<a href="#">python 基础</a>
                    &nbsp;&nbsp;&nbsp;&nbsp;标签:
                        &nbsp;&nbsp;<a href="#">python</a>
                    &nbsp;&nbsp;&nbsp;&nbsp;浏览量:
                            &nbsp;&nbsp;1
                        <img src="/static/python.jpg" width="60%"
height="270px"/>
                    <hr />
                    <p>
                        {{ line.body }}
                    </p>
                </p>
            </div>
        </div>
    </div>
    {% endfor %}
{% endblock %}
```

Base.html

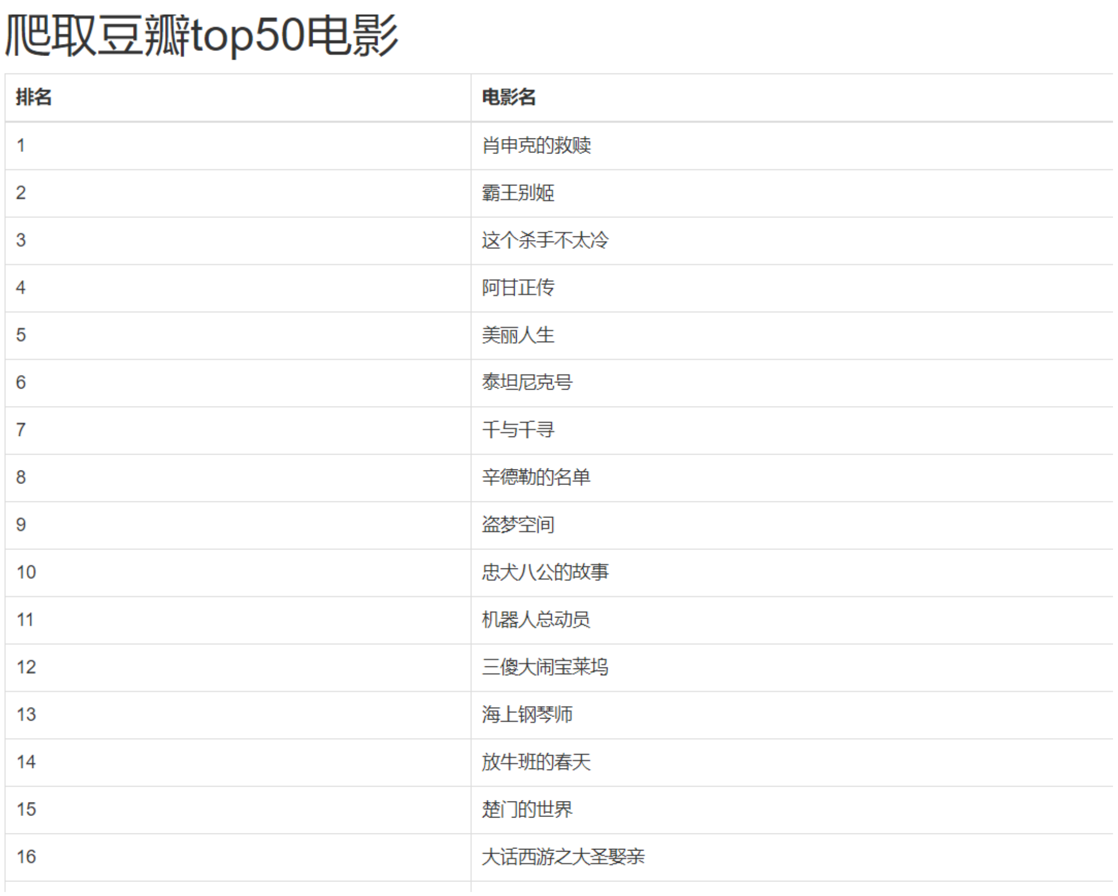
```
{% load staticfiles %}

<!DOCTYPE html>
<html lang="zh-CN">
<head>
    <meta charset="utf-8">
    <title>{% block title %}{% endblock %}</title>

    <link href="{% static 'bootstrap-3.3.7-dist/css/bootstrap.min.css' %}"
rel="stylesheet">
    <link href="{% static 'TestModel/css/TestModel_nav.css' %}"
rel="stylesheet">
    {% block css %}{% endblock %}

</head>
<body style="background-color:lightgreen">

<nav class="navbar navbar-fixed-top">
  <div class="container-fluid">
    <!-- Brand and toggle get grouped for better mobile display -->
    <div class="navbar-header">
      <button type="button" class="navbar-toggle collapsed"
data-toggle="collapse" data-target="#my-nav" 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="/TestModel/">闲人_orz</a>
    </div>

    <!-- Collect the nav links, forms, and other content for toggling -->
    <div class="collapse navbar-collapse" id="my-nav">
      <ul class="nav navbar-nav">
```

```
        <li class="active"><a href="/blog/">博客</a></li>
        <li ><a href="{%url 'TestModel:movie_show' %}">豆瓣 top 电影</a></li>
        <li ><a href="{%url 'TestModel:phone_show' %}">京东手机信息
</a></li>
      </ul>

      <form class="navbar-form navbar-left">
        <div class="form-group">
          <input type="text" class="form-control" placeholder="Search">
        </div>
        <button type="submit" class="btn btn-default">搜索</button>
      </form>

      <ul class="nav navbar-nav navbar-right">
        <li class="navbar-brand">欢迎你 {{request.session.username}}</li>
      </ul>

    </div><!-- /.navbar-collapse -->
  </div><!-- /.container-fluid -->
</nav>

{% block content %}{% endblock %}

 <footer>
    <div class="footer" role="navigation">
        <div class="container">
            <div class="navbar-text">
                <ul class="footer-text">
                    <li><a href="#">主页</a></li>
                               <li><a href="#">联系我们</a></li>
                               <li><a href="#">关于博主</a></li>
                               <li><a href="#">文档支持</a></li>
                               <li><a href="/blog/">博客首页</a></li>
                </ul>
                <p>Copyright © 2019 闲人_orz </p>

            </div>
        </div>
    </div>
</footer>


<script src="{% static 'jquery-3.2.1.min.js' %}"></script>
<script src="{% static
'bootstrap-3.3.7-dist/js/bootstrap.min.js' %}"></script>
```

```
<script type="text/javascript" color="0,0,255" opacity='0.7' zIndex="-2"
count="99"
src="//cdn.bootcss.com/canvas-nest.js/1.0.1/canvas-nest.min.js"></scrip
t>
{% block script %}{% endblock %}

</body>
</html>
```

其中头部和尾部是基于 bootstrap 创建的样式
背景使用了 canvas-nest 的粒子效果

爬取豆瓣电影



爬取豆瓣top50电影

排名	电影名
1	肖申克的救赎
2	霸王别姬
3	这个杀手不太冷
4	阿甘正传
5	美丽人生
6	泰坦尼克号
7	千与千寻
8	辛德勒的名单
9	盗梦空间
10	忠犬八公的故事
11	机器人总动员
12	三傻大闹宝莱坞
13	海上钢琴师
14	放牛班的春天
15	楚门的世界
16	大话西游之大圣娶亲

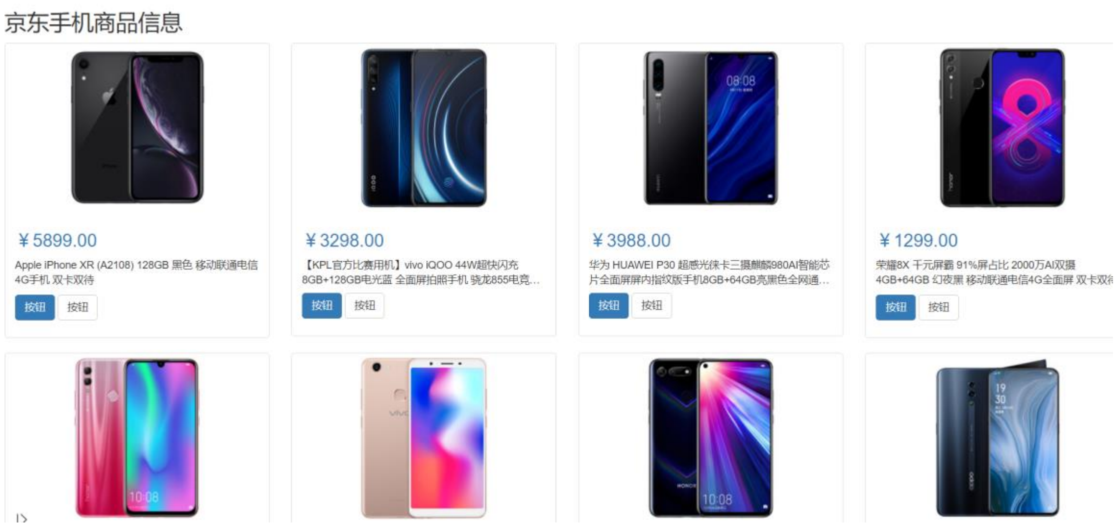
Show.html

```
{% load staticfiles %}
<!DOCTYPE html>
<html lang="zh-CN">
```

```html
<head>
    <meta charset="utf-8">
    <title>豆瓣 top25 电影</title>
    <link href="{% static 'bootstrap-3.3.7-dist/css/bootstrap.min.css' %}"
rel="stylesheet">

</head>
<body>
<h1>爬取豆瓣 top50 电影</h1>
<table class="table table-bordered">
    <thead>
    <tr>
        <th>排名</th>
        <th>电影名</th>
    </tr>
    </thead>
    <tbody>
    {% for line in movie_list %}
    <tr>
        <td>{{line.id}}</td>
        <td>{{line.name}}</td>
    </tr>
    {% endfor %}
    </tbody>
</table>

<script src="{% static 'jquery-3.2.1.min.js' %}"></script>
<script src="{% static
'bootstrap-3.3.7-dist/js/bootstrap.min.js' %}"></script>
</body>
</html>
```

其中用了 bootstrap 中的表格的网格样式对数据进行排版

展示页面 2


京东手机商品信息

￥5899.00
Apple iPhone XR (A2108) 128GB 黑色 移动联通电信4G手机 双卡双待
按钮 按钮

￥3298.00
【KPL官方比赛用机】vivo iQOO 44W超快闪充 8GB+128GB电光蓝 全面屏拍照手机 骁龙855电竞…
按钮 按钮

￥3988.00
华为 HUAWEI P30 超感光徕卡三摄麒麟980AI智能芯片全面屏屏内指纹版手机8GB+64GB亮黑色全网通…
按钮 按钮

￥1299.00
荣耀8X 千元屏霸 91%屏占比 2000万AI双摄 4GB+64GB 幻夜黑 移动联通电信4G全面屏 双卡双
按钮 按钮

Selemiun.html
```
{% load staticfiles %}
<!DOCTYPE html>
<html lang="zh-CN">
<head>
    <meta charset="utf-8">
    <title>动态爬取京东手机商品</title>
    <link href="{% static 'bootstrap-3.3.7-dist/css/bootstrap.min.css' %}"
rel="stylesheet">
    <link href="{% static 'TestModel/css/index.css' %}" rel="stylesheet">
</head>
<body>
<h2>京东手机商品信息</h2>
<div class="row">
        {% for line in phone_list %}
        <div class="col-sm-6 col-md-3">
            <div class="thumbnail">
               <a target="_blank" title="asdfa"
href="http://www.baidu.com">
               <img src="{{line.img_url}}"
                alt="通用的占位符缩略图"></a>
               <div class="caption">
                   <h3
style="overflow:hidden;white-space:nowrap;text-overflow:ellipsis;"><a
href="{{line.link}}">￥{{line.price}}</a></h3>
                   <p>{{line.name}}</p>
                   <p>
```

```
                        <a href="#" class="btn btn-primary" role="button">
                            按钮
                        </a>
                        <a href="#" class="btn btn-default" role="button">
                            按钮
                        </a>
                    </p>
                </div>
            </div>
        </div>
        {% endfor %}
    </div>
<script src="{% static 'jquery-3.2.1.min.js' %}"></script>
<script src="{% static
'bootstrap-3.3.7-dist/js/bootstrap.min.js' %}"></script>
</body>
</html>
```

用 bootstrap 缩略图的样式将爬到的数据展示出来

其中数据数据是由爬虫所爬得
豆瓣电影爬虫代码为

```
import requests
import lxml
from lxml import etree
import csv
import pymysql

class Spider:
    def __init__(self,version):
        self.version = version
        self.result = []

    def get_page(self,start_num):
        url='https://movie.douban.com/top250?start=%s&filter=' %
start_num
        res=requests.get(url)

        tree=etree.HTML(res.text)
        top205=tree.xpath('//span[@class="title"][1]/text()')
        print(top205)
        return top205
    def go(self):
        print("Start..")
        for i in range(0,1):
            top250=self.get_page(i*25)
            self.result +=top250

        return self.result

if __name__=="__main__":
    my_spider=Spider('1.0')
    res=my_spider.go()
    with open('D:/PySy.csv','a+',encoding='UTF-8')as csvfile:
        w=csv.writer(csvfile)
        w.writerow(res)

def getImage():
    my_spider=Spider('1.0')
    res=my_spider.go()
    db=pymysql.connect("localhost","root","123456","mysql")
    cursor=db.cursor()
    sql="INSERT INTO MovieTop(movie) VALUES (%s)"
    for a in res:
        cursor.execute(sql,(a))
        db.commit()
    db.close()
```

动态爬取京东代码为

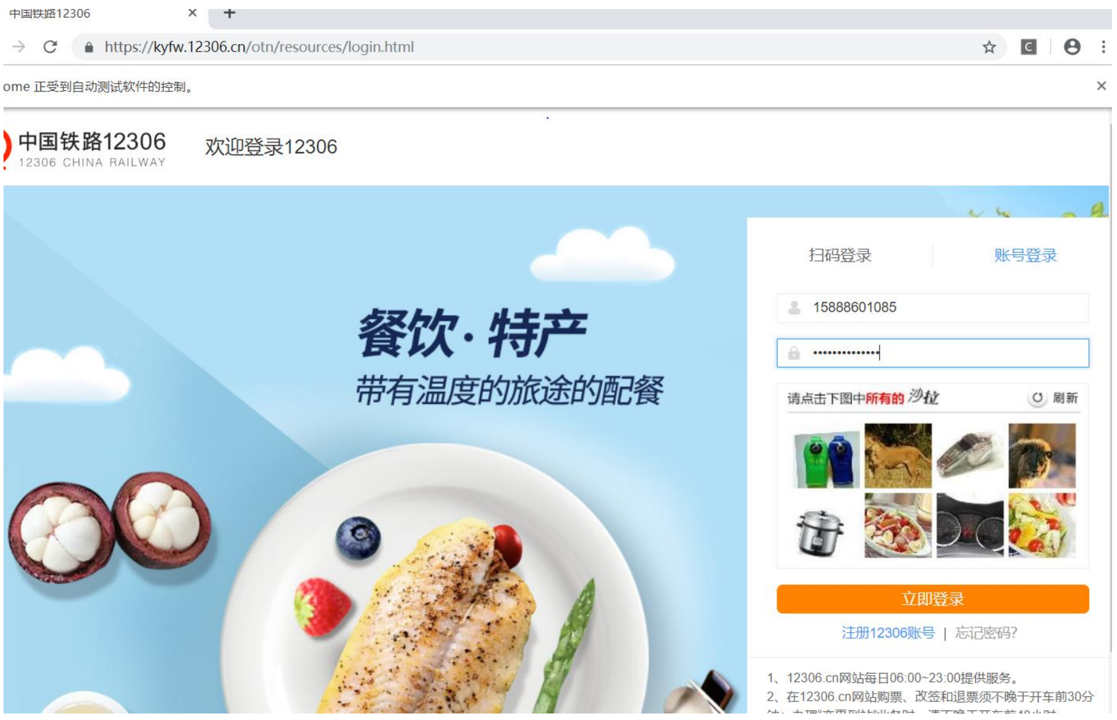
```
from selenium import webdriver
from selenium.webdriver.support.wait import WebDriverWait
from selenium.webdriver.support import expected_conditions as EC
from selenium.webdriver.common.by import By
import selenium.common.exceptions
import json
import csv
import time
import pymysql

class JdSpider():
    def open_file(self):
        self.fm = input('请输入文件保存格式（txt、json、csv）：')
        while self.fm!='txt' and self.fm!='json' and self.fm!='csv':
            self.fm = input('输入错误，请重新输入文件保存格式(txt、json、csv)：
')
        if self.fm=='txt' :
            self.fd = open('D:/Jd.txt','w',encoding='utf-8')
        elif self.fm=='json' :
            self.fd = open('Jd.json','w',encoding='utf-8')
        elif self.fm=='csv' :
            self.fd = open('Jd.csv','w',encoding='utf-8',newline='')

    def open_browser(self):
        self.browser = webdriver.Chrome()
        self.browser.implicitly_wait(10)
        self.wait = WebDriverWait(self.browser,10)

    def init_variable(self):
        self.data = zip()
        self.isLast = False

    def parse_page(self):
        try:
            skus =
self.wait.until(EC.presence_of_all_elements_located((By.XPATH,'//li[@cl
ass="gl-item"]')))
            skus = [item.get_attribute('data-sku') for item in skus]
            links = ['https://item.jd.com/{sku}.html'.format(sku=item) for
item in skus]
            prices =
self.wait.until(EC.presence_of_all_elements_located((By.XPATH,'//div[@c
lass="gl-i-wrap"]/div[3]/strong/i')))
            prices = [item.text for item in prices]
            names =
self.wait.until(EC.presence_of_all_elements_located((By.XPATH,'//div[@c
lass="gl-i-wrap"]/div[4]/a/em')))
            names = [item.text for item in names]
            comments =
self.wait.until(EC.presence_of_all_elements_located((By.XPATH,'//div[@c
lass="gl-i-wrap"]/div[5]/strong')))
            comments = [item.text for item in comments]
            img_urls =
self.wait.until(EC.presence_of_all_elements_located((By.XPATH,'//div[@c
lass="gl-i-wrap"]/div[1]/a/img')))
            img_urls = [item.get_attribute('src') for item in img_urls]
            self.data = zip(links,prices,names,comments,img_urls)
        except selenium.common.exceptions.TimeoutException:
            print('parse_page: TimeoutException1')
            self.parse_page()
        except selenium.common.exceptions.StaleElementReferenceException:
            print('parse_page: StaleElementReferenceException')
            self.browser.refresh()

    def turn_page(self):
        try:

self.wait.until(EC.element_to_be_clickable((By.XPATH,'//a[@class="pn-ne
xt"]'))).click()
            time.sleep(1)

self.browser.execute_script("window.scrollTo(0,document.body.scrollHeig
ht)")
            time.sleep(2)
        except selenium.common.exceptions.NoSuchElementException:
            self.isLast = True
        except selenium.common.exceptions.TimeoutException:
            print('turn_page: TimeoutException2')
            self.turn_page()
        except selenium.common.exceptions.StaleElementReferenceException:
            print('turn_page: StaleElementReferenceException')
            self.browser.refresh()

    def write_to_file(self):
        if self.fm == 'txt':
            for item in self.data:

self.fd.write('----------------------------------------\n')
                self.fd.write('link: ' + str(item[0]) + '\n')
                self.fd.write('price: ' + str(item[1]) + '\n')
                self.fd.write('name: ' + str(item[2]) + '\n')
                self.fd.write('comment: ' + str(item[3]) + '\n')
        if self.fm == 'json':
            temp = ('link','price','name','comment')
            for item in self.data:

json.dump(dict(zip(temp,item)),self.fd,ensure_ascii=False)
        if self.fm == 'csv':
            writer = csv.writer(self.fd)
            for item in self.data:
                writer.writerow(item)
    def write_to_mysql(self):
        db=pymysql.connect("localhost","root","123456","test")
        cursor=db.cursor()
        sql="INSERT INTO testmodel_phone(link,price,name,comment,img_url)
VALUES (%s,%s,%s,%s,%s)"
        for item in self.data:
            for item in self.data:

cursor.execute(sql,(item[0],item[1],item[2],item[3],item[4]))
                db.commit()
            db.close()


    def close_file(self):
        self.fd.close()

    def close_browser(self):
        self.browser.quit()

    def crawl(self):
        #self.open_file()
        self.open_browser()
        self.init_variable()
        db=pymysql.connect("localhost","root","123456","test")
        cursor=db.cursor()
        sql="truncate table testmodel_phone"
        cursor.execute(sql)
        db.commit()
        db.close()
        print('开始爬取')

self.browser.get('https://search.jd.com/Search?keyword=%E6%89%8B%E6%9C%
BA&enc=utf-8')
        time.sleep(1)

self.browser.execute_script("window.scrollTo(0,document.body.scrollHeig
ht)")
        time.sleep(2)
        count = 0
        while count!=2:
            count += 1
            print('正在爬取第 ' + str(count) + ' 页......')
            self.parse_page()
            self.write_to_mysql()
            self.turn_page()
        #self.close_file()
        self.close_browser()
        print('结束爬取')

if __name__ == '__main__':
    spider = JdSpider()
    spider.crawl()
```

12306 的自动登录（通过验证码）

```
class Demo():
    def __init__(self):
        self.coordinate=[[-105,-20],[-35,-20],[40,-20],[110,-20],[-105,
50],[-35,50],[40,50],[110,50]]
    def login(self):
        login_url="https://kyfw.12306.cn/otn/resources/login.html"
        driver = webdriver.Chrome()
        driver.set_window_size(1200, 900)
        driver.get(login_url)
        time.sleep(1)
        account=driver.find_element_by_class_name("login-hd-account")
        account.click()
        userName=driver.find_element_by_id("J-userName")
        userName.send_keys("15888601085")
        password=driver.find_element_by_id("J-password")
        password.send_keys("ljh13127984971")
        self.driver=driver
    def getVerifyImage(self):
        try:
            img_element =WebDriverWait(self.driver, 100).until(
                EC.presence_of_element_located((By.ID, "J-loginImg"))
                )
        except Exception :
            print(u"网络开小差,请稍后尝试")
        base64_str=img_element.get_attribute("src").split(",")[-1]
        imgdata=base64.b64decode(base64_str)
        with open('d:\\verify.jpg','wb') as file:
            file.write(imgdata)
        self.img_element=img_element
    def getVerifyResult(self):
```

```python
        driver1 = webdriver.Chrome()
        driver1.get('http://littlebigluo.qicp.net:47720/')
        upload = driver1.find_elements_by_tag_name('input')[0]
        time.sleep(3)
        upload.send_keys('d:\\verify.jpg')  # send_keys
        submit = driver1.find_elements_by_tag_name('input')[1].click()
        response=driver1.find_element_by_xpath("/html/body/p[1]/font/fo
nt/b").text
        result=[]
        for i in response.split(" "):
            result.append(int(i)-1)
        self.result=result
        driver1.close
        print(result)
    def moveAndClick(self):
        try:
            Action=ActionChains(self.driver)
            for i in self.result:
                Action.move_to_element(self.img_element).move_by_offset
(self.coordinate[i][0],self.coordinate[i][1]).click()
            Action.perform()
        except Exception as e:
            print(e)
    def submit(self):
        self.driver.find_element_by_id("J-login").click()
    def __call__(self):
        self.login()
        time.sleep(3)
        self.getVerifyImage()
        time.sleep(1)
        self.getVerifyResult()
        time.sleep(1)
        self.moveAndClick()
        time.sleep(1)
        self.submit()

Demo()()
```

演示


中国铁路12306
https://kyfw.12306.cn/otn/resources/login.html
餐饮· 特产
带有温度的旅途的配餐
扫码登录
账号登录
刷新
立即登录
注册12306账号 | 忘记密码?

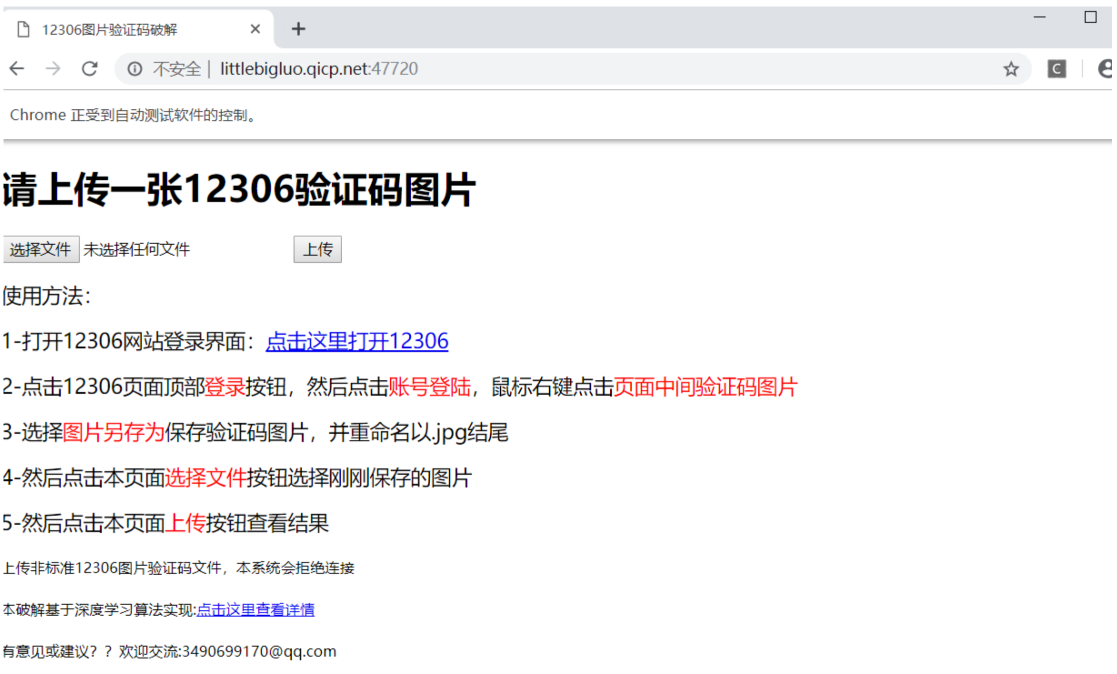
ome 正受到自动测试软件的控制。

中国铁路12306
12306 CHINA RAILWAY
欢迎登录12306

15888601085

请点击下图中**所有的** 沙拉

1、12306.cn网站每日06:00~23:00提供服务。
2、在12306.cn网站购票、改签和退票须不晚于开车前30分



Chrome 正受到自动测试软件的控制。

请上传一张12306验证码图片

未选择任何文件

使用方法：

1-打开12306网站登录界面：点击这里打开12306

2-点击12306页面顶部登录按钮，然后点击账号登陆，鼠标右键点击页面中间验证码图片

3-选择图片另存为保存验证码图片，并重命名以.jpg结尾

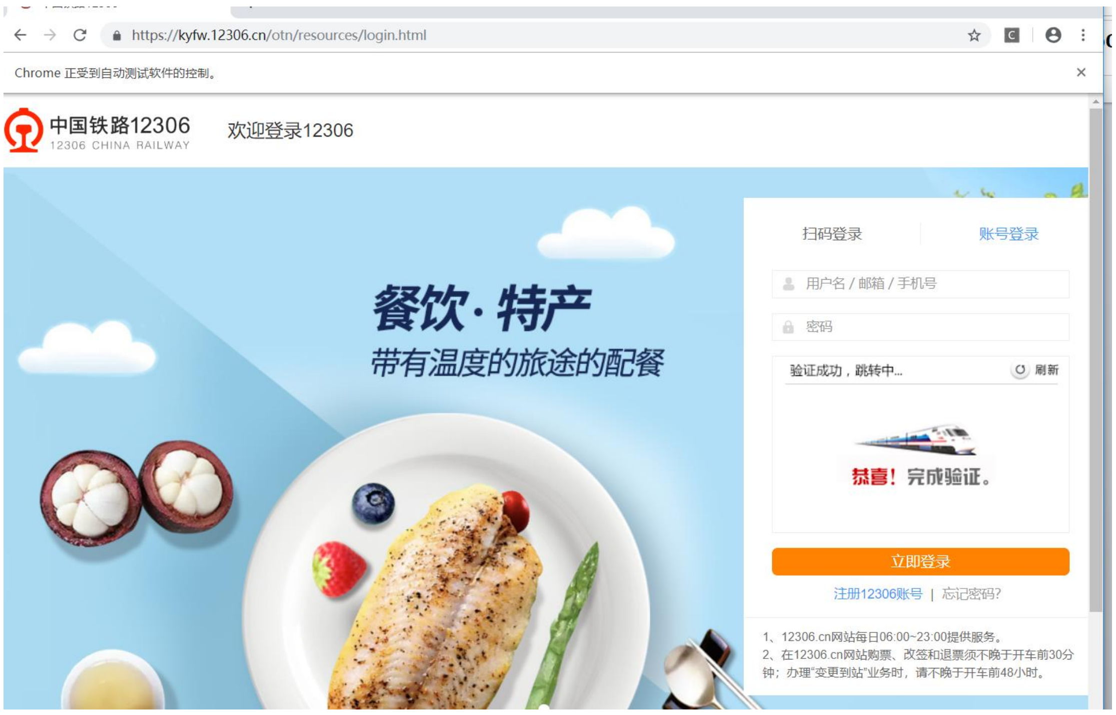
4-然后点击本页面选择文件按钮选择刚刚保存的图片

5-然后点击本页面上传按钮查看结果

上传非标准12306图片验证码文件，本系统会拒绝连接

本破解基于深度学习算法实现:点击这里查看详情

有意见或建议？？ 欢迎交流:3490699170@qq.com



https://kyfw.12306.cn/otn/resources/login.html

Chrome 正受到自动测试软件的控制。

中国铁路12306 12306 CHINA RAILWAY 欢迎登录12306

扫码登录 账号登录

用户名 / 邮箱 / 手机号

密码

验证成功，跳转中... 刷新

恭喜！完成验证。

立即登录

注册12306账号 | 忘记密码?

1、12306.cn网站每日06:00~23:00提供服务。
2、在12306.cn网站购票、改签和退票须不晚于开车前30分钟；办理"变更到站"业务时，请不晚于开车前48小时。