# Database System Labs
# - Web Application I BASED on DB

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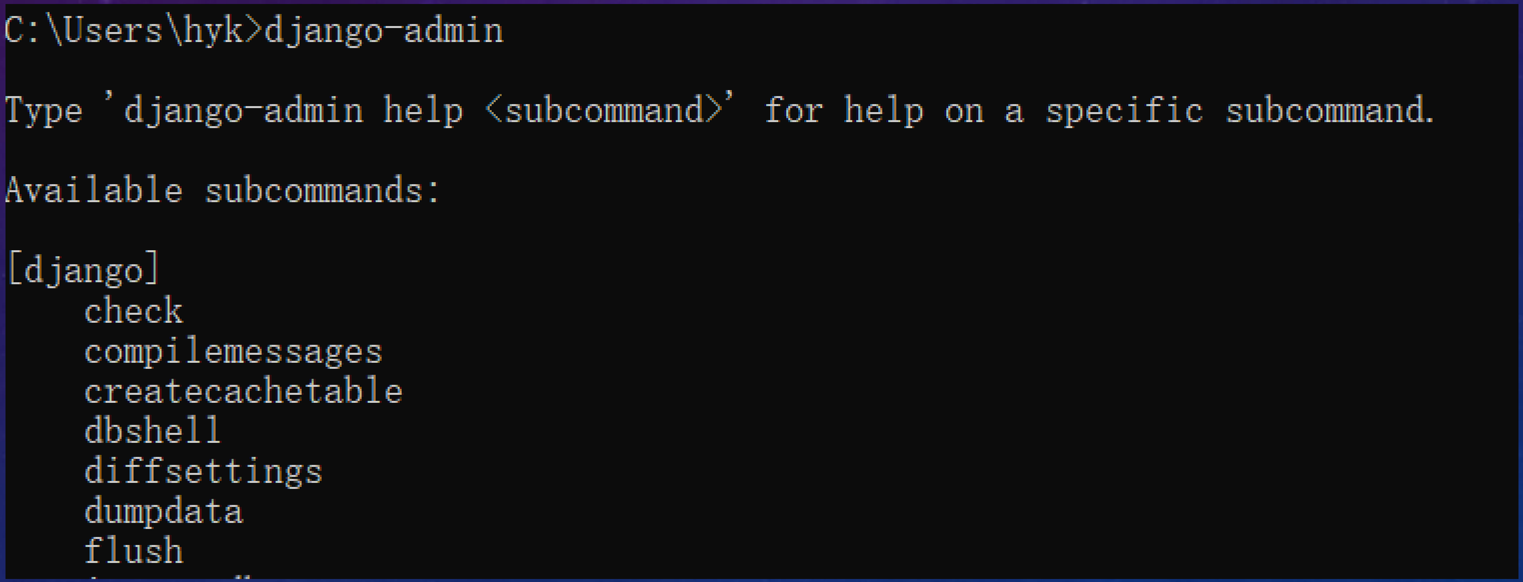
# OBJECTIVES

- Web Application Based On DB
  - DB: mysql
  - Programming Language: Python
  - Web Frame: Django
  - Web browser: firefox, chrome, …

# INSTALL DJANGO

$pip install Django

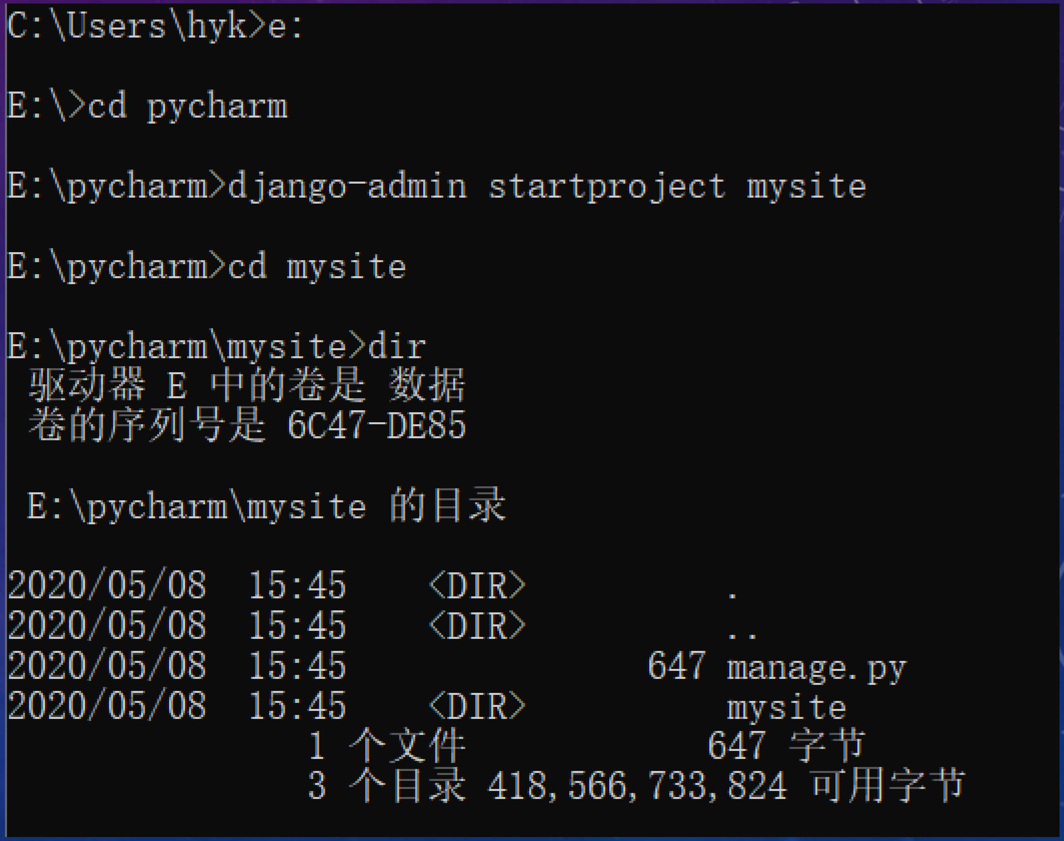


```
C:\Users\hyk>django-admin

Type 'django-admin help <subcommand>' for help on a specific subcommand.

Available subcommands:

[django]
    check
    compilemessages
    createcachetable
    dbshell
    diffsettings
    dumpdata
    flush
```

# NEW PROJECT

进入项目所在文件夹，按住shift+右键，选择“在此处打开Powershell”或者“在此处打开cmd窗口”
也可以在命令行中通过cd 命令进入项目所在文件夹

django-admin startproject mysite

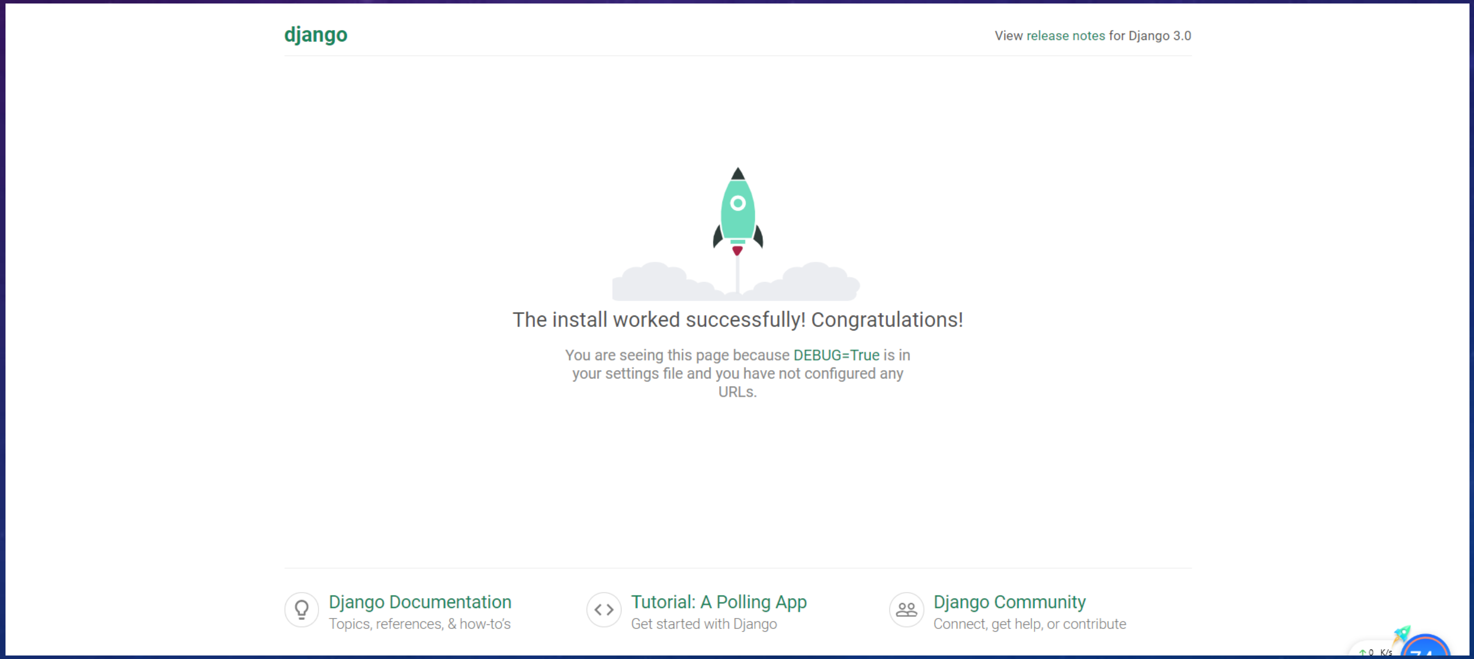


```
C:\Users\hyk>e:

E:\>cd pycharm

E:\pycharm>django-admin startproject mysite

E:\pycharm>cd mysite

E:\pycharm\mysite>dir
 驱动器 E 中的卷是 数据
 卷的序列号是 6C47-DE85

 E:\pycharm\mysite 的目录

2020/05/08  15:45    <DIR>          .
2020/05/08  15:45    <DIR>          ..
2020/05/08  15:45               647 manage.py
2020/05/08  15:45    <DIR>          mysite
               1 个文件            647 字节
               3 个目录 418,566,733,824 可用字节
```

# START WEB

```
python3 manage.py runserver 0.0.0.0:8000
```

Web browser:localhost:8000



django

View release notes for Django 3.0

The install worked successfully! Congratulations!

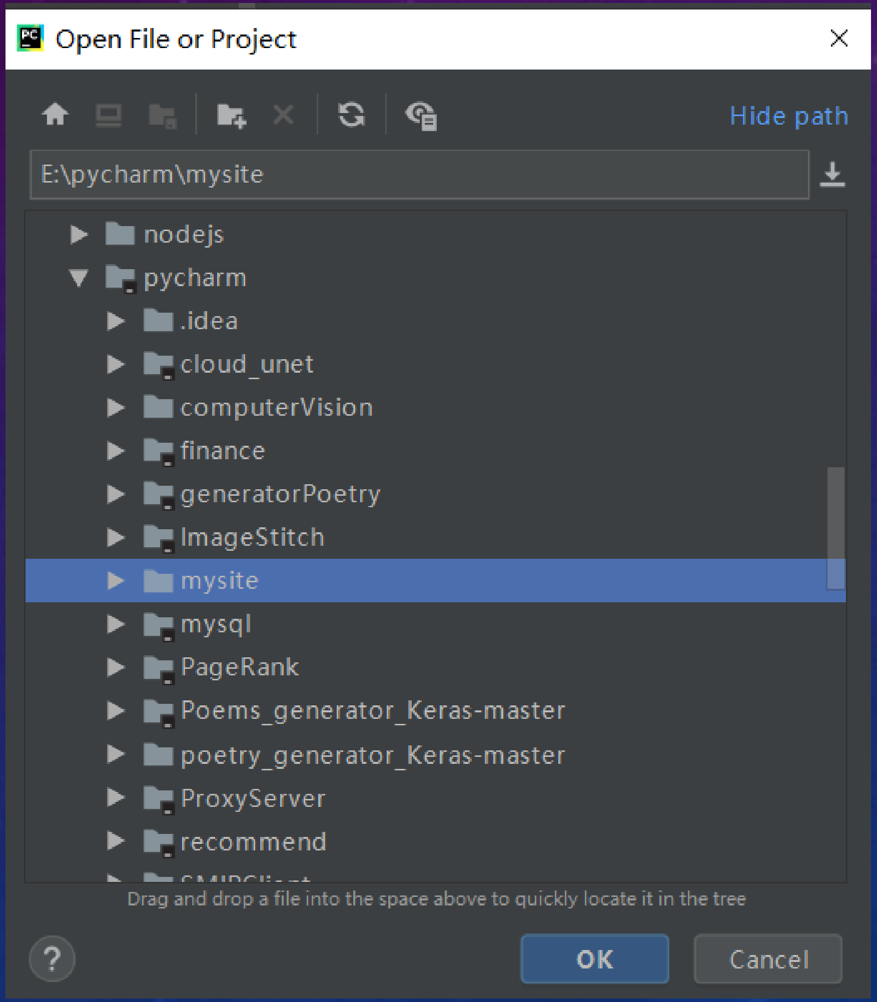
You are seeing this page because DEBUG=True is in your settings file and you have not configured any URLs.

Django Documentation
Topics, references, & how-to's

Tutorial: A Polling App
Get started with Django

Django Community
Connect, get help, or contribute

# OPEN PROJECT WITH PYCHARM



Open File or Project

E:\pycharm\mysite

```
▶ nodejs
▼ pycharm
    ▶ .idea
    ▶ cloud_unet
    ▶ computerVision
    ▶ finance
    ▶ generatorPoetry
    ▶ ImageStitch
    ▶ mysite
    ▶ mysql
    ▶ PageRank
    ▶ Poems_generator_Keras-master
    ▶ poetry_generator_Keras-master
    ▶ ProxyServer
    ▶ recommend
```

Drag and drop a file into the space above to quickly locate it in the tree

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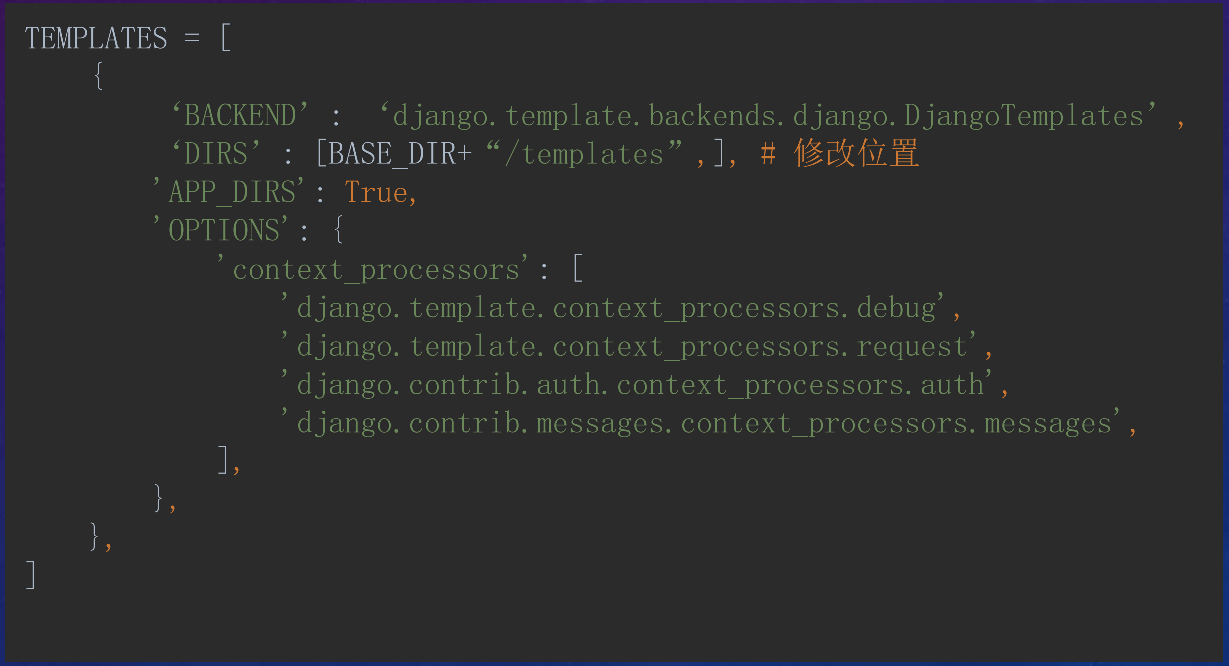
# TEMPLATES

在mysite项目下新建templates 文件夹

mysite/mysite/settings.py



```
TEMPLATES = [
    {
        ‘BACKEND’ :  ‘django.template.backends.django.DjangoTemplates’ ,
        ‘DIRS’ : [BASE_DIR+ “/templates”,], # 修改位置
        ’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’,
            ],
        },
    },
]
```

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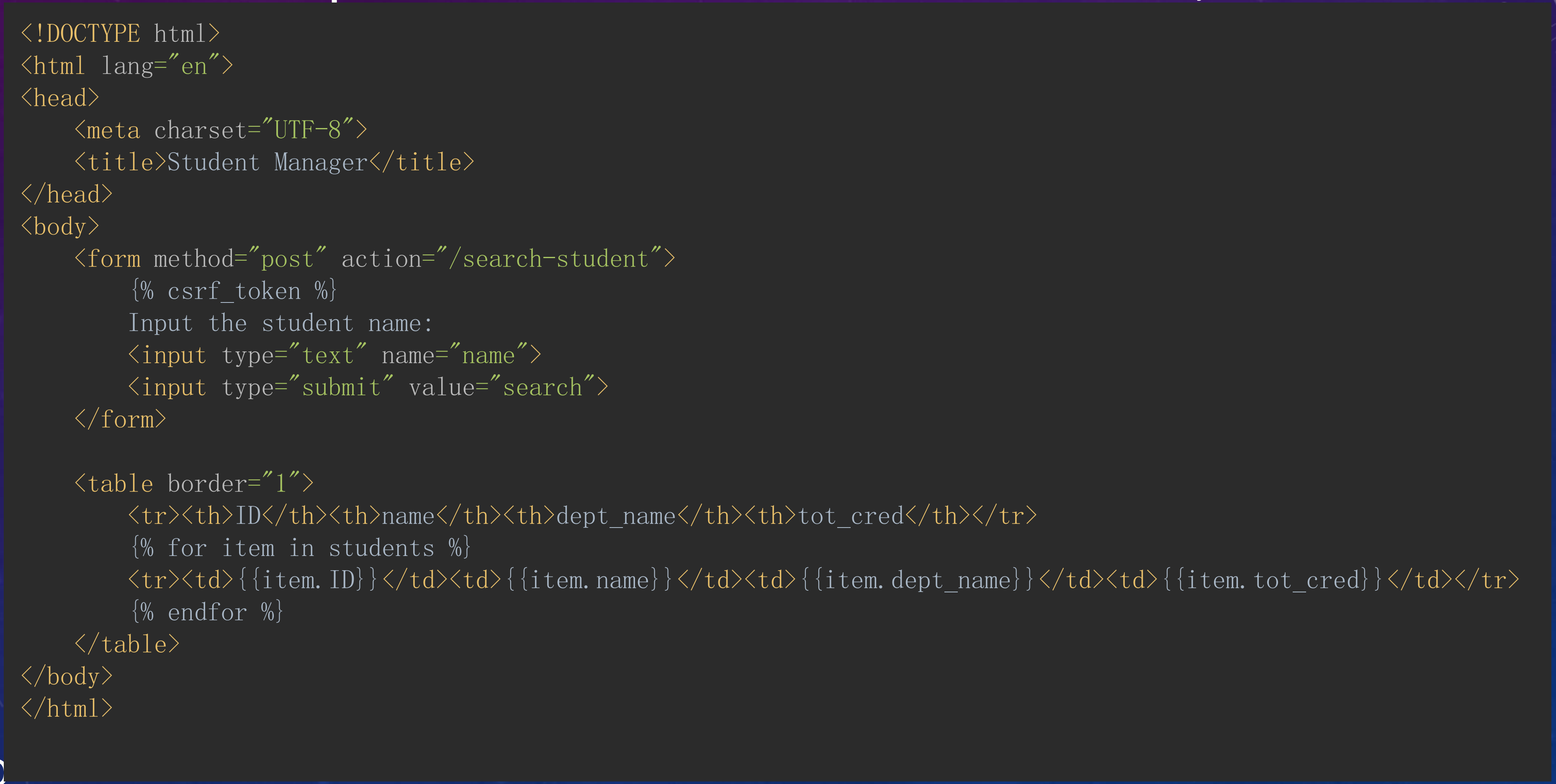
# TEMPLATES

在项目templates 文件夹下新建student.html,代码如下：

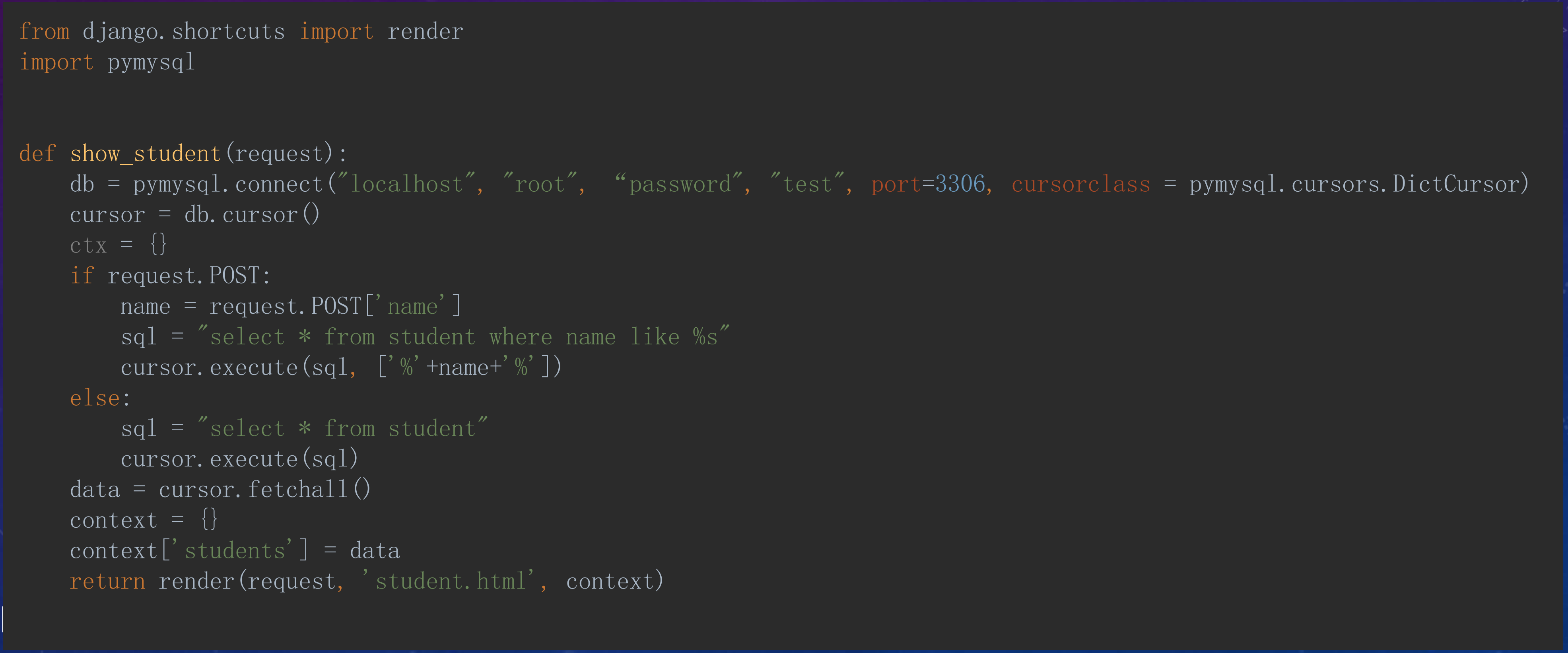


```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <title>Student Manager</title>
</head>
<body>
    <form method="post" action="/search-student">
        {% csrf_token %}
        Input the student name:
        <input type="text" name="name">
        <input type="submit" value="search">
    </form>

    <table border="1">
        <tr><th>ID</th><th>name</th><th>dept_name</th><th>tot_cred</th></tr>
        {% for item in students %}
        <tr><td>{{item.ID}}</td><td>{{item.name}}</td><td>{{item.dept_name}}</td><td>{{item.tot_cred}}</td></tr>
        {% endfor %}
    </table>
</body>
</html>
```

# VIEW

在先前创建的 mysite 目录下的 mysite 目录新建一个 view.py 文件，并输入代码：

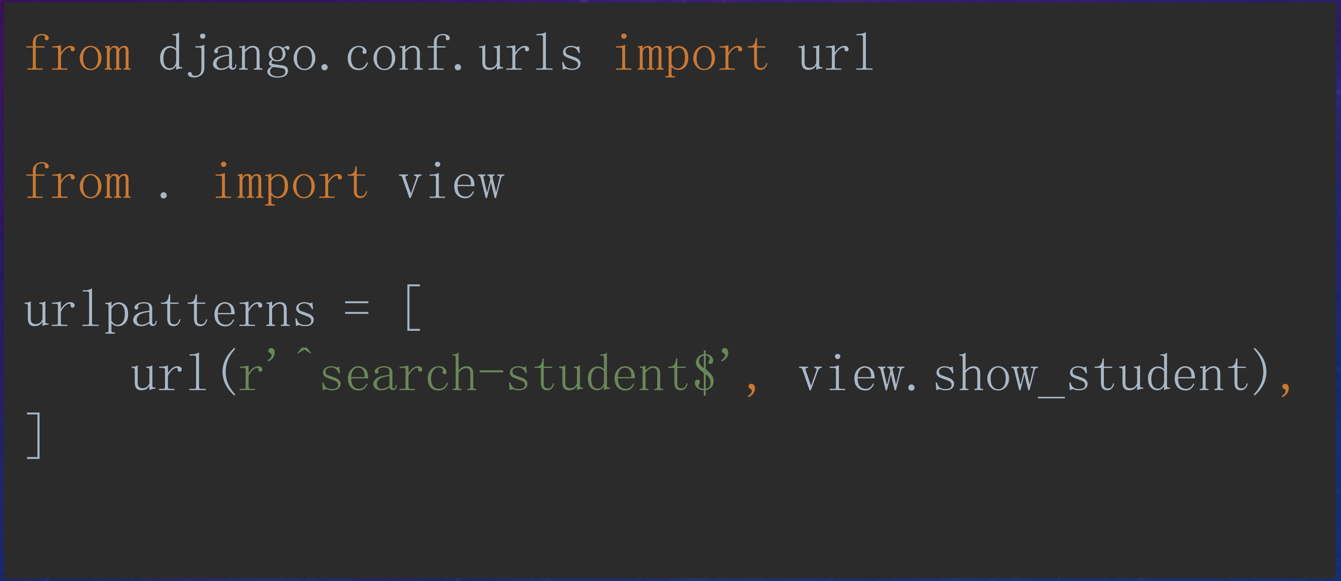


```
from django.shortcuts import render
import pymysql


def show_student(request):
    db = pymysql.connect(”localhost”, ”root”,  “password”, ”test”, port=3306, cursorclass = pymysql.cursors.DictCursor)
    cursor = db.cursor()
    ctx = {}
    if request.POST:
        name = request.POST[’name’]
        sql = ”select * from student where name like %s”
        cursor.execute(sql, [’%’+name+’%’])
    else:
        sql = ”select * from student”
        cursor.execute(sql)
    data = cursor.fetchall()
    context = {}
    context[’students’] = data
    return render(request, ’student.html’, context)
```

# URLS

接着，绑定 URL 与视图函数。打开 urls.py 文件，删除原来代码，将以下代码复制粘贴到 urls.py 文件中：

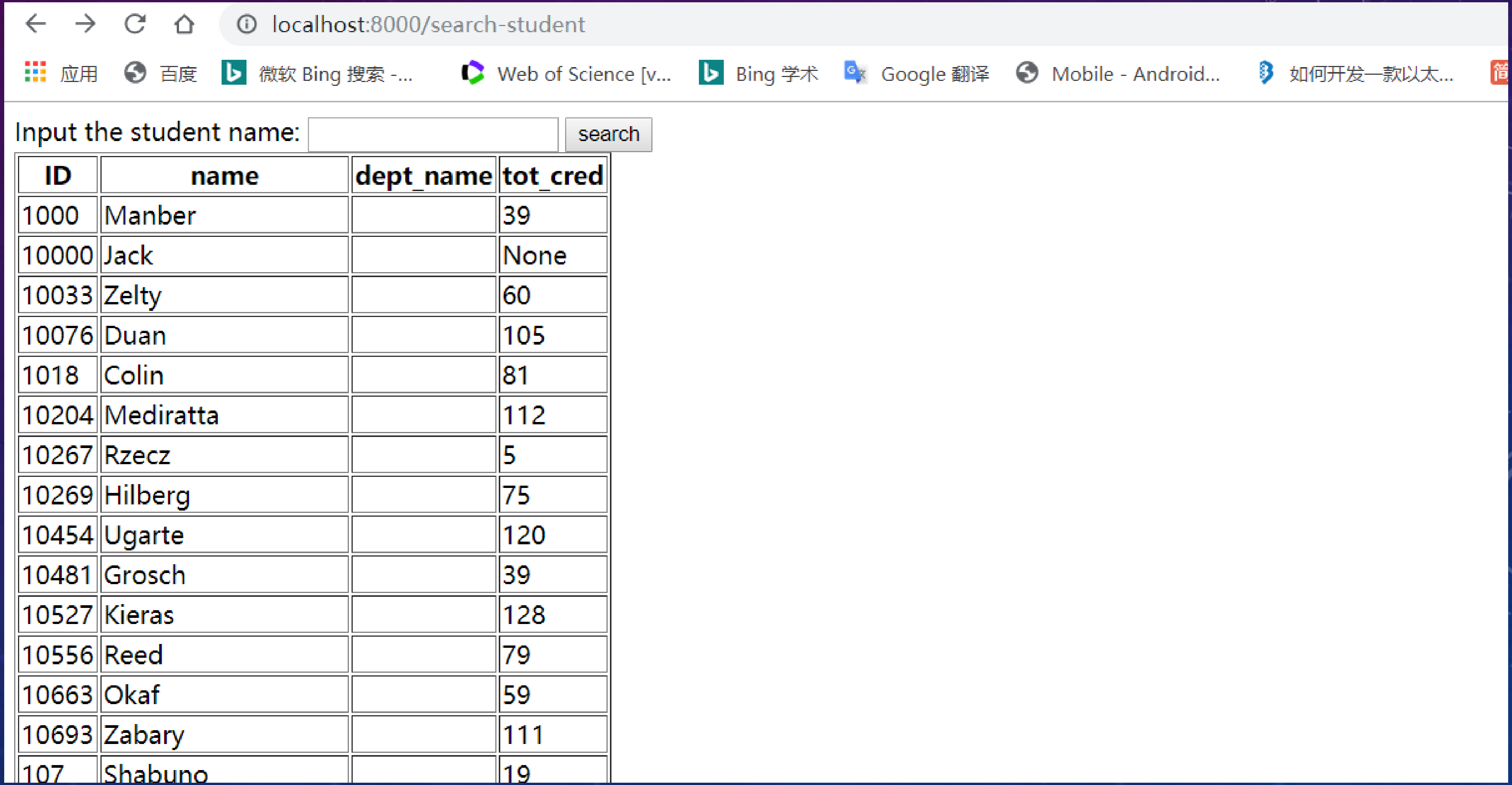


```
from django.conf.urls import url

from . import view

urlpatterns = [
    url(r’^search-student$’, view.show_student),
]
```

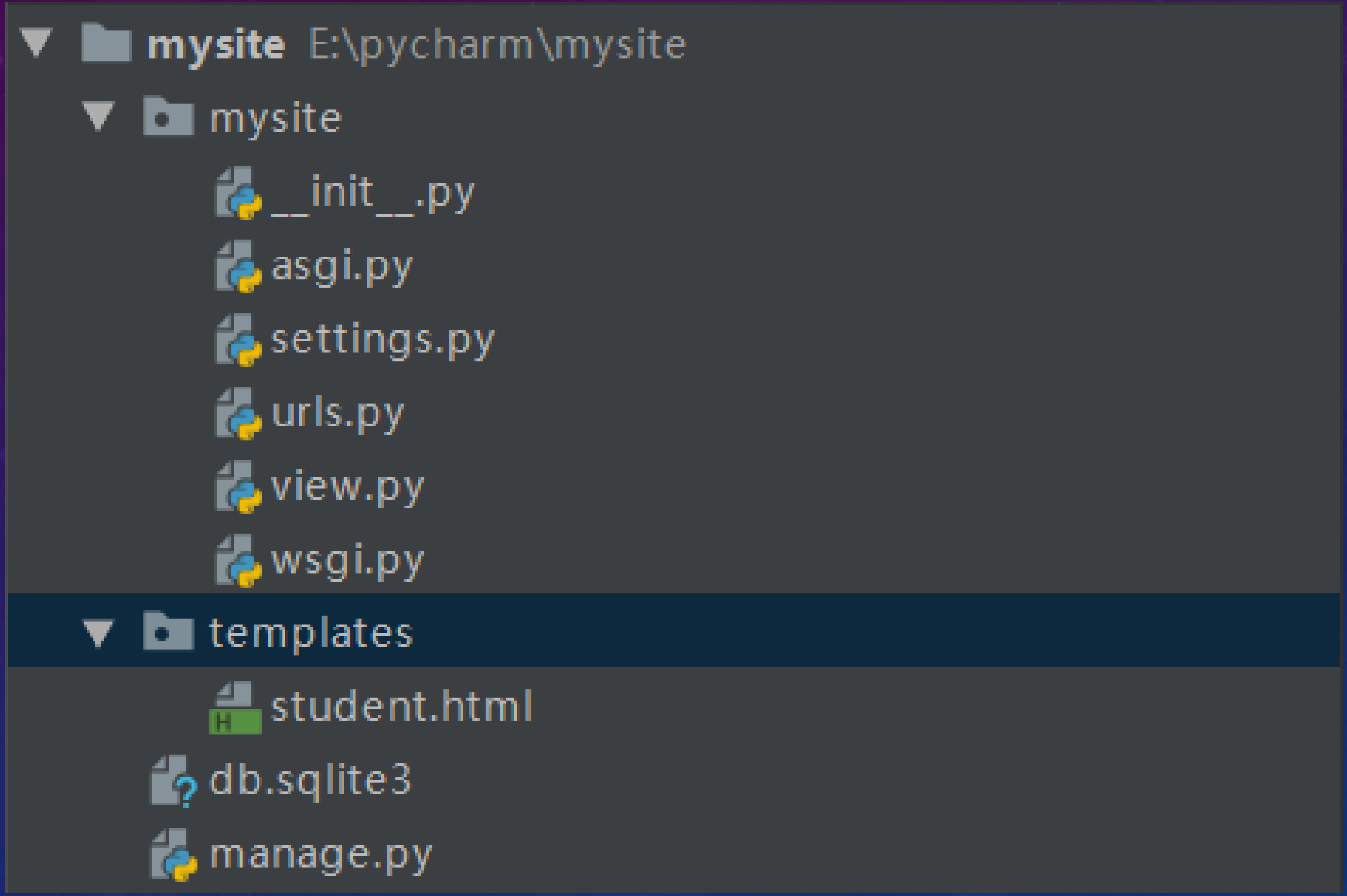
# WEB APP EXAMPLE



Input the student name:

| ID | name | dept_name | tot_cred |
|---|---|---|---|
| 1000 | Manber | | 39 |
| 10000 | Jack | | None |
| 10033 | Zelty | | 60 |
| 10076 | Duan | | 105 |
| 1018 | Colin | | 81 |
| 10204 | Mediratta | | 112 |
| 10267 | Rzecz | | 5 |
| 10269 | Hilberg | | 75 |
| 10454 | Ugarte | | 120 |
| 10481 | Grosch | | 39 |
| 10527 | Kieras | | 128 |
| 10556 | Reed | | 79 |
| 10663 | Okaf | | 59 |
| 10693 | Zabary | | 111 |
| 107 | Shabuno | | 19 |

# PROJECT STRUCTURE



```
▼ mysite  E:\pycharm\mysite
    ▼ mysite
          __init__.py
          asgi.py
          settings.py
          urls.py
          view.py
          wsgi.py
    ▼ templates
          student.html
      db.sqlite3
      manage.py
```

# INTRODUCTION PROJECT

- 子目录mysite下表示工程的全局配置，分别为setttings.py、urls.py和wsgi.py,其中
  - ✓ setttings.py包括了系统的数据库配置、应用配置和其他配置
  - ✓ view.py 处理数据库的逻辑操作
  - ✓ urls.py则表示web工程Url映射的配置
  - ✓ templates目录则为模板文件的目录
  - ✓ manage.py是Django提供的一个管理工具，可以同步数据库等

# QUIZ

- …

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# THANKS！

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