1.环境搭建

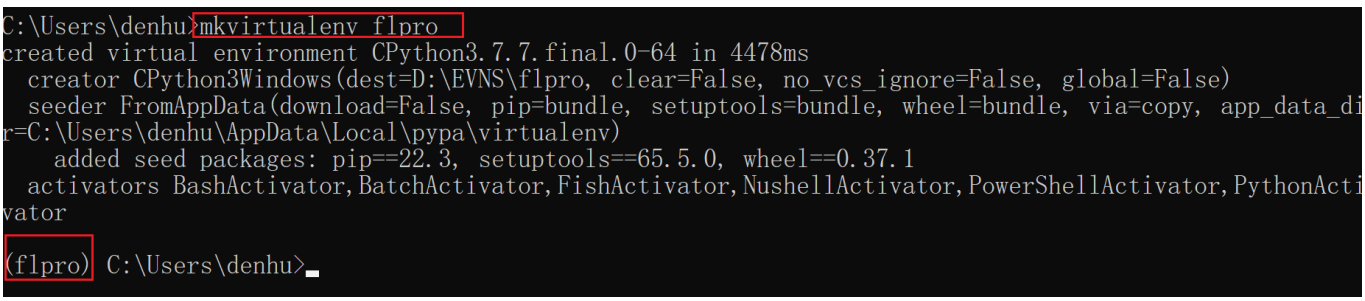
接触过虚拟环境的同学可通过虚拟环境

未接触的同学可使用你自己的主环境

虚拟环境创建

接触过虚拟环境的同学可使用此操作

```
mkvirtualenv flpro  # 创建flpro环境
```



安装flask

```
pip install flask
```

```
(flpro) C:\Users\denhu>pip install flask
Collecting flask
  Using cached Flask-2.2.2-py3-none-any.whl (101 kB)
Collecting click>=8.0
  Using cached click-8.1.3-py3-none-any.whl (96 kB)
Collecting importlib-metadata>=3.6.0
  Using cached importlib_metadata-5.0.0-py3-none-any.whl (21 kB)
Collecting itsdangerous>=2.0
  Using cached itsdangerous-2.1.2-py3-none-any.whl (15 kB)
Collecting Jinja2>=3.0
  Using cached Jinja2-3.1.2-py3-none-any.whl (133 kB)
Collecting Werkzeug>=2.2.2
  Using cached Werkzeug-2.2.2-py3-none-any.whl (232 kB)
Collecting colorama
  Using cached colorama-0.4.6-py2.py3-none-any.whl (25 kB)
Collecting typing-extensions>=3.6.4
  Using cached typing_extensions-4.4.0-py3-none-any.whl (26 kB)
Collecting zipp>=0.5
  Using cached zipp-3.10.0-py3-none-any.whl (6.2 kB)
Collecting MarkupSafe>=2.0
  Using cached MarkupSafe-2.1.1-cp37-cp37m-win_amd64.whl (17 kB)
Installing collected packages: zipp, typing-extensions, MarkupSafe, itsdangerous, colorama, Werkzeug, J
inja2, importlib-metadata, click, flask
Successfully installed Jinja2-3.1.2 MarkupSafe-2.1.1 Werkzeug-2.2.2 click-8.1.3 colorama-0.4.6 flask-2.
2.2 importlib-metadata-5.0.0 itsdangerous-2.1.2 typing-extensions-4.4.0 zipp-3.10.0
```

```
(flpro) C:\Users\denhu>pip list
Package            Version
------------------ -------
click              8.1.3
colorama           0.4.6
Flask              2.2.2
importlib-metadata 5.0.0
itsdangerous       2.1.2
Jinja2             3.1.2
MarkupSafe         2.1.1
pip                22.3
setuptools         65.5.0
typing_extensions  4.4.0
Werkzeug           2.2.2
wheel              0.37.1
zipp               3.10.0
```

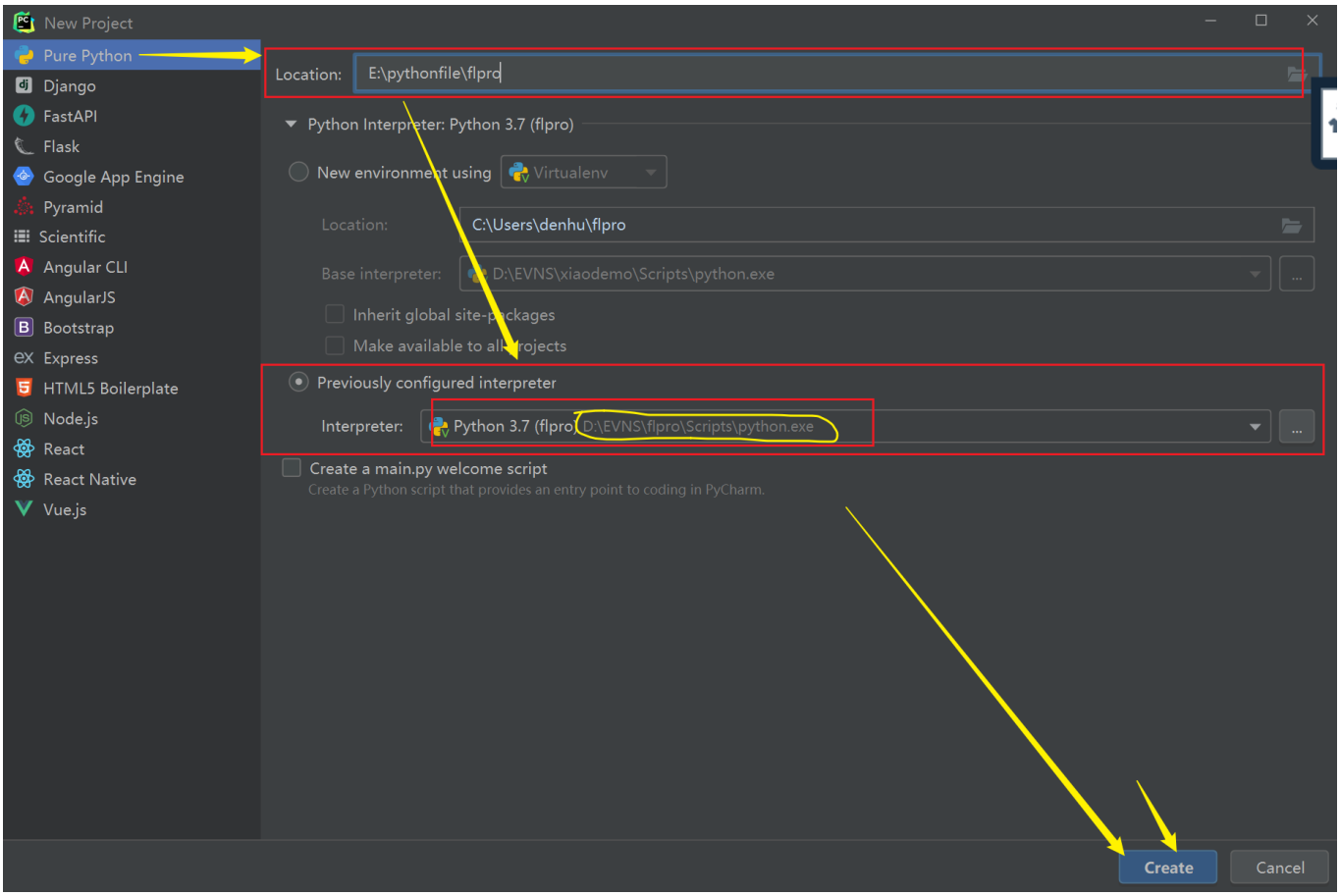
2.项目创建

查看环境位置

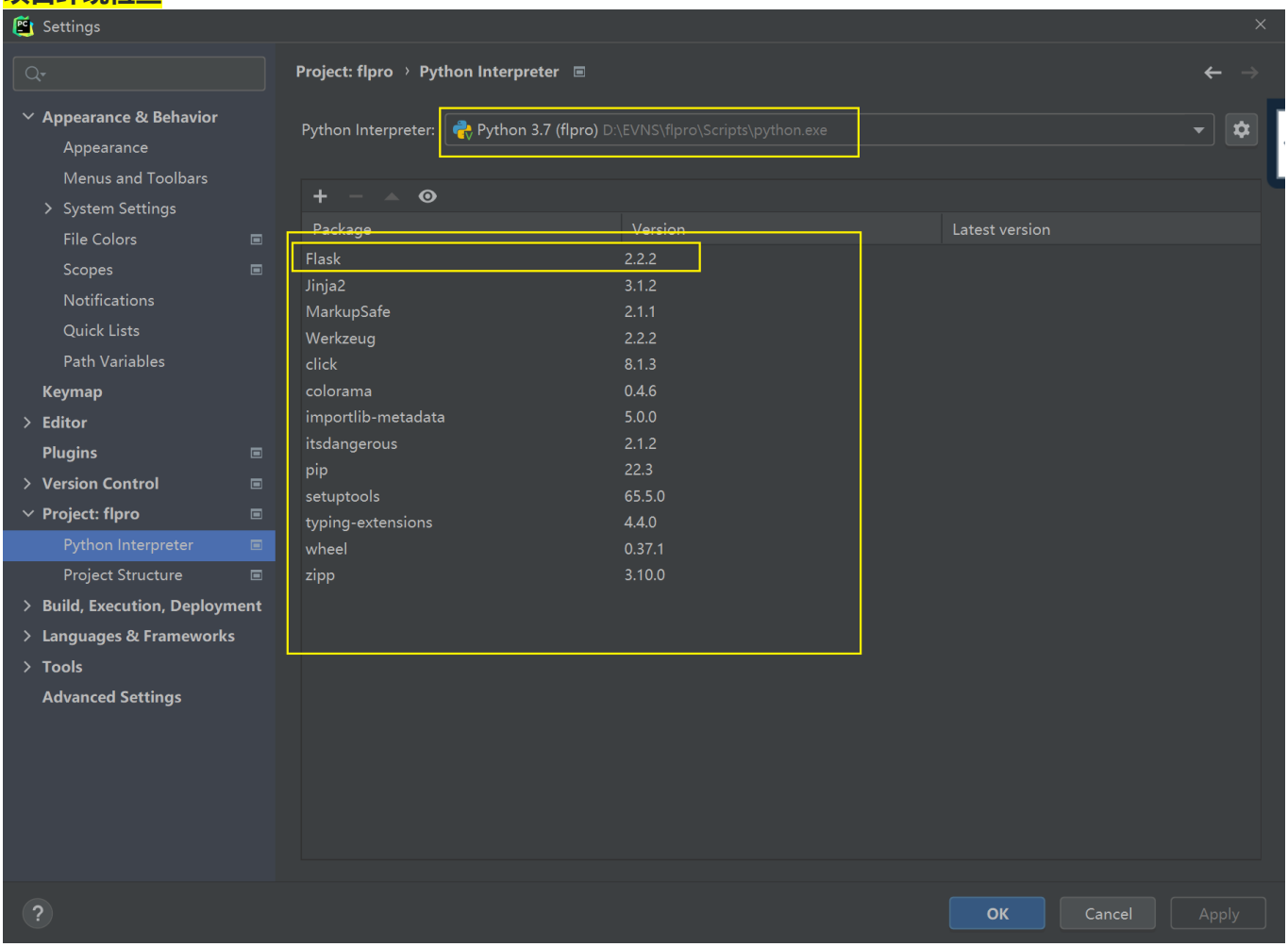
```
where python
```

```
(flpro) C:\Users\denhu>where python
D:\EVNS\flpro\Scripts\python.exe
D:\应用\python37\python.exe

(flpro) C:\Users\denhu>
```

创建项目


New Project
Pure Python
Django
FastAPI
Flask
Google App Engine
Pyramid
Scientific
Angular CLI
AngularJS
Bootstrap
Express
HTML5 Boilerplate
Node.js
React
React Native
Vue.js
Location: E:\pythonfile\flpro
Python Interpreter: Python 3.7 (flpro)
New environment using Virtualenv
Location: C:\Users\denhu\flpro
Base interpreter: D:\EVNS\xiaodemo\Scripts\python.exe
Inherit global site-packages
Make available to all projects
Previously configured interpreter
Interpreter: Python 3.7 (flpro) D:\EVNS\flpro\Scripts\python.exe
Create a main.py welcome script
Create a Python script that provides an entry point to coding in PyCharm.
Create
Cancel

项目环境检查


Settings
Project: flpro › Python Interpreter
Appearance & Behavior
Appearance
Menus and Toolbars
System Settings
File Colors
Scopes
Notifications
Quick Lists
Path Variables
Keymap
Editor
Plugins
Version Control
Project: flpro
Python Interpreter
Project Structure
Build, Execution, Deployment
Languages & Frameworks
Tools
Advanced Settings
Python Interpreter: Python 3.7 (flpro) D:\EVNS\flpro\Scripts\python.exe
Package Version Latest version
Flask 2.2.2
Jinja2 3.1.2
MarkupSafe 2.1.1
Werkzeug 2.2.2
click 8.1.3
colorama 0.4.6
importlib-metadata 5.0.0
itsdangerous 2.1.2
pip 22.3
setuptools 65.5.0
typing-extensions 4.4.0
wheel 0.37.1
zipp 3.10.0
OK
Cancel
Apply

3.项目布局

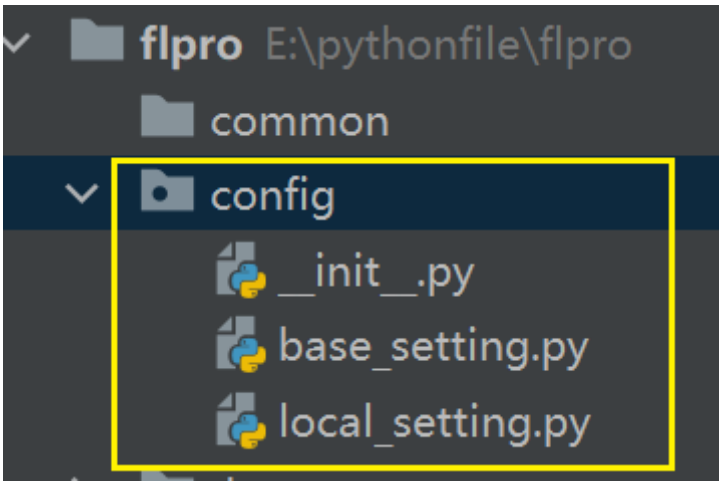
web模块中仅包含models，statics，templates，views

注意辨别同级问题

4.配置编写

创建mysql库

```
create database food_db charset=utf8;
```




```
# -*- encoding: utf-8 -*-
"""
File       : config/base_setting.py
teaching   :
    flask配置
"""

SERVER_PORT = 8888
DEBUG = False
SQLALCHEMY_ECHO = False
SECRET_KEY = 'fljgklajdglkajgkljaglka'
# 解决中文在浏览器中显示的问题
JSON_AS_ASCII = False
```

```
# -*- encoding: utf-8 -*-
"""
File       : config/local_setting.py
teaching   :
    数据库连接配置
"""
DEBUG = True
SQLALCHEMY_ECHO = True
SQLALCHEMY_DATABASE_URI = 'mysql+pymysql://root:qwe123@127.0.0.1/food_db?charset=utf8'
SQLALCHEMY_TRACK_MODIFICATIONS = False
SQLALCHEMY_ENCODING = "utf8"
```

5.项目搭建-搭建应用实例

```
# 安装 Flask-SQLAlchemy
pip install Flask-SQLAlchemy -i https://pypi.tuna.tsinghua.edu.cn/simple

# 安装pymysql
pip install pymysql -i https://pypi.tuna.tsinghua.edu.cn/simple
```

```
# 安装flask_script
pip install flask-script -i https://pypi.tuna.tsinghua.edu.cn/simple
```

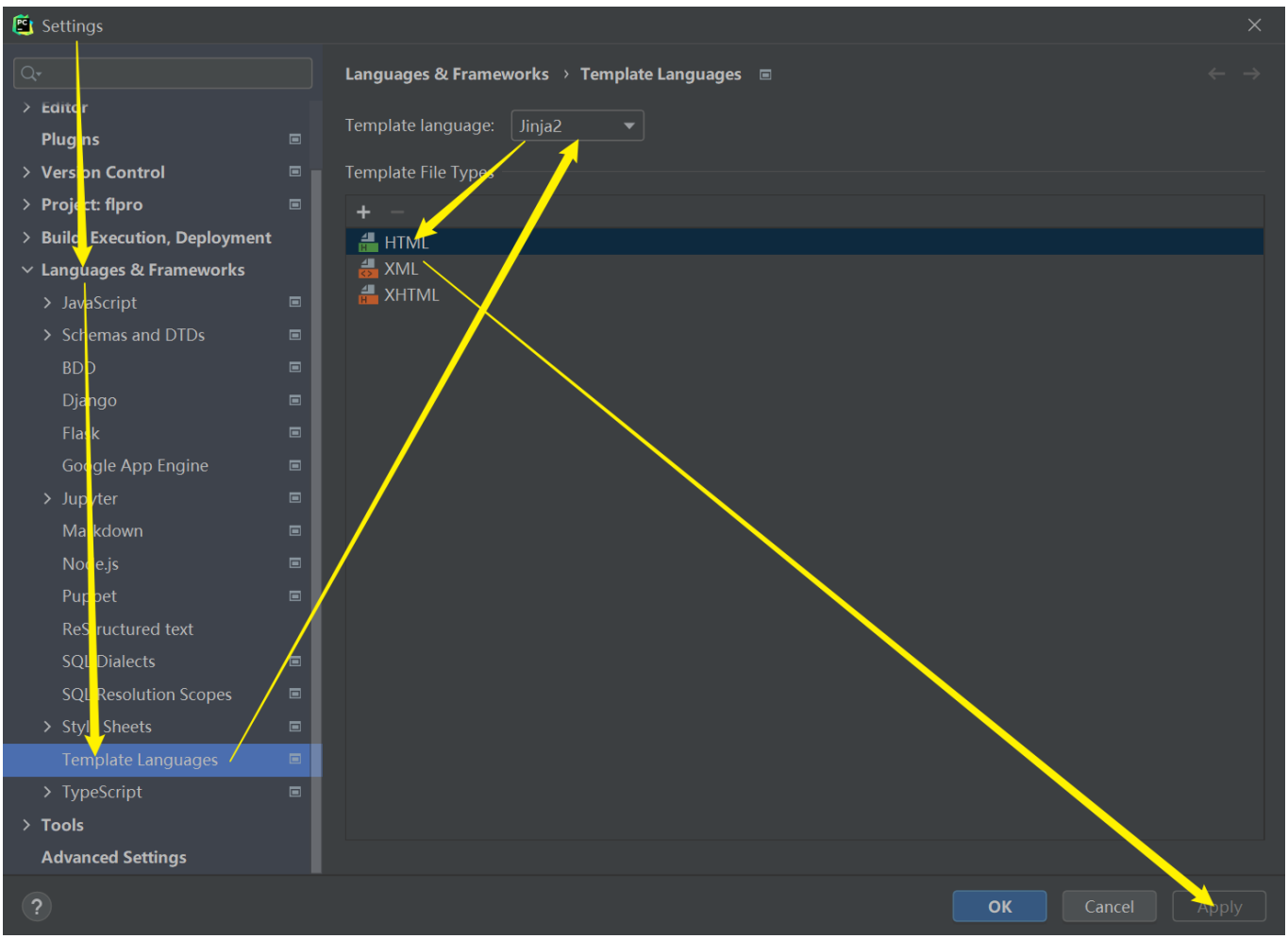
扩展

```
# 1.platform模块
import platform
print(platform.system().lower())  # 获取系统类型 例如：windows
```

application.py

```
# -*- encoding: utf-8 -*-
"""
File       : application.py
teaching   :
    应用实例

"""
from flask import Flask
from flask_script import Manager
from flask_sqlalchemy import SQLAlchemy
import os
import platform
from common.lib.UrlManager import UrlManager

# 实例数据库对象
db = SQLAlchemy()


# 重构flask初始化
class Application(Flask):

    def __init__(self, import_name, template_folder=None, root_path=None,static_folder='statics'):
        """

        :param import_name:
        :param template_folder: 模板文件
        :param root_path: 应用程序文件的根路径
        """
        # 继承原有初始化
        super(Application, self).__init__(import_name,
                                          template_folder=template_folder,
                                          static_folder=static_folder,
                                          root_path=root_path)

        # 加载Flask配置
        self.config.from_pyfile('config/base_setting.py')  # 不管本地还是线上都需要的配置

        # 根据系统选择配置加载
        if platform.system().lower() == "windows":
            self.config.from_pyfile('config/local_setting.py')  # 本地配置
        elif platform.system().lower() == "linux":
            self.config.from_pyfile('config/production_setting.py')  # 可在config下建立一个
production_setting文件
        else:  # 通用配置
```

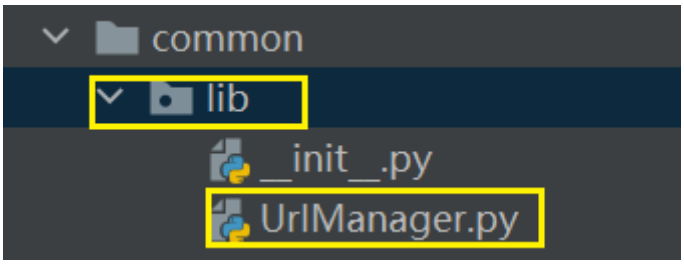
```
            self.config.from_pyfile('config/local_setting.py')

        # 初始化数据库对象连接配置
        db.init_app(self)


# 拼接模板目录绝对路径  --- 适应项目上线，测试等移植部署
# os.getcwd() 获取当前文件 所在目录的绝对路径
template_folder = os.getcwd() + "/web/templates/"
# print('template_folder:', template_folder)

# 实例应用对象
app = Application(__name__, template_folder=template_folder, root_path=os.getcwd())

# 实例应用管理对象
manager = Manager(app)
```



全局模板函数

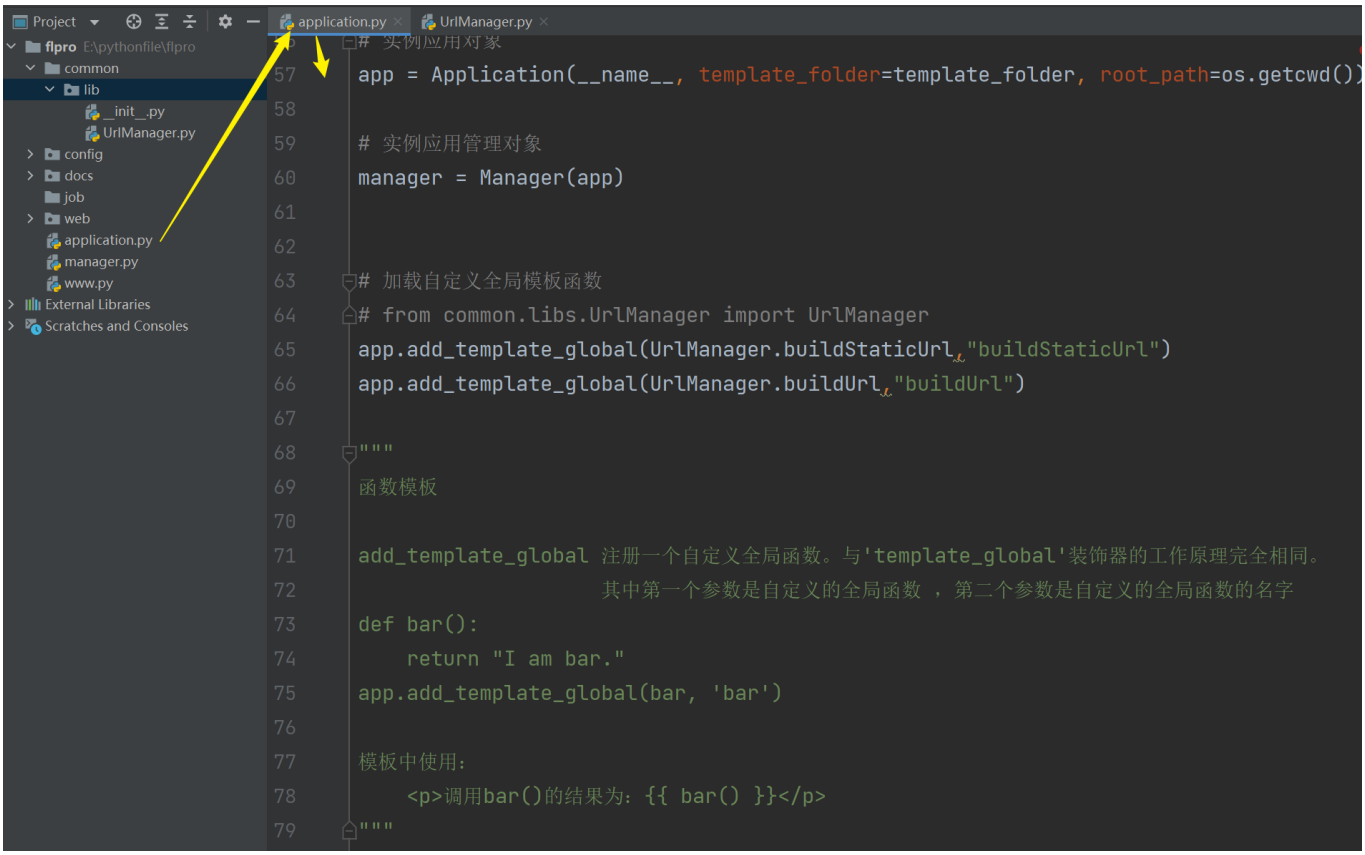
在common模块中创建lib目录

在common的lib目录中建立UrlManager.py文件




```
# -*- coding: utf-8 -*-
# common/lib/UrlManager.py
class UrlManager(object):
    def __init__(self):
        pass

    @staticmethod
    def buildUrl(path):
        """
        构建地址
        :param path:
        :return: 地址
        """
        return path

    @staticmethod
    def buildStaticUrl(path):
        """
        构建静态地址
        :param path:
        :return: 地址
        """
        ver = "%s"%(22222222)
        path = "/static" + path + "?ver=" + ver
        return UrlManager.buildUrl(path)
```

回到application.py，进行注册全局模板函数




```
# 加载自定义全局模板函数
# from common.lib.UrlManager import UrlManager
app.add_template_global(UrlManager.buildStaticUrl,"buildStaticUrl")
app.add_template_global(UrlManager.buildUrl,"buildUrl")

"""
函数模板

add_template_global 注册一个自定义全局函数。与'template_global'装饰器的工作原理完全相同。
                    其中第一个参数是自定义的全局函数 ， 第二个参数是自定义的全局函数的名字
def bar():
    return "I am bar."
app.add_template_global(bar, 'bar')

模板中使用:
    <p>调用bar()的结果为: {{ bar() }}</p>
"""
```

6.项目搭建--建立启动项

```
# -*- encoding: utf-8 -*-
"""
File       : manager.py
teaching   :
    启动项
"""
from application import app, manager
from flask_script import Server
```

```
import www


# web server  ---  Server  运行Flask开发服务器，即app.run()


# manager.add_command("runserver", Server(host='0.0.0.0',
#                                         port=app.config['SERVER_PORT'],
#                                         use_debugger=True,
#                                         use_reloader=True
#                                         )
#                     )

# 我们在本地运行 host使用127.0.0.1
manager.add_command("runserver",
                    Server(host='127.0.0.1',
                           port=app.config['SERVER_PORT'],
                           use_debugger=True,
                           use_reloader=True
                           )
                    )


def main():  # 启动函数
    print(app.url_map)  # 查看url列表
    manager.run()  # 启动


if __name__ == '__main__':
    try:
        import sys
        sys.exit(main())  # main启动运行存在异常 sys.exit终止项目运行
        # sys.exit 通过引发SystemExit异常来退出Python程序
    except Exception as e:
        # 捕捉异常后，直接反馈异常回溯信息
        import traceback
        traceback.print_exc()

        # print(e)打印结果为:
        #         division by zero，只知道是报了这个错，但是却不知道在哪个文件哪个函数哪一行报的错。
        # 也就是说无回溯信息
        #
        # traceback.print_exc()打印结果为:  --- 存在完整的回溯信息
        #         Traceback (most recent call last):
        #   File "E:/PycharmProjects/testProject2022/pythonBasic/dataBase/aa.py", line 4, in
<module>
        #     1/0
        # ZeroDivisionError: division by zero
```

运行manager文件， 出现如下问题

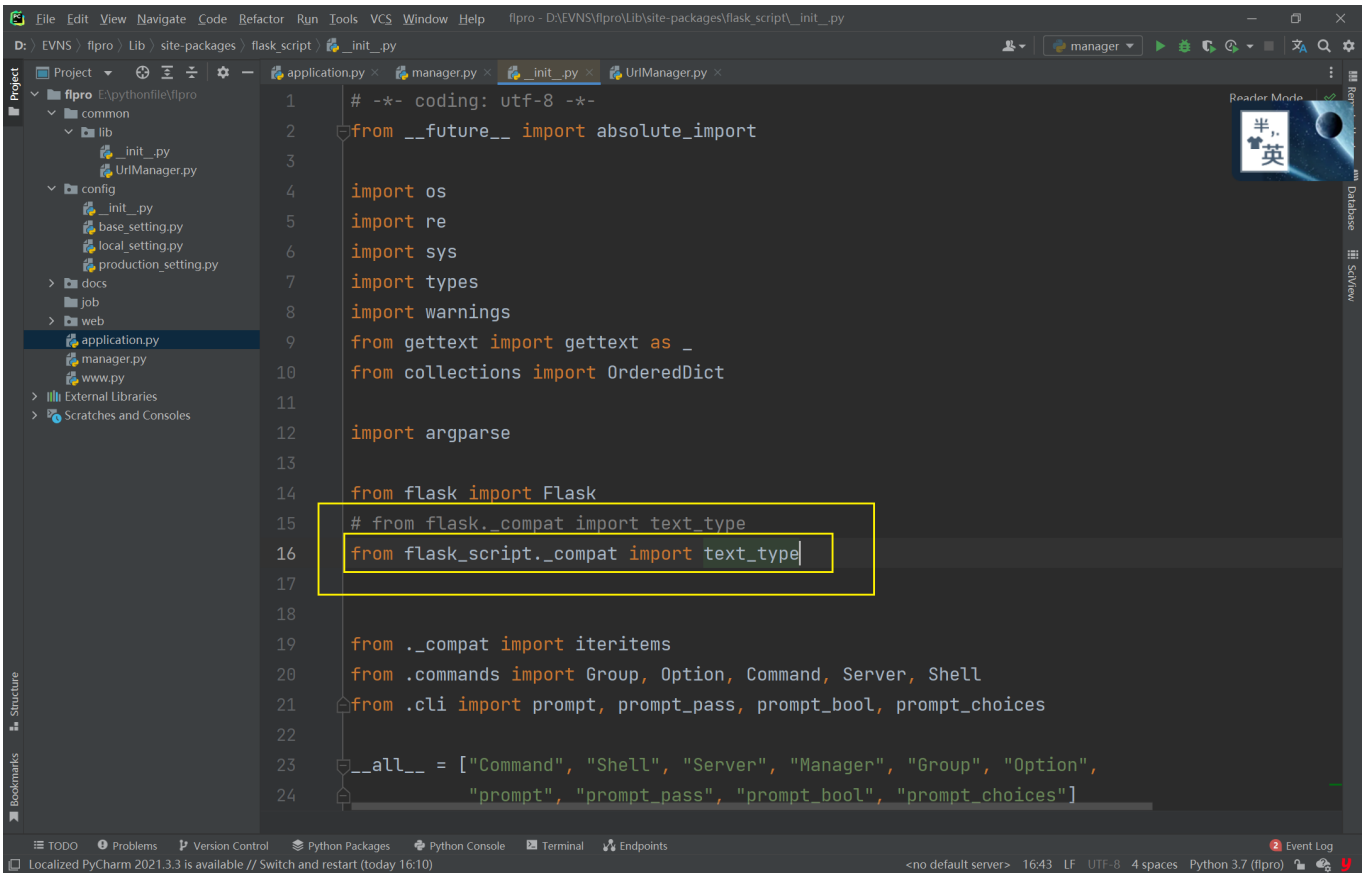
```
Traceback (most recent call last):
  File "E:/pythonfile/flpro/manager.py", line 8, in <module>
    from application import app, manager
  File "E:\pythonfile\flpro\application.py", line 10, in <module>
    from flask_script import Manager
  File "D:\EVNS\flpro\lib\site-packages\flask_script\__init__.py", line 15, in <module>
    from flask._compat import text_type
ModuleNotFoundError: No module named 'flask._compat'
```

不要慌，这是flask_script版本迭代问题，我们之前讲过
解决方案如下

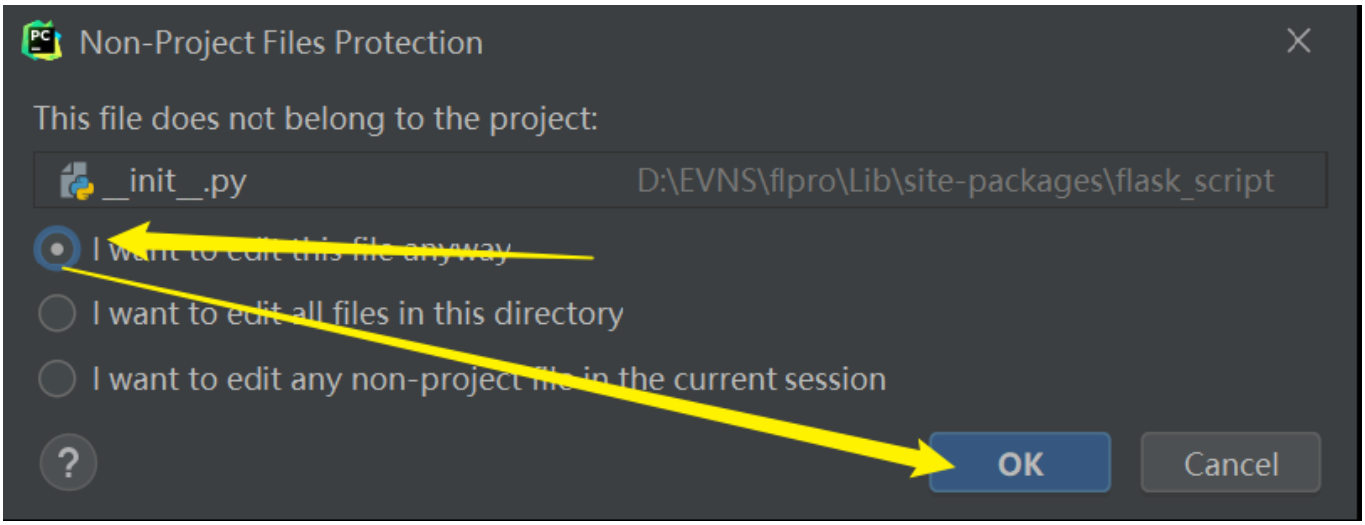
```
D:\EVNS\flpro\Scripts\python.exe E:/pythonfile/flpro/manager.py
Traceback (most recent call last):
  File "E:/pythonfile/flpro/manager.py", line 8, in <module>
    from application import app, manager
  File "E:\pythonfile\flpro\application.py", line 10, in <module>
    from flask_script import Manager
  File "D:\EVNS\flpro\lib\site-packages\flask_script\__init__.py", line 15, in <module>
    from flask._compat import text_type
ModuleNotFoundError: No module named 'flask._compat'

Process finished with exit code 1
```

点击

或者根据此路径寻找到目标文件，文本打开

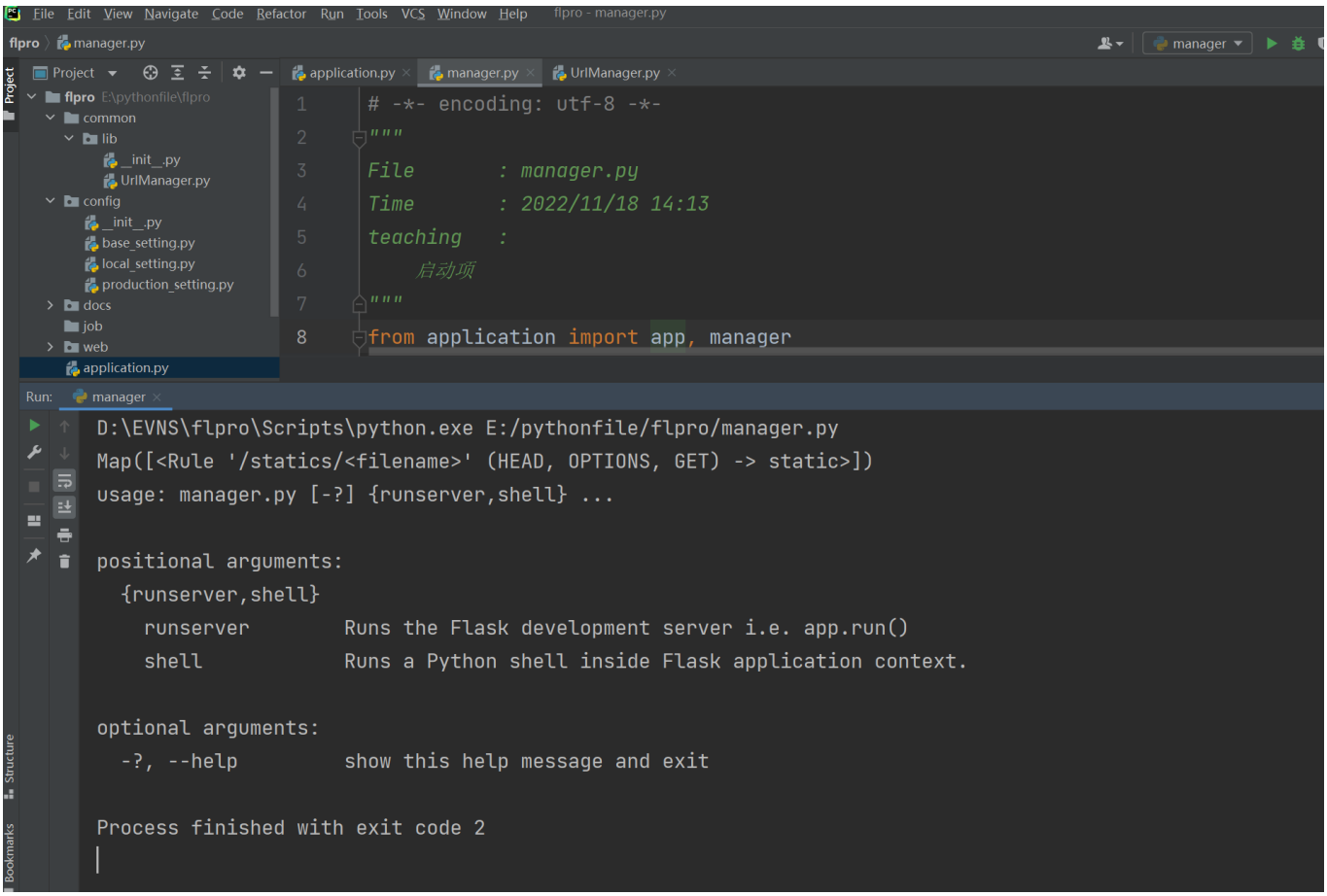


操作时出现弹窗，选择如下



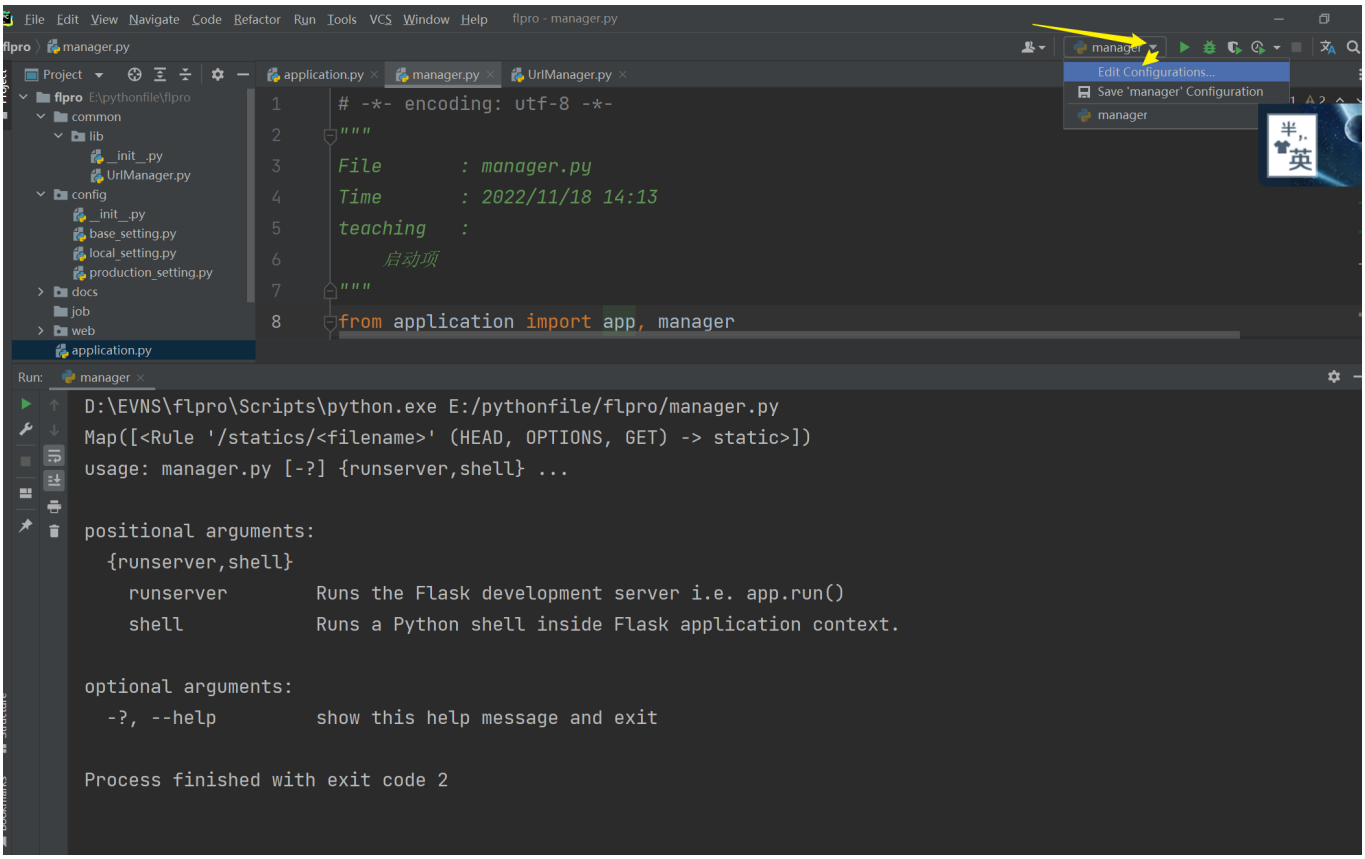
修改完成后记得 `ctrl s` 保存修改

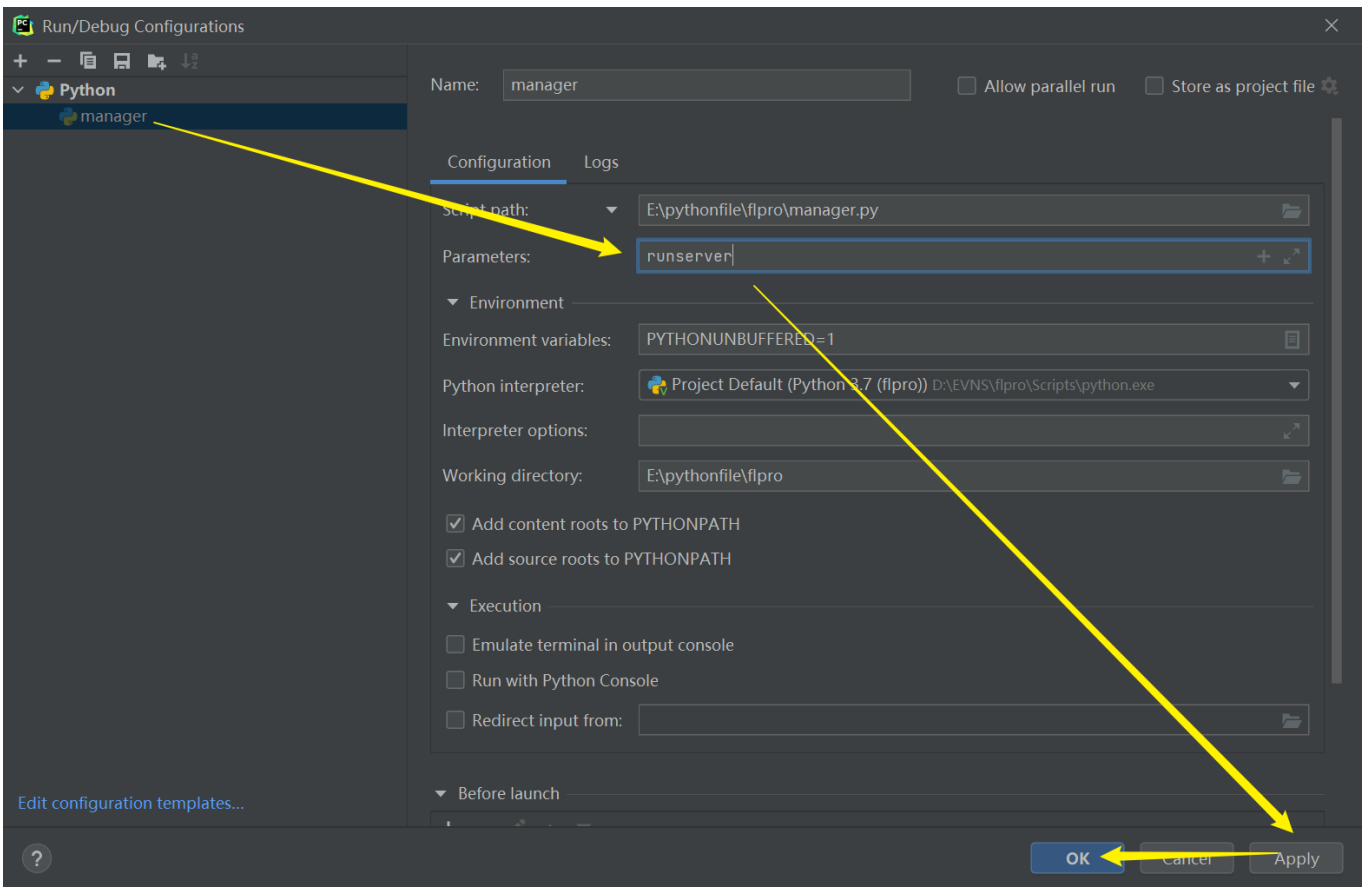
再次运行manager文件，信息如下：



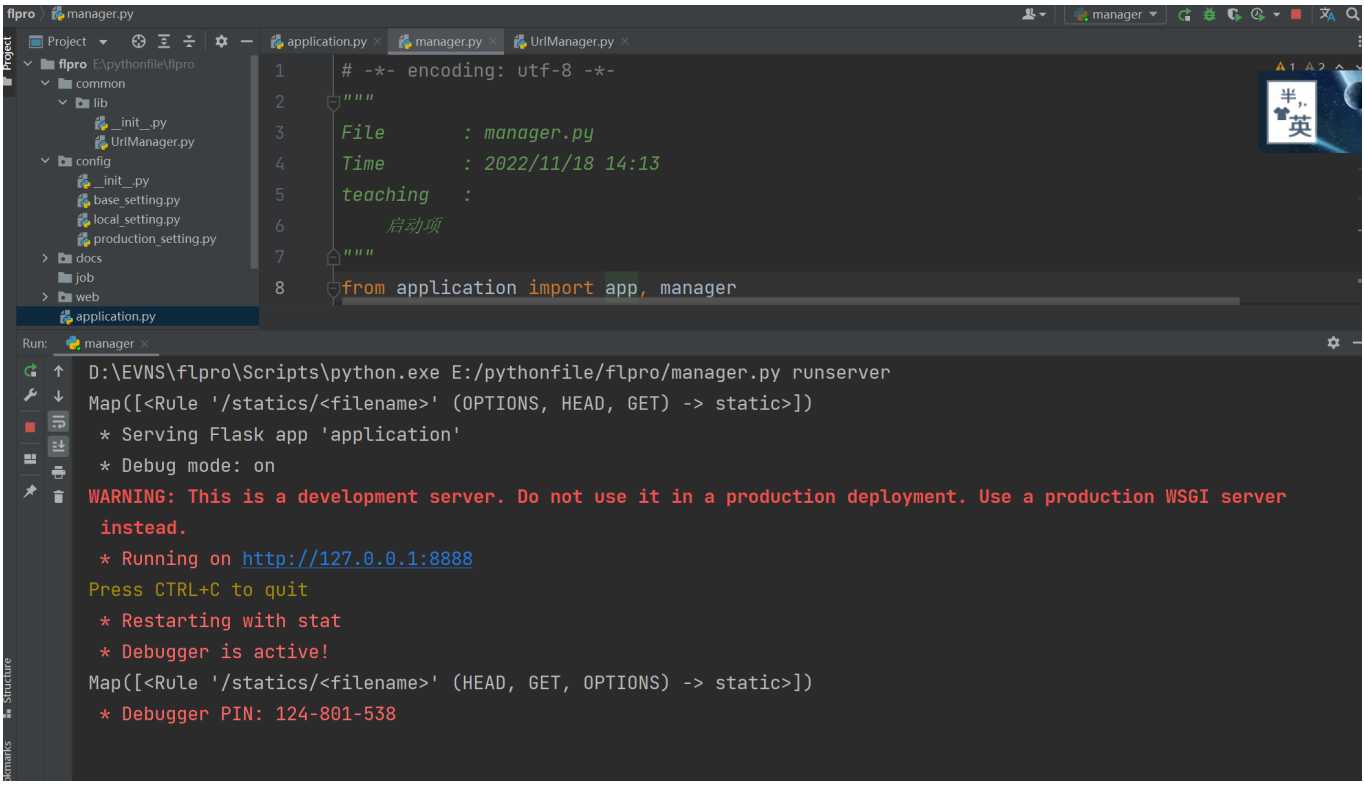
此时说明相关配置无问题

仅需进行如下运行配置编辑


File Edit View Navigate Code Refactor Run Tools VCS Window Help
flpro - manager.py
manager
Edit Configurations...
Save 'manager' Configuration
manager
application.py
manager.py
UrlManager.py
Project
flpro E:\pythonfile\flpro
common
lib
__init__.py
UrlManager.py
config
__init__.py
base_setting.py
local_setting.py
production_setting.py
docs
job
web
application.py
-*- encoding: utf-8 -*-
"""
File : manager.py
Time : 2022/11/18 14:13
teaching :
启动项
"""
from application import app, manager
Run: manager
D:\EVNS\flpro\Scripts\python.exe E:/pythonfile/flpro/manager.py
Map([<Rule '/statics/<filename>' (HEAD, OPTIONS, GET) -> static>])
usage: manager.py [-?] {runserver,shell} ...
positional arguments:
{runserver,shell}
runserver Runs the Flask development server i.e. app.run()
shell Runs a Python shell inside Flask application context.
optional arguments:
-?, --help show this help message and exit
Process finished with exit code 2

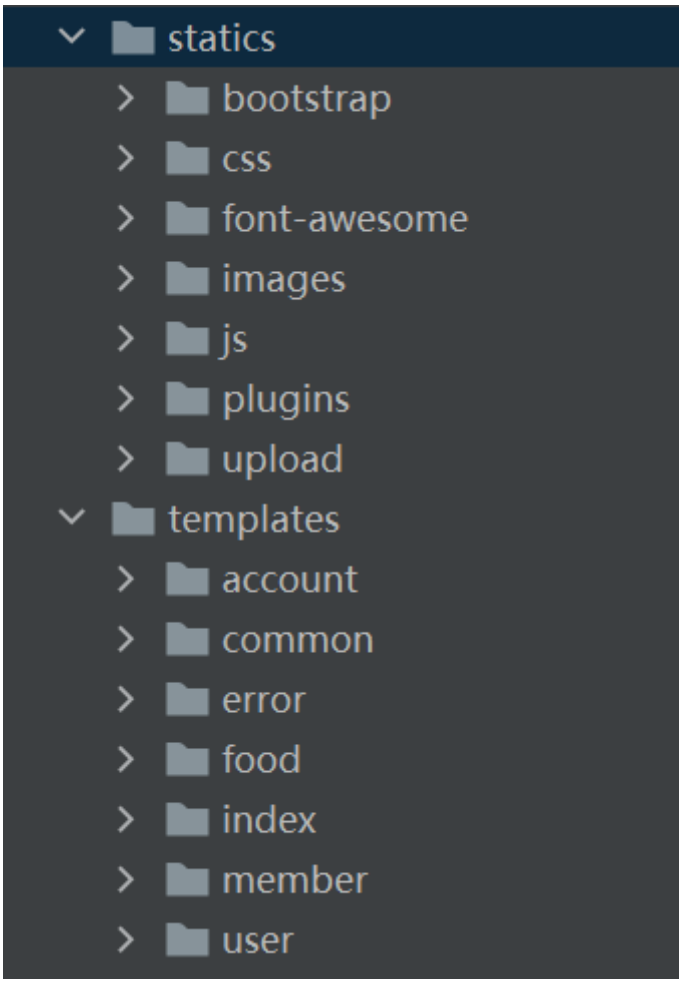

Run/Debug Configurations
Python
manager
Name: manager
Allow parallel run
Store as project file
Configuration
Logs
Script path: E:\pythonfile\flpro\manager.py
Parameters: runserver
Environment
Environment variables: PYTHONUNBUFFERED=1
Python interpreter: Project Default (Python 3.7 (flpro)) D:\EVNS\flpro\Scripts\python.exe
Interpreter options:
Working directory: E:\pythonfile\flpro
Add content roots to PYTHONPATH
Add source roots to PYTHONPATH
Execution
Emulate terminal in output console
Run with Python Console
Redirect input from:
Before launch
Edit configuration templates...
OK
Cancel
Apply

再次运行就ok了



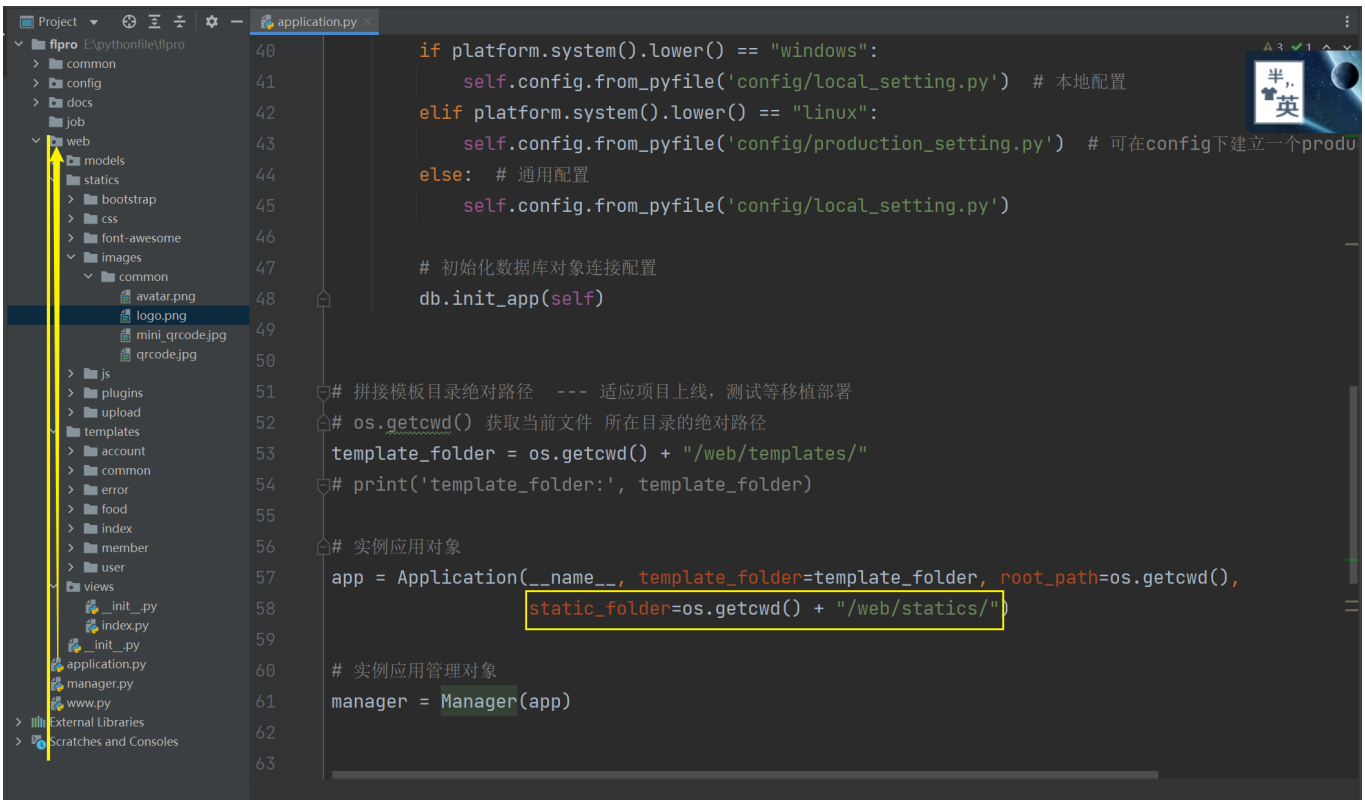
7.项目搭建-引入模板资源

模板资源直接那我项目中的

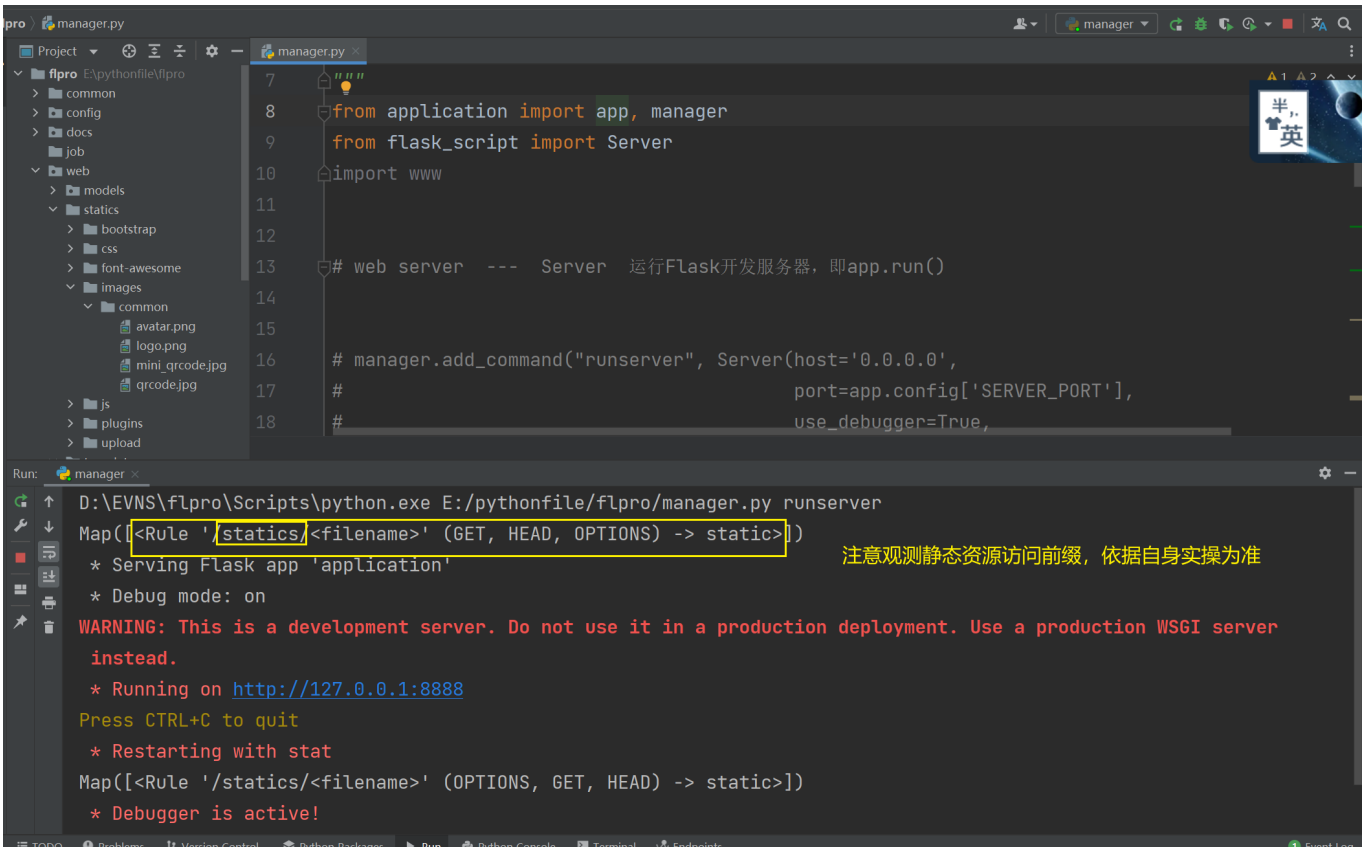


8.项目搭建-测试访问静态资源

调整配置 application.py中实例应用配置时的static_folder资源指向



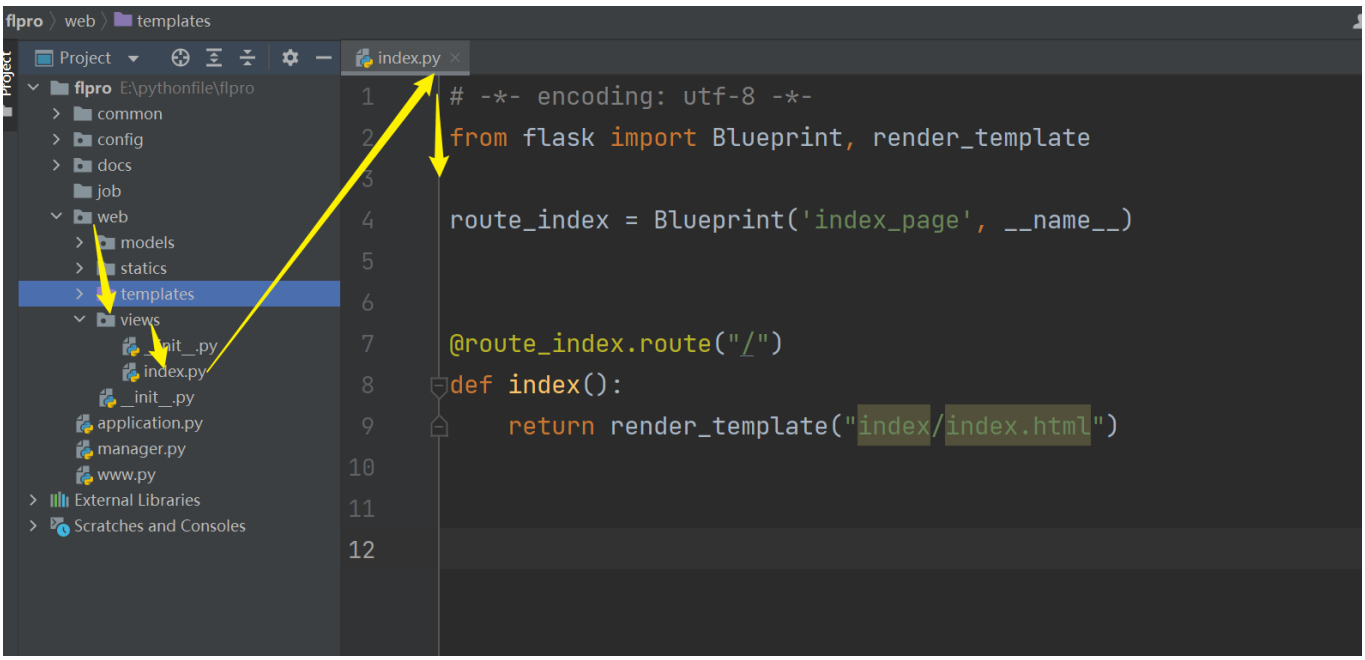
测试访问：如上图中statics中的images/common/logo.png



http://127.0.0.1:8888/statics/images/common/logo.png

9.项目搭建-蓝图视图

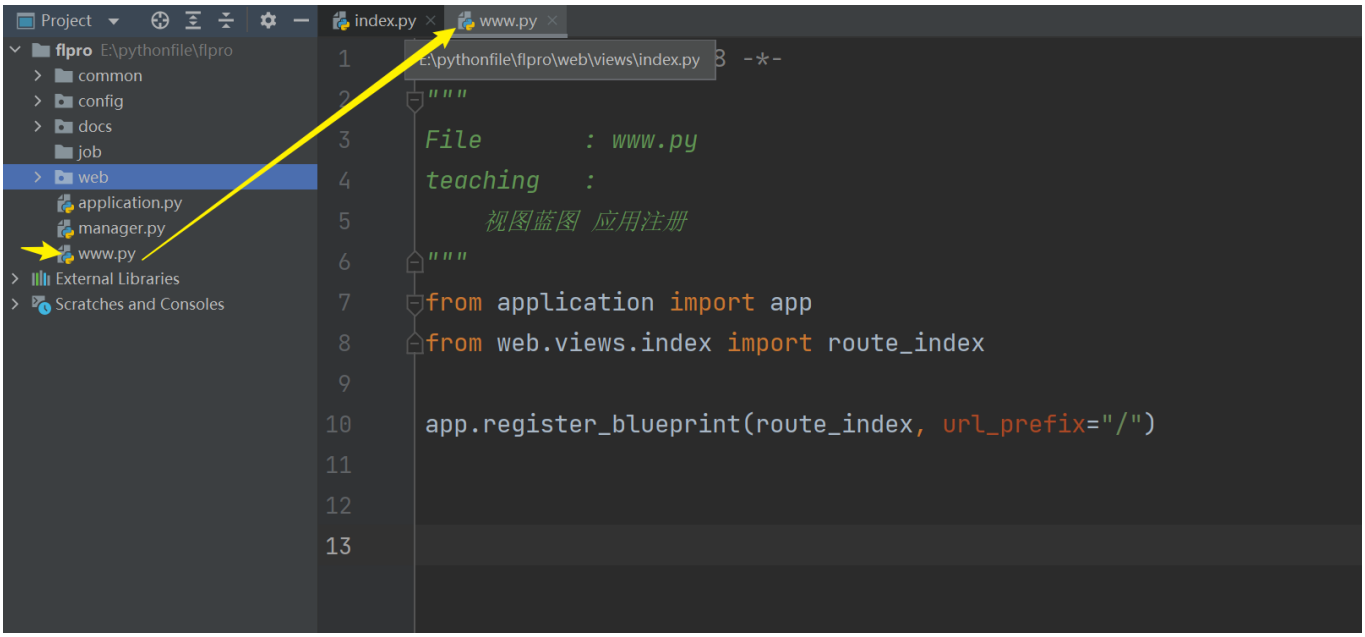
建立测试视图index



```
# -*- encoding: utf-8 -*-
from flask import Blueprint, render_template

route_index = Blueprint('index_page', __name__)


@route_index.route("/")
def index():
    return render_template("index/index.html")
```

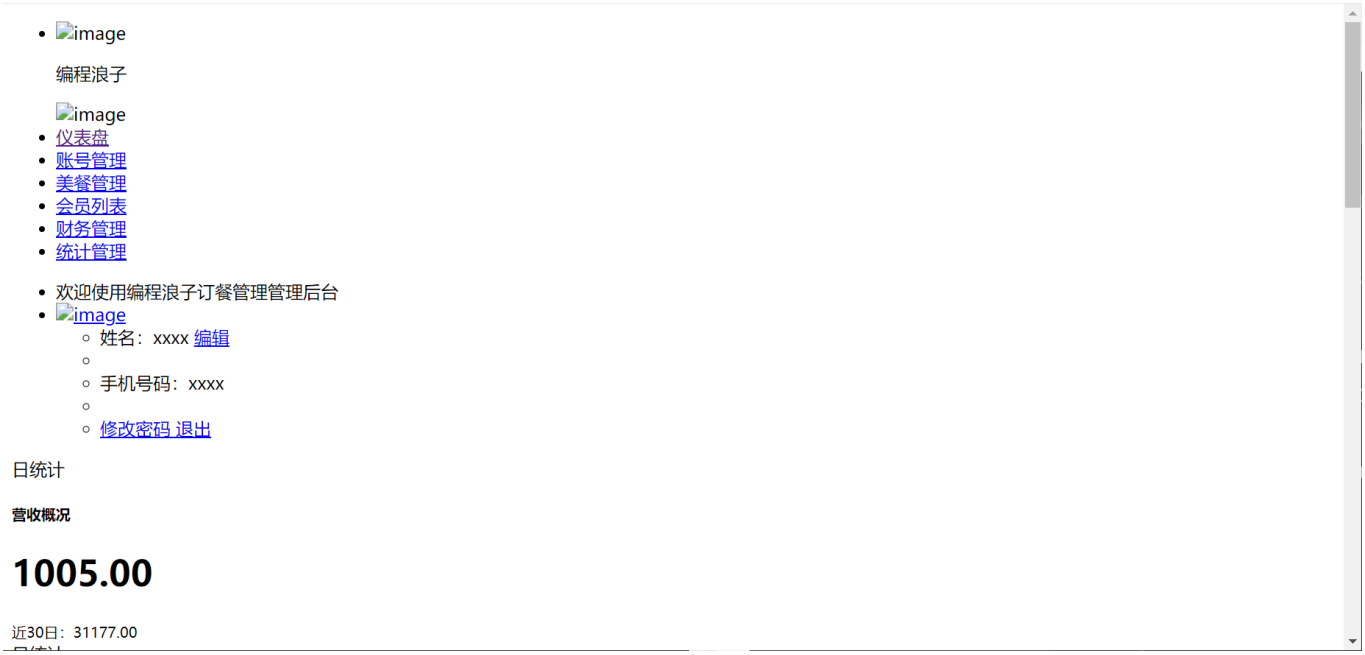
注册蓝图

```
# -*- encoding: utf-8 -*-
"""
File       : www.py
teaching   :
    视图蓝图 应用注册
"""
from application import app
from web.views.index import route_index

app.register_blueprint(route_index, url_prefix="/")
```



启动访问测试

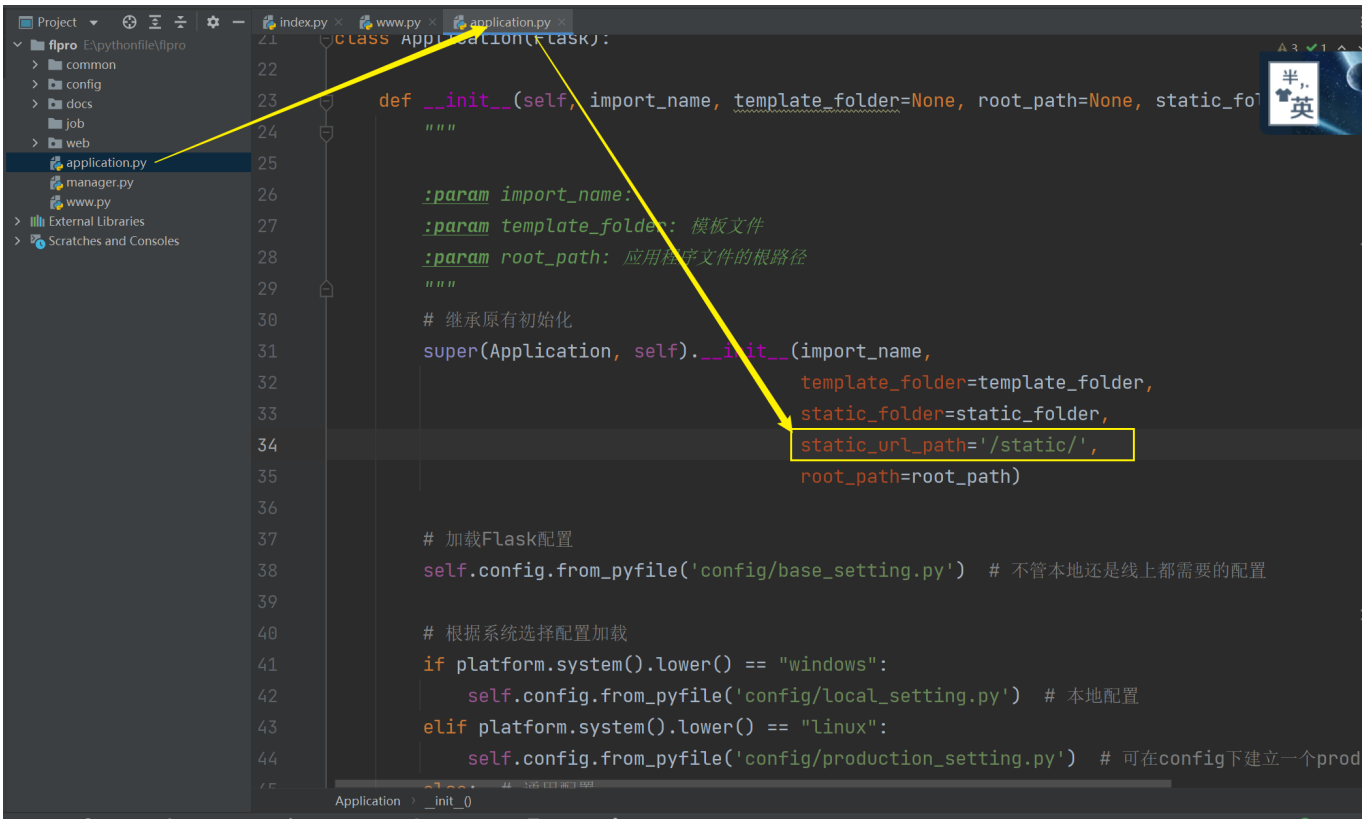
```
http://127.0.0.1:8888/
```



静态资源加载失败
经过如下分析 --- 访问前缀static但是我们想默认为statics

```
Map([<Rule '/statics/<filename>' (OPTIONS, GET, HEAD) -> static>,
 <Rule '/' (OPTIONS, GET, HEAD) -> index_page.index>])
 * Serving Flask app 'application'
 * Debug mode: on
WARNING: This is a development server. Do not use it in a production deployment. Use a production WSGI server
 instead.
 * Running on http://127.0.0.1:8888
Press CTRL+C to quit
 * Restarting with stat
Map([<Rule '/statics/<filename>' (GET, OPTIONS, HEAD) -> static>,
 <Rule '/' (GET, OPTIONS, HEAD) -> index_page.index>])
 * Debugger is active!
 * Debugger PIN: 124-801-538
127.0.0.1 - - [18/Nov/2022 18:17:21] "GET / HTTP/1.1" 200 -
127.0.0.1 - - [18/Nov/2022 18:17:21] "GET / HTTP/1.1" 200 -
127.0.0.1 - - [18/Nov/2022 18:17:21] "GET /static/bootstrap/bootstrap.min.css?ver=22222222 HTTP/1.1" 404 -
127.0.0.1 - - [18/Nov/2022 18:17:21] "GET /static/font-awesome/css/font-awesome.min.css?ver=22222222 HTTP/1.1" 404
  -
127.0.0.1 - - [18/Nov/2022 18:17:21] "GET /static/css/style.css?ver=22222222 HTTP/1.1" 404 -
127.0.0.1 - - [18/Nov/2022 18:17:21] "GET /static/plugins/jquery-2.1.1.js?ver=22222222 HTTP/1.1" 404 -
```

解决方案：application.py 调整如下--指明前缀为static



启动访问测试

http://127.0.0.1:8888/